

**FOSTERING FOREIGN LANGUAGE LEARNING AMONG  
LESS SUCCESSFUL LEARNERS:  
EXPLORING THE ROLE OF SELF-DIRECTED MULTIMEDIA  
LEARNING ENVIRONMENTS**

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**A Thesis submitted for the Degree of  
Doctor of Philosophy**

**School of Education, Communication and Language Sciences  
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England**

**2010**

## ABSTRACT

Multimedia CD-ROM based materials are widely used for self-directed language learning purposes, but their use remains an under-researched topic in the field of computer-assisted language learning (CALL). Previous research on successful foreign language learners shows a significant correlation between success in learning a foreign language and individual traits. This study therefore examines the learning processes of less successful learners in self-directed multimedia language learning environments and the impact on individual traits.

Viewing self-directed multi-media language learning as a social practice, rather than an instructional tool for learning a foreign language, this exploratory study attempts to understand how participants are involved with human-computer and human-human interaction and how the processes reconstruct individual traits in self-directed multimedia learning environments. Factors such as multi-media features, non-multi-media settings (e.g. peers, the instructor, and reflective activities) learners' beliefs and affective status are considered.

The study recruited twelve university students in northern Taiwan, who were low achievers in foreign language (FL) learning and who displayed foreign language anxiety symptoms such as low self-confidence, high FL anxiety and lack of intrinsic motivation. The self-study course lasted for one academic year and the data collection period lasted for two years. The research approach is qualitative, combining intensive interviews, learning diaries, observation, debriefings and inductive data analysis.

The focus of this study is an exploration of the participants' initial perceptions of multi-media environments and non-multi-media factors and their impact, an investigation of problems and challenges encountered and how the participants' coped with these, as well as an examination

of the perceived impact of the multimedia learning experience on the learning of English and other subjects. The findings suggest that, in addition to the mixed but mostly positive impression and attitudes at the initial stages, there were major challenges associated with technical aspects, managing learning and coping with language learning tasks, as the participants strived to learn the target language using various methods and strategies they developed through the interaction with computers and other participants. The results reveal active, struggling, complex and rewarding processes that were constantly affected by a variety of factors: multimedia features, peers, the instructor, and learners' individual traits, especially motivation, self-confidence, strategy use and beliefs about learning.

Specifically, the unique feature of this study is that it documents the learning processes at different stages and the multi-layered and changing nature of factors when learners were faced with different tasks. The results also demonstrate the essential and complex role of peers and the instructor in helping the learners reconstruct their individual traits and in providing scaffolding to reach the ZPD. The process appeared to have a profound impact on the participants in this study and has implications for language researchers or practitioners who intend to employ multimedia for individual use. They should find it useful to consider the problems and challenges learners encountered at the different stages in this study, and the importance of offering both a reflective and social language learning context to facilitate self-directed learning.

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## ACKNOWLEDGEMENT

I am thankful to many who have supported me throughout this research. I am most grateful to my family for their love and faith in me. I would like to give special thanks to my father who guided me when I encountered difficulties and encouraged me not to give up, and my mother who gave me strength at all times. My brothers, Hun-E, Allan and Rick, their wives, and my sister, Lynn, who looked after my daughter and father when I was in England. Special thanks also go to my sister, Janet, and her husband, Nico, who sent me their continuous support, love and warmth to comfort me when I was away from family.

Most especially, I would like to thank my daughter, Sabina (Ting Yun), who tolerated my long working hours in the past few years and cheered me through long-distance calls while I was away from home. Special thanks also go to friends who shared my responsibility as a mother and looked after my daughter during the long absence. I thank a family, Mindy, Andrew, Aaron and Grace, for their unconditioned love and care for Sabina by treating her as one of their family members. I thank Jen, Joseph, May and Vanessa who encouraged and guided my daughter as she needed it. These friends anchored my heart without worries and strengthened me to 'fight for the last battle' in my study with much determination.

I am most grateful to my supervisor, Scott Windeatt in Newcastle University, who has provided me with his time, patience and critical thoughts throughout this long journey. His encouragement and wisdom have inspired me to move on when I hesitated.

I am deeply thankful to all the participants who have given generously of their time. They have shared their experiences with me and provided useful and valuable insights to this study. I also appreciate the assistance, resources and funds provided by the Chang Gung University.

Finally, I would like to express my gratitude to my friends and colleagues, Angela, Kangjen and Jane, for their love, friendship and advice whenever I came across problems. In particular, I would like to thank Eric Beach, who accompanied me at the last vital stage with his continuous care, love and patience with proofreading and viva preparation.

Without the help and support from those people mentioned above, the completion of my thesis would not have been possible.

## **DEDICATION**

**This thesis is dedicated to my parents, E-Ming Kao and In-Ing Lee, and my daughter, Sabina, for their faith in me and unconditional love for me.**

## Chapter 1

### INTRODUCTION

#### 1.1 Background of this study

In many countries, mastery of one or more foreign languages is becoming increasingly important in higher education institutions. "More and more universities and colleges expect proficiency in foreign languages upon college entry or prior to college graduation" (Barr, 1993: 2). However, many university students who are studying a foreign language that they are not proficient in seem to have difficulties meeting such a requirement. They often end up repeating the same courses several times or changing majors, which poses great constraints on students' future careers and the availability of valuable resources in educational institutions. This is a much-neglected but growing problem in university environments in Taiwan, but also in other countries where English is both a second language and the medium of instruction.

This study was undertaken at Chang Gung University, a research university located in northern Taiwan. The motivation for conducting such a study mainly originated from the university policies which place an increasing emphasis on cultivating students' English abilities, which is regarded as a potential means of equipping students with the essential ability for further studies or to increase their job prospects. However, helping less successful students who have a limited interest or low self-confidence in learning English poses a challenge. The constant failure these students had experienced in formal educational settings seems to counteract the universities attempts to promote the students' learning in the subject they previously felt frustrated

with. The university nevertheless endeavours to foster foreign language learning and, among the resources they provide, multimedia CD-ROM resources for self-study purposes available in the audio-visual centre in the university library offer an effective alternative for less successful students. However, the low ratio of use of self-directed resources by students shows there is a critical need to investigate several issues: 'how these students self-study in the self-directed multimedia language learning environments' and 'how their learning can be facilitated' as well as how students perceive the impact of the self-directed multimedia learning experience.

Consequently, the present study is concerned with how multimedia fosters foreign language self-study among less successful learners at university level. The main goal of this study is to better understand the learning processes of a group of less successful university students self-studying English in multimedia environments throughout two semesters of weekly participation in a voluntary project. It aims to examine students' learning processes and their interaction with computers and other participants as a social practice. In particular, my intention is to adopt a sociocultural approach to gain in-depth understanding of how learners construct and co-construct their learning processes and their individual traits, to investigate the possible problems and challenges, and to capture the changes in factors and impact over time. The research findings provide a strong indication that the participants were involved in a series of learning processes that are complex, struggling, daunting and rewarding, which also suggests that interaction with self-directed multimedia language learning environments and the non-multimedia factors is not a simple but a multifaceted, challenging and influential social practice for the learners.

## 1.2 Definitions of key terms

The key terms used in this thesis are briefly defined as follows. More detail regarding the definition is provided in Chapter 2.

- **Less successful language learners/ low-achievers:** The terms 'less successful language learners' and 'low-achievers' refer to students whose English proficiency or academic performance is below the average or around the boundary of failing the subject. For instance, in the educational context in Taiwan, while the passing score for school subjects is 60 and the full score is 100, these low-achievers' scores were around 50-65 and some had the experience of repeating the same course due to having failed it. The terms "less successful learners" and "low achievers" in this thesis are used synonymously with "less successful language learners".
- **FL anxiety:** Foreign language anxiety is recognised as different from other forms of anxiety, and is a situation specific and unique type of anxiety closely related to the acquisition of foreign language (Horwitz *et al.*, 1986, 2001; MacIntyre & Gardner, 1989, 1991b). It is also defined as the feeling of tension and apprehension specially associated with second language contexts, including speaking, listening and learning (MacIntyre & Gardner, 1994). More importantly, rather than a simple combination of transferred fears, foreign language anxiety is a particularly complex mix of self-perceptions, beliefs, feelings, and behaviours related to language learning arising from the language learning process (Horwitz, 1986). (Refer to C.2: 2.4.2.1 for further detail)

- **Self-directed learning:** Self-directed learning is the processes of self-managing learning and awareness-raising, particularly when making various important decisions, such as strategy use, goal-setting and evaluation. Meanwhile, the definition of self-directed learning denotes the abilities and responsibilities learners may develop through the learning process. (Refer to C.2: 2.3.1 for further detail)
- **Multimedia language learning environments:** With much emphasis on both learning content and learning process, the present study would like to define the term, '*multimedia environments*' that encompass (the learning content of) multimedia materials, multimedia programs, multimedia software and the interaction involved within the learning process. (Refer to C.2: 2.5.2.1 for further detail)
- **Intrinsic/ extrinsic motivation:** According to Deci and Ryan (1985), intrinsic motivation refers to motivation derived from "within the individual" as learners are motivated to learn, perform, or succeed for the internal feeling of satisfaction of curiosity or enjoyment of doing an activity. Extrinsic motivation, on the other hand, is directed toward gaining external rewards (e.g. grades, jobs, money, etc.) or avoiding punishment or other negative consequences. (Refer to C.2: 2.4.2.1 for further detail)
- **The Zone of Proximal Development (ZPD):** According to the sociocultural theories of Vygotsky (1978), the ZPD is considered a 'level' or 'domain of abilities or skills' the learner lacks, before reaching a state of being capable and self-regulated (Harvard, 1997; Mitchell & Mill, 2004; Vygotsky, 1978). Meanwhile, social factors (e.g. help from others or different forms of assistance

such as observation, modelling and feedback) are considered crucial in helping learners to achieve a level at which they are ready for the ZPD. (Refer to C.2: 2.2.2 for further detail)

### **1.3 Research questions**

The main purpose of this study is to examine the learning processes of less successful language learners in self-directed multimedia language learning environments, as the application of multimedia CD-ROMs for self-study purposes is increasing in popularity in the field of computer-assisted language learning but remains under-researched. More specifically, this study views self-directed multimedia language learning as a social practice, rather than an instructional tool, and attempts to understand how participants are involved in human-computer and human-human interaction, how they construct their learning processes, and reconstruct their individual traits. Thus, this study would like to address four questions:

- (1) How do less successful language learners initially perceive self-directed multimedia language learning environments and non-multimedia factors, and how does the perception affect learners' individual traits?
- (2) What are the problems and challenges less successful language learners may encounter in multimedia environments and how do they affect learners' individual traits?
- (3) How do less successful language learners cope with the problems and challenges they encounter in self-directed multimedia language learning environments, and what is the effect on learners' individual traits?

- (4) How do less successful language learners perceive the impact of the multimedia language learning experience on the English and the non-English learning context, in terms of motivation, self-confidence and strategy use?

#### **1.4 Significance of this study**

The significance of this study can be viewed in terms of the theoretical contribution to the field of CALL and self-directed language learning as well as the practical contribution to language educators, practitioners and learners. One possible theoretical contribution is the utilisation of the perspective of self-directed multimedia learning as a social practice. Such a perspective provides a sociocultural stance to consider the social nature of learning processes in self-directed multimedia environments and to investigate the complex and dynamic interaction that learners may be involved in. It also allows this study to raise questions that may not have been addressed by current research which has generally examined CALL or multimedia as an instructional tool. The important concepts of Vygotsky's sociocultural theories (e.g. mediation, the ZPD, scaffolding, self-regulation) will be applied to scrutinise the findings. Issues such as how learning is mediated through interaction between the participants and the computers, how scaffolding from multimedia features or non-multimedia factors facilitate or inhibit learning before reaching the ZPD, how participants' changing perceptions toward the same factors at different stages affect their learning processes, and how the learners perceive the impact of such learning experiences on their learning in broader contexts, can all be explored within this sociocultural perspective. To summarise, taking such a theoretical perspective allows this study to capture the complete picture of the richness and complexity of the data

and increase in-depth understanding of learning processes in self-directed multimedia environments. In this sense, this study has made a contribution to research into the field of CALL and self-directed language learning.

Another significance of this study is employing a longitudinal qualitative approach to investigate the learners' learning process and the changes of impact of various factors (e.g. multimedia features, non-multimedia factors, etc.) on learning as well as learners' individual traits (e.g. motivation, self-confidence, strategy use, etc.) at different stages over time. This approach echoes the needs for more qualitative research into CALL processes, as language learning is regarded as a complex and cultural phenomenon (Warschauer, 2000); and using qualitative investigation to research CALL is considered beneficial when examining in-depth how the technology works, and how it affects the language learning process, learning motivation and changes of strategies or attitudes (Burston, 2003; Warschauer, 2000). In addition, what this study contributes is an extended time intensively devoted to the three aspects: data collection with multiple methods (e.g. interviews, focus groups, learning diaries, observation, debriefs, etc.), on-going reflection on the research questions, and triangulation in data collection and analyses of a focus few studies have examined. Furthermore, while other qualitative studies tend to explore learners' interaction (e.g. use of multimedia functions) within CALL programs from researchers' perspectives (Hegelheimer & Tower, 2004), to examine difference of attitudes, motivation and strategy use between successful or unsuccessful language learners (Gan *et al.*, 2004), or to investigate learners' satisfaction when self-studying online CALL resources (Murday *et al.*, 2008), there seems to be lack of emphasis on research learning

processes, interaction, factors, how they change over time and the impact on learners' individual traits (e.g. motivation, self-confidence and strategy use). What makes this study unique is that by documenting the changes in learning processes, interactions, and factors affecting individual traits (e.g. motivation, self-confidence, strategy use, attitudes, identity, etc.) at different stages, an in-depth and holistic understanding of the complex and dynamic learning processes within self-directed multimedia environments can be obtained, and in turn an essential contribution is made to the field of CALL and self-directed language learning.

Furthermore, studying the field of individual use of self-directed multimedia language environments requires more attention. Research has asserted the potential of multimedia features (Pusack & Otto, 1997) and interaction with human and non-human resources (Benson, 1996) in promoting learners' motivation and autonomy. Multimedia materials have been regarded as powerful and effective learning tools for different learning needs of students, and most self-access centres in schools or libraries provide access to multimedia software and facilities to learners. However, in what way multimedia material affect/help learning is still under-researched. Despite the widespread use of multimedia materials in schools or on the market, there is relatively little research related to multimedia CD-ROMs for self-study purposes. Thus, this study would like to examine the self-directing multimedia learning processes of a group of less successful learners, factors which might facilitate or inhibit the learning processes and how learners perceive the impact of the learning experience.

Finally, studying the use of multimedia environments for self-study purposes, particularly for less successful learners has a practical significance to language researchers, educators and learners. This study would like to address the following issues. First, less successful learners may bring with them many learning beliefs, assumptions or concerns to their learning in self-directed multimedia learning environments. Investigating how these affect their learning can increase our understanding of how they respond initially to the multimedia environments. Second, when less successful learners are expected to self-directed their learning within multimedia environments, do they have the knowledge, abilities or autonomy to control their learning processes? If so, exploring problems that arise and how the participants confront and deal with them has implications for teachers and learners in both multimedia and non-multimedia environments. Third, this study also addresses the issue of the non-multimedia factors (e.g. peers, the instructor, reflective activities, etc.) affecting self-directed multimedia learning processes and reconstruction of individual learner traits. This study will provide recommendations regarding how these factors change over time and how they might facilitate or inhibit self-directed learning. Researchers and practitioners who intend to employ multimedia resources for individual use should find it beneficial when considering how to appropriately adopt these non-multimedia factors in self-directed multimedia learning.

## **1.5 Outline of the thesis**

Chapter 2 reviews the current literature. The first part is devoted to the discussion of social constructivism, Vygotsky's sociocultural theories and especially how the important concepts, such as mediation, the ZPD, scaffolding and self-regulation, have

been applied to language learning. Parts 2, 3, and 4 of Chapter 2 introduce other essential notions, background, definitions, and issues relating to self-directed learning, language achievement and individual traits, and CALL and multimedia. Part 5 discusses relevant studies and Part 6 provides a rationale that guided me in developing the research framework for this study. Finally it will lead to four proposed research questions.

Chapter 3 focuses on the methodology of this study. The first describes qualitative approaches this study employs and relevant issues that are worthy of note. The researcher role is then carefully defined. A discussion of research design, data collection methods and procedures, and data analysis follows. Here, the analytic procedure of data analysis describes details of five steps in dealing with the massive amount of qualitative data. Finally, Chapter 3 concludes with a discussion of the trustworthiness of the research and a summary.

Chapter 4 introduces the participants' background, learning approaches, and motivation, self-confidence and goals toward learning the target language. This chapter intends to draw a baseline and to provide readers with crucial information about various characteristics of the less successful learners before they started this project. To capture the richness of the data in-depth, this chapter focuses on exploring such data from five participants (i.e. S1 to S5) to who provided a thick description. Therefore, five case studies are presented individually and followed by a summary and discussion.

Chapter 5 presents findings on the participants' initial perceptions. This chapter starts with a description of three general themes that were identified and different interpretations regarding the learners' initial attitudes toward and impressions of the multimedia environments, as well as the impact on their motivation and self-confidence. This chapter then proceeds to explain the students' perceptions regarding the non-multimedia factors in respect of their peers, the instructors and reflective activities. The chapter ends with a summary and discussion.

Chapter 6 presents findings on the emerging problems and challenges in self-directed multimedia learning environments. This chapter identifies three major themes and deals with each area in turn. In each theme, several sub-themes and variations, as well as relevant factors and their impact are discussed. Finally, a summary and discussion is given at the end.

Chapter 7 presents findings on how the participants coped with the problems and challenges examined in Chapter 6. Following a similar structure to Chapter 6, this chapter presents data on three themes in turn. The complex relationship between the coping processes and possible factors involved in each theme and sub-theme is elaborated thoroughly. Different issues regarding the impact and changes of factors on the construction of learning processes and reconstruction of individual traits are highlighted and discussed. Lastly, this chapter summarises the findings and discusses the processes of coping problems and challenges.

Chapter 8 presents findings on how the participants perceived the impact of the multimedia learning experience on English and non-English specific learning contexts. Data collected from various sources at different stages are presented in triangulated patterns. This chapter subsequently explores the impact on the learners' general attitudes toward learning English, on learning in conventional English classes, on learning specialised subjects and university study in general, and on willingness to learn English or use English in social contexts, and make plans for future careers.

Finally, Chapter 9 provides a discussion of the findings and implications of this study. It starts with a summary of the findings in relation to the four main research questions and a discussion. Through revisiting theories and issues relevant to self-directed multimedia language learning in Chapter 2, Literature Review, this part is intended to analyse and interpret the findings. In particular, it elucidates how Vygotsky's sociocultural theories, and especially the ZPD, are manifested during the longitudinal qualitative study, when self-directed multimedia learning is viewed as social practice. After, this, practical implications for researchers, practitioners, and students are discussed and the chapter ends with comments and directions for future research and a reflection on the study.

## **Chapter 2**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This study particularly focuses on self-directed multimedia language learning for self-study purposes, where a learner is typically in control over the language learning software, materials, pace of learning and assessment outside of a classroom context for self-study purposes. Thus, the condition of self-directed learning as a part of the requirement of formal language educational curricula (e.g. courses rewarding students with grades or credits) is beyond the scope of this study. Having specified the general direction this study explores, Chapter 2 will review the literature in order to construct a research framework and in order to identify gaps in the research.

There are six main sections. In section 2.2, Vygotsky's sociocultural theories, the essential concepts of social-constructivism, will be discussed. Section 2.3 will provide a survey of the literature on self-directed language learning. In section 2.4 individual factors contributing to language success will be examined, and in 2.5, the literature on CALL and multimedia environments will be explored. Finally, section 2.6 will provide a discussion of relevant studies and gaps identified in that literature. A rationale of the study will be illustrated in 2.7, which will lead to the research questions investigated in the present study in section 2.8.

#### **2.2 Sociocultural theories**

In the past decade, there has been a call for a theoretical pluralism for second foreign language acquisition (Breen, 2001; Mitchell & Myles, 2004) and growing attention has been given to the social aspects of language learning. A developing research

body supports the use of social constructivism as a theory of knowledge to investigate language learning and to engage language teachers in promoting students' meaningful learning and intrinsic motivation. Social constructivism is defined as "a particular view of knowledge, a view of how we come to know" (Oldfather *et al.*, 1999:8). In particular, social constructivism affects the research field of computer-assisted language learning (CALL) or self-directed learning as, taking a social constructivist stance, it allows language teachers and researchers to view language learning as a co-construction 'through interactions with others, which takes place within a social-cultural context' (*ibid*), and raises questions conventional SLA approaches may not identify. Thus, rather than considering language learning merely as a cognitive process to acquire linguistic rules or knowledge, such a perspective brings a social turn by emphasising the social nature of learning and investigating the complexity and dynamic social interaction involved in language learning processes.

Among the theories related to social constructivism, Vygotsky's sociocultural theories have become employed extensively in the field of second language learning (e.g. see Donato, 1994; Ohta, 2000; Swain, 2000) and CALL research (e.g. see Gutiérrez, 2003; Haas, 1996; Warschauer & Kern, 2000). As the purpose of theories is to provide a position from which to view a problem and to help analyse, interpret and build up the framework (Levy & Stockwell, 2006), adopting sociocultural theories offers researchers theoretical perspectives with which to examine language learning as social practice, consider students as active participants in constructing learning processes, and investigate the interaction between different factors involved. To achieve this, it is essential to explore the central concepts of sociocultural theories that are widely

referred to in the field of second language research and CALL, including mediation, the zone of proximal development (ZPD), scaffolding and self-regulation.

### 2.2.1 Mediation

Mediation is a central concept of sociocultural theory (Lantolf, 2000). For Vygotsky, mediation represents the use of tools, which refers to things which are adopted to solve a problem or reach a goal. Among these tools, language is the most significant one. *Mediate* is defined as, 'to act as a peacemaker between opposing sides' (Longman Dictionary of Contemporary English, 2007 ed.). Through mediation, different tools can mediate the child's learning and improve the child's abilities. Vygotsky emphasises that the human mind is mediated and 'human consciousness is fundamentally a mediated mental activity' (Lantolf & Appel, 1994:7).

According to Lantolf's interpretation, it is noted that language is regarded as one of the symbolic (or psychological) tools of mediation in mental activities (2000). As Vygotsky's principles state, individuals use psychological tools (Vygotsky, 1981) for directing and controlling their physical and mental behaviour. These psychological tools, especially language, are artifacts and serve as *mediators* for an individual's mental activity. For instance, to solve problems, people might search for various ways to develop plans and remember certain information (e.g. a phone number) by repeating it. However, during such a problem-solving process, instead of viewing human activities as a passive reaction within a behaviouristic framework, the psychological process should be regarded as part of active participation. The symbolic tools that allow individuals to collaborate with others shape their world according to their goals (Lantolf & Appel, 1994). In addition to language, Haas (1996)

extended Vygotsky's idea, tools of mediation, by proposing the use of technologies as one of the psychological tools and sign systems to mediate interaction between humans and the environment. In particular, Haas' arguments provide CALL researchers with valuable theoretical perspectives, as she asserted, 'Vygotsky's theory of mediation helps us see tools, signs, and technologies as ... systems that function to augment human psychological processing' (Haas, 1996:17, cited in Levy & Stockwell, 2006:116).

William and Burden indicated that *mediators* can also be people who play an important role in enhancing a child's learning 'by selecting and shaping the learning experiences presented to them' (2009:40). Interaction with people, usually parents, teachers or peers, with different levels of skills or knowledge often leads to effective learning, which then encourages learners to move on to the next stage of learning or understanding. Apparently, mediation involves broad views with social interaction. Mediators should be viewed as more than merely knowledge providers. As learners' needs, willingness and affective status (e.g. confidence or anxiety) should be considered during the mediation experience, mediators should aim to empower learners with the necessary abilities and knowledge, and help them become self-directed learners. More importantly, instead of unidirectional and passive input of knowledge or skills, the negotiation and interaction between learners, learning materials and tasks, context and mediators make students active learners in co-constructing knowledge. Thus, for second language learning or CALL, the above suggests that the role of mediators, such as peers and instructors should be taken into consideration when designing curricula or learning tasks in a learning context.

In brief, through the mediation concepts interpreted by Vygotsky, the importance of mediated experience for learning is revealed. Learning is considered as a socially mediated process as it is not only mediated through the developing use and control of psychological tools (e.g. language, resources, technologies) but also relies on interaction and shared processes (e.g. discussion) (Mitchell & Myles, 2004). It is noteworthy that socially mediated processes involve individual and social aspects, which can be applied to second language learning and CALL, by considering students as active learners who learn to control the use of various tools, such as language, and then to engage themselves in processes of interacting and co-constructing experiences with others.

### **2.2.2 Zone of Proximal Development (ZPD)**

Developed from the same line of mediation, the concept of the Zone of Proximal Development (ZPD) has been enthusiastically and widely researched for its crucial implications in helping learners to learn. Vygotsky (1978:86) defined the term, Zone of Proximal Development (ZPD), as follows,

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

(Vygotsky, 1978: 86)

In addition, Mitchell and Myles interpret the concept of the ZPD as ‘the domain of knowledge or skills where the learner is not yet capable of independent functioning, but can achieve the desired outcome given relevant scaffolded help’ (2004:196). Similarly, Harvard (1997:40) regards Vygotsky’s concept of the ZPD as ‘the distance between the child’s independent capacity and the capacity to perform with assistance’. Therefore, from the above definition, it is noted that essentially, social factors (e.g.

help from others or different forms of assistance such as observation, modelling and feedback) are involved in the ZPD which is considered a 'distance' or 'domain of abilities or skills' the learner lacks, before reaching a state of being capable and self-regulated.

### **Learning, development and the ZPD**

The relationship between learning, development and the ZPD can help us understand what occurs within the ZPD. To reach such understanding, Vygotsky investigated cognitive development in school learning contexts and uncovered a relationship between learning and development processes, which is highly complex and dynamic. For Vygotsky, *learning* and *development* processes operate independently but are mutually influential (1978). Referring to the concept of the ZPD, Vygotsky found that learning through participation precedes and shapes development. Through internalisation, learning appears to lead to development. Thus, the processes of learning and development are closely associated but occur in a different sequence.

It is noteworthy that, as Vygotsky emphasises, the interaction between people and their environments, and peers, helps activate students' learning in the ZPD, internalises the learning process and then eventually constructs *development*. Therefore, as in mediation, social factors are crucial, as these stimulate learning in the ZPD. Similarly, Mitchell and Myles (2004) stress the concept of a *sequence* of learning with a convergent socio-cultural view, where *social* comes before *individual*, when learning occurs. They pinpoint that, 'all learning is seen as first social, then individual, first inter-mental, then intra-mental. Thus, learners are seen as active

constructors of their own learning environment, which they shape through their choice of goals and operations' (*ibid*: 221).

Furthermore, within the ZPD, peer interaction and co-construction with more capable peers inform us with sociocultural concepts, which should also be taken into consideration when investigating language learning. However, it is noteworthy that the source of help learners need during the learning process is not restricted to adults or capable others. Peers with lower or equal abilities can also provide assistance within the ZPD. van Lier (1996:193) argues that, in certain circumstances, conversational interaction among language learners of similar or lower proficiency might be more beneficial than interaction with more capable peers or with native speakers, as it might 'encourage the creation of different kinds of contingencies and discourse management strategies'.

### 2.2.3 Scaffolding

The metaphor of *scaffolding* is a central concept of Vygotsky's (1978) theory. *Scaffolding* denotes the adult's structuring of an interaction by building on what s/he knows a child can already do. In addition, Bruner (1983) investigated social interaction between mothers and young children and defined the notion of *scaffolding* as follows,

a process of 'setting up' the situation to make the child's entry easy and successful and then gradually pulling back and handing the role to the child as he becomes skilled enough to manage it.

(Burner, 1983: 60)

Such a concept puts much emphasis upon the supportive conditions a knowledgeable participant can create in social interaction and the skills and knowledge a novice can

extend to higher levels of competence (Wood *et al*, 1976). Furthermore, the notion of *scaffolding* also profiles the dynamism of working within the ZPD. In other words, the scaffolding which learners obtain within the ZPD helps to construct the zone during the learning process and reach the state of self-regulation, which I will discuss further in 2.2.4. To understand the implication of *scaffolded help*, Wood *et al*. (1976) offer specific suggestions regarding how *scaffolding* can be applied to assist learners in various learning context as follows,

1. *recruiting* interest in the task
2. *simplifying* the task
3. *maintaining* pursuit of the goal
4. *marking* critical features and discrepancies between what has been produced, and the ideal solution
5. *controlling* frustration during problem solving
6. *demonstrating* an idealized version of the act to be performed.

(see also Lantolf & Appel, 1994:41)

In addition, Donato (1994) investigates how non-native speakers develop language learning experiences in the classroom setting and how second language development occurs in the social context. His findings suggest that ‘collective scaffolding may result in linguistic development in the individual learner’, ‘scaffolding occurs routinely as students work together on language learning tasks’, and therefore ‘it appears useful to consider the learners themselves as a source of knowledge in a social context’ (*ibid*:51-52). Donato’s findings support the importance of group work in giving students the opportunity of scaffolding when exchanging linguistic artefacts. By recasting the role of learners during social interaction, the discussion among language learners provides *scaffolded help* as in expert-novice relationships. The important message in Donato’s assertion is that learners can mutually assist and scaffold each other’s performance in the same way as experts scaffold it with novices. Thus, peer interaction should be taken into consideration in providing language

learners with various learning tasks or environments, as such *scaffolded help* from peers as sources of interaction may improve performance.

In the same way, for second language learning Swain (2000) supports the importance of a *collaborative dialogue*, a knowledge-building dialogue, as language use mediates language learning. Swain regards language as a mediating tool and explains how language helps knowledge-building, as shown in Vygotsky's sociocultural theory of mind (1978, 1987). The fact is that language is one of the most important semiotic tools, which can powerfully mediate our physical and mental activities. The external activities a learner participates in can be transformed and internalised as individual knowledge. Swain (2000) then suggested dialogue as a *mediator* of second/foreign language learning as verbalization appears to *mediate* the internalisation of external activity and help learners become more aware of their learning process (e.g. problems, needs, goals, assessment, etc.).

#### 2.2.4 Self-regulation

*Self-regulation* involves learners in a process of 'increasing capacity to formulate plans of action, master and control their own behaviour, verbalising their plans and goals, generalizing skills to new situations and, learning how to communicate and think' (Harvard, 1997). The concept of self-regulation denotes one of the changes occurring in the ZPD and the different developmental processes that can be explained by Vygotsky's concept of "*two planes*" (Vygotsky, 1981:163). The first process is the 'social or inter-mental plane'. With the appropriate help of instruments and signs, learners familiarise themselves with skills, ideas and language. The second process is the 'personal, psychological or intra-mental plane', where learners internalise,

understand, and begin to use new language, skills and ideas independently. Consequently, in the ZPD, the transition from other-regulation activity/inter-mental to the self-regulation activity/ intra-mental planes represents learners' increasing control over learning behaviours and the environment (Lantolf & Appel, 1994).

Based on Vygotsky's theory of learning, Tharp and Gallimore (1988, Cited in Harvard, 1997:47-48) expanded the idea of '*two planes*' and proposed a *four-stage model* of transition from other- to self-regulation, which further elucidates the relationship between the ZPD and *self-regulation*. More importantly, they assert *teaching* as well as *learning* has to be redefined and teachers as *mediators* should provide 'just enough support' to assist learners to make the most of their own ZPD (*ibid*).

According to Tharp and Gallimore (1998), in stage **one**, a more capable *other* appears to regulate a learner's behaviour and offers directions or modelling. The learner initially has limited understanding of purposes or situations and gradually becomes aware of how each part of the task is arranged and of the connections between them. Therefore, it is crucial to enhance the learning process with conversation and questioning, feedback and explanation throughout the whole task so that eventually the learner becomes responsible for their own learning. In stage **two**, with increased self-control and regulation, a learner starts to self-direct what s/he does. Through self talk, s/he is able to give guidance regarding what s/he should do to reach the ZPD (of the particular knowledge or skills). For example, some learners give verbal instructions (e.g. murmuring or talk to themselves) step by step while doing particular learning tasks. In stage **three**, the performance is 'internalised' and 'automatic',

which does not require assistance from others. However, sometimes, assistance can be disruptive at this stage. The above three stages cover the usual processes involved when learning new skills or capacities. In stage **four**, the earlier form of assistance might be needed when learners intend to maintain or improve performance. Vygotsky called such a process 'de-automatisation and recursiveness', through the ZPD (Tharp & Gallimore, 1988, cited in Harvard, 1997: 48). In brief, the concepts of *two planes* and *four-stage model* illustrate the process, sequences and changes learners may encounter to reach the ZPD. They also offer mental pictures of how learners may move from other-regulation to self-regulation through the use of tools (e.g. language or technology) for interaction with others.

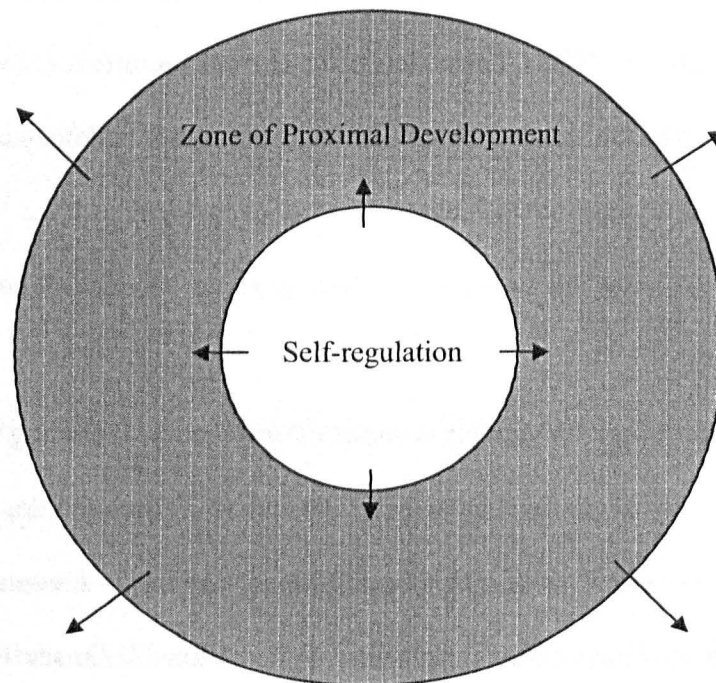
### 2.2.5 Summary

The important concepts of Vygotsky's sociocultural theory, including mediation, ZPD, scaffolding and self-regulation, have been discussed. To conclude, I would like to refer to van Lier's (1996) work in his book, *Interaction in the Language Curriculum*, which clearly depicts Vygotsky's concepts of mediation, ZPD, scaffolding and self-regulation. In the following figure 2.1, van Lier (1996:190) illustrates the concepts of the ZPD and self-regulation, and the relationship between them. The space between the two circles shows a range of knowledge and skills that the person can only access through others' help. For instance, to perform a complicated task, one might need others' assistance/scaffolding through modelling, imitation or guidance to link existing knowledge with experience. Subjects or knowledge outside of the range of the ZPD circle are not available for learning. Additionally, the learner's zone of self-regulation can be expanded when they are provided with appropriate and balanced

resources for construction within the ZPD. As van Lier (1996:193) suggests these resources include,

- a) assistance from more capable peers or adults
- b) interaction with equal peers
- c) interaction with less capable peers (e.g. peer teaching)
- d) inner resources (e.g. knowledge, experience, memory, strength)

**Figure 2.1 Zone of proximal development (van Lier, 1996:190)**



In addition, *scaffolding* which learners obtained from their teachers, peers and interaction with learning materials, curricula and other inner resources helps them to construct the ZPD and eventually reach the circle of self-regulation, where learners can transfer from the *plane* of social/other-regulated/inter-mental to the *plane* of self-regulated/intra-mental. The process of learning occurring in the ZPD signifies the *mediation* that learners may experience. Mediating the mental processes with symbolic cultural artefacts, especially language, is crucial. The purpose of the directing process is not only to have the learner finish the task but to guide him/her on

how to take over responsibility and accomplish it independently with the strategic functions they have developed (*ibid*).

To summarise, Vygotsky's sociocultural theories clearly provide social-constructivist perspectives by which to view second language learning or CALL as a social practice, which also echoes the call for a need to investigate second language learning from a social stance. More importantly, instead of considering learning as merely a cognitive process of gaining linguistic knowledge, the central concepts of sociocultural theories (e.g. mediation, ZPD, scaffolding and self-regulation) offer a comprehensive framework to analyse, interpret, and examine the interaction language learners may be involved in while constructing the language learning processes from multiple angles. Consequently, the present study would like to adopt a sociocultural approach to investigate self-directed multimedia language learning for its potential in helping language educators and researchers raise questions from a holistic viewpoint and gain contextual understanding of the learning processes of second/foreign language learning in multimedia environments.

## **2.3 Self-directed language learning**

### **2.3.1 Definition, features and benefits**

Different definitions have been given to the term, *self-directed learning*. Brookfield (1985) indicates a twofold-meaning of self-directed learning, 'to mean both the process/ the techniques used in directing one's own learning, and the change of consciousness that is the result of such learning' (cited in Pemberton & Pierson, 1996:3). This definition denotes skills and strategy use, and changes of learners' awareness through controlling the learning process. Similarly, Candy identifies four features of self-directed learning, which involve personal autonomy, self-management,

learner-control and autodidaxy (1991:23). In addition, highlighting the actions taken, Knowles (1975) refers to self-directed learning as a process of conducting a series of tasks (e.g. monitoring needs analysis, setting goals, deciding materials and strategy use, and self-assessing results). In brief, the various definitions above illustrate a certain commonality. Self-directed learning involves the processes of self-managing learning and awareness-raising, particularly in making various important decisions such as strategy use, goal-setting and evaluation. Meanwhile, the definition of self-directed learning denotes abilities and responsibilities learners may develop through the learning process. Thus, the development of learner autonomy cannot be overlooked as part of the self-directed learning process, which I will discuss later.

### **Learner autonomy and self-directed language learning**

It would appear that the boundary of definition between autonomy and self-directed learning is not clear. *Autonomy* is defined as 'the ability to take charge of one's own learning' (Holec, 1981:3) or 'a situation in which the learner is totally responsible for all the decisions concerned with his/ her learning and the implementation of those decisions' (Dickinson, 1987:11). It is not the actual behaviour in the situation but the attitude, ability or 'potential capacity to act in a given situation' (Holec, 1981:3). In addition, autonomy is not a steady state, 'as many have pointed out, an autonomous learner may well choose teacher-direction at certain stages in his or her learning and is likely to be autonomous in one situation, but not in another' (Pemberton, 1996:3-4).

Holec's (1985) assertion illustrates the relationship between the two notions, autonomy and self-directed learning. In his work, Holec suggests "an insistence that autonomy can only be developed through the practice of self-directed learning"

(1985:180). More specifically, although self-directed learning may imply an autonomous learner who is in charge of his/ her learning, learners may develop various degrees of autonomy depending on different degrees of self-direction in learning (Holec, 1981). Thus, the relationship between self-directed learning and autonomy is clarified, as 'autonomy is a capacity and self-directed learning is a way in which learning is carried out' (Pemberton, 1996:3). Obviously, self-directed learning provides a learning mode that engages learners in developing autonomy to take responsibility for their own learning and to gain the ability to control the learning processes.

### **Benefits of self-directed language learning**

Self-directed learning benefits language learners in many respects. Firstly, self-directed learning caters for students' individual needs (Gardner & Miller, 1999; Sheerin, 1997). Learners who have special weaknesses or different objectives may wish to make more effort to improve particular language skills. Learners of different styles or preferences may choose different types of activities that meet their needs. Special needs, such as time or physical constraints that prevent learners from going to regular group classes, can be accommodated through self-directed language learning as learners may decide when or where to learn. In particular, for unsuccessful or low-achieving learners, self-directed language learning has the potential to provide additional practice that meets these individual needs, which they may not be able to obtain in the traditional learning mode.

Secondly, self-directed language learning provides a way to cultivate autonomy as students have to be in charge of their own learning, which enhances awareness of

their responsibilities for managing learning and encourages self-monitoring (Garrison, 1997). Some research indicates that self-directed learners appeared to be motivated, self-disciplined, self-confident and goal-oriented when encountering challenges (Taylor, 1995). Consequently, with proper planning and implementation, self-directed learning may help students to develop their own rules, employ various strategies to achieve goals and represent ideas in different forms. In studies of the characteristics of good language learners, in particular, it has been shown that ‘the most successful language learning strategies are connected with assuming responsibility for one’s own learning’ (Sheerin, 1989). This implies that taking on responsibility for one’s own learning is closely associated with successful language strategy use. Therefore, self-directed language learning has the potential to provide opportunities to cultivate autonomy and strategy use. This is beneficial for learners, especially less successful students, and helps them take on more responsibility for their own learning or enhance learning effectiveness (Ellis & Sinclair, 1989) for the following reasons,

- 1 learning can be more effective when students take control of their own learning because they learn what they are ready to learn,
- 2 those students who are responsible for their own learning can carry on learning outside the classroom,
- 3 students who know about learning can transfer learning strategies to other subjects.

(Esch, 1997:174)

### **2.3.2 Issues and challenges**

Several issues have been discussed while considering self-directed language learning. Firstly, ‘what decisions do learners need to make during self-directed language learning?’ Little (1989) mentions that the role of the learner in a self-access system is to ‘learn how to learn and to apply that skill to the learning of a language’. Little then

indicates that the tasks the individual will confront in a self-access system include the following,

- 1) Defining needs and objectives,
- 2) Selecting materials and work techniques,
- 3) Organizing and implementing the programme, (e.g. when, how often he/she studies)
- 4) Evaluating and monitoring progress. (e.g. establish criteria and techniques to evaluate progress)

(Little, 1989:63-64)

However, their degree of autonomy can affect the learners' responsibility and motivation for making the above decisions (*ibid*). Similarly, Sheerin (1997) describes a cluster of dispositions and abilities to undertake activities for independent learning, which include analysing needs, setting goals, planning a programme of work, choosing materials and activities, working unsupervised and evaluating progress. Sheerin emphasises that learners may be disposed to be independent but lack abilities to achieve that, such as setting goals (*ibid*). These concerns reveal issues regarding a learners' readiness to take charge of their responsibilities and abilities in making decisions with the skills they need.

### **Changes of power, control and roles**

Learners who are new to self-directed learning may encounter changes of power, control and changes of roles with which they are not familiar. Because learners are required to control the learning process, their power is increased and the teachers' power is reduced. In order to increase learners' independence and responsibility for self-directed learning, as Stevick (1976) suggests, traditional students' roles need to be changed from passive to active, from no responsibility for learning to assuming responsibility for learning, from seeking approval to doing without overt approval, from submissive to active involvement in decision-making. However, learners' readiness for self-directed language learning is a concern. Whether learners are

prepared and have the self-confidence or motivation to accept the new roles can affect how they learn. As Gardner and Miller put it, 'learners' willingness to accept responsibility for assessment is related to learners' confidence in the reliability of self-assessment' (1999:7).

Furthermore, Wenden (1998, 2001) asserts that *metacognitive knowledge* plays an important role in the self-regulation or self-direction of language learning. Learners who have adequate *metacognitive knowledge* might demonstrate sufficient *person knowledge, task knowledge and strategic knowledge* (Wenden, 2001). Wenden found that, during self-directed learning, 'metacognitive knowledge is a prerequisite to the implementation of two sets of regulatory processes in language learning, *task analysis* which guides pre-task engagement planning and *monitoring*, which oversees task completion' (*ibid*:60). I will discuss this in more detail in Section 2.4.2.3.

In addition, learners' beliefs about self-directed language learning may vary in the way that they affect learning attitudes, motivation and learning behaviours. Four factors might affect learners' attitudes, including teachers, educational institutions, peers and society (Gardner & Miller, 1999). Cultural differences have also been considered as crucial factors that may potentially influences learners' willingness in self-directed learning (Riley, 1988). When, for cultural reason, students perceive the teacher's role as that of an authority figure who makes most of the decisions (e.g. about materials, pace, assessment, goals) in the learning process, this is likely to affect their attitudes and learning behaviour.

Thus, an issue relating to changes in teachers' roles should be considered. To develop autonomy through self-directed language learning, a teacher may play different roles, including those of facilitator, counsellor and resource (Voller, 1997). Firstly, the teacher as a facilitator is regarded as a provider of psycho-social support and technical support (Holec, 1985:184-186). Psycho-social support includes providing encouragement by giving non-judgemental feedback, motivating learners to overcome problems, or raising awareness of being a learner. Technical support includes needs analysis, goal-setting, planning or selecting materials and identifying strategy use (Voller, 1997). To foster learners' autonomy through self-directed language learning, the roles of facilitator, counsellor and resource provider may lead to the final goals.

### **The success of self-directed language learning**

Another issue involved is the factors contributing to success of self-directed language learning. Giving students the opportunity to direct their own learning does not always lead to greater autonomy or language learning. Research suggests achieving success in self-directed language learning is not as easy as one expects. To achieve it, several elements are essential, including 'learner training and support mechanisms, appropriate use of technology, the design of access systems to support self-direction, teacher and learner involvement, and the integration of self-access with the curriculum' (Benson, 2001:134). In addition, Benson indicates that possessing some of the skills associated with autonomy is presupposed to contribute to success in resource-based language learning (*ibid*). Jones (1994) consistently points out the importance of prerequisite strategies and autonomy. Jones researched his experiences of self-directed learning of Hungarian and found that 'learner autonomy and strategy

development rarely occurs', as the materials appeared to provide little help in fostering learners' autonomy (*ibid*: 465).

To summarise, the above issues show that self-directed language learning demands an awareness from students and teachers of their changing roles, capacities of strategy use and decision making as well as a certain degree of learner autonomy in order to succeed. More importantly, it also raises three important questions: 'Can students who have limited or no prerequisite capacities or autonomy achieve success in self-directed language learning and what problems will they encounter?', 'When viewing self-directed language learning from a sociocultural perspective, how do learners develop autonomy and learning strategies through interaction with resources, software or systems?', and 'During the self-directed learning process, what kind of scaffolding, as Benson (2001) mentions above, do learners need from peers, the instructor or other facilitating settings to reach the ZPD?'. These questions all indicate the need for further research in this area.

## **2.4 Achievement and individual traits**

### **2.4.1 Achievement**

van Lier (1996) suggests that, like a coin, the definition of achievement is two-fold. One is concerned with the work students do, which is measured *via* various forms of assessment (e.g. tests), for the purposes of comparison between various groups of learners. This test-oriented definition of achievement is widely adopted in educational settings. The other, according to van Lier (1996:119), relates to three notions, '*self-perception*' (Bem, 1972), '*personal knowledge*' (Polanyi, 1958) and '*self-determination*' (Deci & Ryan, 1985). These two aspects of achievement can also

be regarded as 'outer perspective' and 'inner perspective' (Ryan, Connell & Grolnick, 1992:167). In other words, with the *outer* perspective, achievement can be assessed mainly by tests or exams that are conducted by others (e.g. teachers). The *inner* (personal) perspective of achievement, however, according to van Lier (1996), emphasises how individuals justify themselves in terms of self-knowledge, self-assessment and self-regulation. To assess inner/personal achievement, learners need to answer the question, 'How am I doing?' and gather information from different sources to answer the question (van Lier, 1996)

From a personal perspective, achievement appears to be self-determined. Learners' perception of achievement or success can be identified through the experience of doing learning tasks, learning performance, individual feelings regarding the process and outcome, and feedback from others and the learning environment (e.g. response from software, materials, etc.). Although an inner perspective of achievement seems to be subjective, nurturing such a personal sense of competence or success is crucial, as it demonstrates self-determination and self-regulation when learners are actively assessing their individual achievement or progress throughout the learning process. In addition, inner achievement is involved with social interaction as learners need to assess various dimensions of the learning process (e.g. self, the environments, etc.). Therefore, although inner achievement is not widely accepted as academic performance, learners should be supported to self-assess their achievement in the learning context, as 'fostering achievement in the personal sense is the true goal of education' (van Lier, 1996:119).

#### 2.4.2 Individual differences and language achievement

To provide suggestions for achieving success for unsuccessful language learners, some researchers attempt to investigate how *good*, *successful* or *effective* language learners actually learn, which typically implies those who perform well on tests or examinations (Abraham & Vann, 1987; Green & Oxford, 1995; Vann & Abraham, 1990; Wen & Johnson, 1997). Research suggests that in many respects there is a major difference between learners at different proficiency levels. Some research studies into success in foreign language learning have focused on what the learners achieved and how they achieved it (Stevick, 1989). Some research reveals language learning strategies that “good” language learners applied (Rubin, 1975; Stern, 1975) or strategies of unsuccessful language learners (Vann & Abraham, 1990) and some research explores the connection between strategy use and learning outcomes (Green & Oxford, 1995; Vann & Abraham, 1990; Wen & Johnson, 1997).

However, social psychologists suggest that the degrees of success learners achieve might be due to various individual differences among learners (Mitchell & Myles, 2004). Though previous research mainly identified strategy use as the major differences between successful and unsuccessful learners, other learner factors (e.g. anxiety/self-confidence, motivation or attitudes) play equally essential roles in affecting language learning success (Gan *et al.*, 2004; Larsen-Freeman, 2001; Mitchell & Myles, 2004).

To explore individual factors from different angles, in what follows, I would like to refer mainly to two accounts of analysis. The first one is elaboration of learners’ cognitive and affective factors by Gardner and MacIntyre (1992, 1993) and the

second one is the analysis of learners' individual traits by Larsen-Freeman (2001). Gardner and MacIntyre (1992, 1993) provide a basic explanation of how individual differences contribute to language achievement. These are divided into two categories: cognitive factors, (i.e. intelligence, language aptitude and language learning strategies) and affective factors, (i.e. language learning attitudes, motivation and language anxiety and willingness to communicate). Comparing the findings of Larsen-Freeman (2001) and Gardner and MacIntyre's (1992, 1993), Larsen-Freeman views individual factors that affect language achievement from a broader perspective. She reviews experimental research literature of the past decade and interprets the important individual traits of language learners as 'contribution(s)' that affects, 'not just how much they succeed, but what they do to meet with success' (2001:13). Learner contributions can be categorized into three domains: *learner attributes learner conceptualizations and learner actions* (Larsen-Freeman, 2001). Based on the above two accounts (Gardner & MacIntyre, 1992, 1993; Larsen-Freeman, 2001) and other researchers' findings, the next section discusses these three domains of individual traits that influence learners' language achievement.

#### **2.4.2.1 Learner attributes**

The first domain of individual differences that affects learning success, *learner attributes*, includes age, aptitude, personality, learning disabilities, and social identities (Larsen-Freeman, 2001). Among them, intelligence and language aptitude are considered to be the most obvious predictors of language learning success (Gardner & MacIntyre, 1992, 1993; Skehan, 1989). In addition, certain personality traits can facilitate or inhibit second language learning, such as self-esteem, extraversion, anxiety, risk-taking, and sensitivity to rejection, empathy, inhibition and

tolerance of ambiguity (Larsen-Freeman, 2001). In particular, *anxiety* as opposed to self-confidence refers to feelings of apprehension, which may cause a negative impact on a learners' language success.

### **Language anxiety**

Some researchers proposed *Language Anxiety* as a category of specific anxiety reaction, which is a situation specific and unique type of anxiety closely related to the acquisition of foreign language (Horwitz, *et al.*, 1986; Horwitz 2001; MacIntyre & Gardner, 1991b). More importantly, language anxiety is multifaceted, involving complex factors related to individuals and learning situations. As Horwitz proposed, rather than a simple combination of transferred fears, foreign language anxiety seems to be a 'distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process' (Horwitz, *et al.*, 1986:125).

The study of language anxiety may not be associated with general personal factors at all. Nonetheless, it is noteworthy that certain sources of language anxiety are found to be associated with personal and interpersonal issues. Young (1991) carefully examined the language anxiety literature and identified potential sources of language anxiety among learners. Among them, personal and interpersonal anxiety (e.g. self-esteem, competitiveness, group membership and communication apprehension), and learner beliefs about language learning (e.g. unrealistic belief about time, correctness, ways of learning, etc.) are probably the most commonly discussed sources of language anxiety in many studies. Particularly, learner beliefs are regarded as a major contributor to language anxiety (*ibid*).

In addition, language anxiety is found to be negatively correlated with achievement and performance. Evidence shows that language anxiety appears to cause difficulties for learners in learning various second language skills (Saito, *et al.*, 1998; Cheng, *et al.*, 1999). Based on Tobias's three-stage model, MacIntyre and Gardner explored the mechanism of anxiety in learning second/ foreign languages and discovered a negative effect on learners' language achievement (1991a, 1994). It was found that students who experience language anxiety might either perceive themselves as incompetent learners or self-justify themselves as "lacking ability" or low-achievers. Young (1991) pinpoints students with a perceived low ability level in learning a foreign language as those most likely to be anxious in the language classroom. Price (1991) also suggests that anxious learners tend to believe their language skills are weaker than their peers in class.

### **Social identity**

In addition, social identity affects learning performance and has been applied to the fields of second language learning and applied linguistics. Social identity is defined as 'that part of an individual's self-concept which derives from his knowledge of his membership of a social group (or groups) together with the emotional significance attached to that membership' (Taifel, 1974:69, cited in Hansen & Liu, 1997:567-8) and 'a sense of belonging to a particular social group, whether defined by ethnicity, by language, or any other means' (Mitchell & Myles, 2004:246). A more dynamic view is offered by Norton (2000:5), which refers to social identity as 'how a person understands his or her relationship to the world, how that relationship is constructed across time and space and how such a person understands possibilities for the future'. As shown, social identity is characterized by having non-static features and is

constantly affected by various factors. In particular, it is suggested that through using language, a person has opportunities to not only negotiate meaning of 'a sense of self within' in different social contexts at different times but also to gain/ be denied access to social networks (*ibid*).

Among qualitative studies conducted to examine the relationship between identity construction and second/foreign language learning, Lam (2000) reports a case study investigating a teenager, as a second language learner who was an underachiever in English literacy, and how the changes in English proficiency led to construction of identities. It is found that, through computer-mediated communication (e.g. chat-room), he eventually developed a new identity (e.g. changed from 'shy, unintelligent, serious, outdated, etc.' to, 'talkative, playful, clever, etc.') thereby improving his relationships with his peer groups. In addition, through analyzing self-reports, Lam (2000) identifies a *cyclical process* where improved ability in expressing oneself in the target language seems to enhance engagement with the learning community, which in turn leads to a positive attitude toward the target language (e.g. from 'escape' to 'use it to deal with problems'). Such findings indicate the complex and changing nature of social identity, which also echoes Norton's dynamic definition of social identity above, when she asserts that identity, language and context interact mutually (2000).

#### **2.4.2.2      Learners' conceptualization of learning**

The second domain of learner differences is related to learners' conceptualization of the process of second language learning, including motivation, attitude, cognitive style and beliefs (Larsen-Freeman, 2001). Motivation is a complex construct that

involves three elements: 'desire to achieve a goal, effort extended in this direction, and satisfaction with the task' (Gardner & MacIntyre, 1993:2). These are positively related to achievement and language attitudes (Masgoret & Gardner, 2003; van Lier, 1996). Second language motivation is multifaceted. With a changing focus over time, several frameworks and models have been proposed to explain motivational aspects of language learning. I will now explore two key models of motivation, Integrative and Instrumental motivation, in the following sections.

### **Integrative and instrumental motivation**

Traditional constructs of motivation for second language learning are *integrative* and *instrumental* motivation (Gardner, 1985; Gardner & Lambert, 1972). According to the early work of Gardner and Lambert (1972), motivation is divided into two general orientations, one is *instrumental* and refers to students learning goals related to practical reasons (e.g. such as higher salary, career advancement, entry to further education). The other is *integrative* and is related to a students' desire to learn and their positive attitudes toward learning a target language in order to be involved in a foreign culture and be valued as a part of the language community. Much of the research indicates that *integratively* motivated students are more successful language learners than those who are *instrumentally* motivated (Gardner, 1988, 2000). However, alternative findings suggest that, in some cases, 'highly ethnocentric individuals who do not favour the cultures of the target languages have achieved high levels of foreign language proficiency' (Leaver, 2003). Also, for students who have few opportunities to be involved with foreign culture communities, integrative orientation might seem less crucial.

## **Intrinsic and extrinsic motivation**

In addition, Deci and Ryan (1985, 1991) distinguish between *intrinsic* and *extrinsic* motivation. According to Deci and Ryan (1985), *intrinsic* motivation refers to motivation derived from “within the individual” as learners are motivated to learn, perform, or succeed for the internal feeling of satisfaction of curiosity or enjoyment of doing an activity. *Extrinsic* motivation, on the other hand, is directed toward gaining external rewards (e.g. grades, jobs, money, etc.) or avoiding punishment or other negative consequences. Deci and Ryan (1991) also elucidated that intrinsic motivation is considered a *non-derivative motivational force* that comes from within the person instead of from environmental stimuli or feedback. It is postulated that all learners possess an intrinsic motivation to learn, as learners of all ages are regarded as naturally curious about particular activities, to seek optimal challenges, and to enjoy the pleasure and fun of the learning process (Deci & Ryan, 1991; van Lier, 1996).

Such an assumption reflects the hypothesis Deci *et al.* (1991) proposed regarding basic psychological needs intrinsic motivation arises to respond to, which include *competence, relatedness, and autonomy (or self-determination)*. Feeling capable in terms of knowledge and skills, feeling close to and being connected with other individuals, and being able to be in control of one’s direction and behaviour denote goals which human beings aim to achieve. It also indicates how people might become more self-determined in performing tasks if they can have the opportunity to experience the above three, namely competence, relatedness and self-regulation (Deci & Ryan, 1985), as these are regarded as innate human needs which an individual will try to satisfy. Thus, intrinsic motivation represents the transformation of such needs

into goals, which should be 'at the core of all pedagogical action' (van Lier, 1996:108).

### **Motivation and achievement**

Some researchers suggest that learners who are intrinsically motivated tend to be more persistent when they encounter academic challenges (Vallerand & Bissonnette, 1992; Boyd, 2002), have a more positive academic self-concept (Cokley, Bernard, Cunningham, & Motoike, 2001), volunteer for tasks (Johnson, Beebe, Mortimer, & Snyder, 1998) and demonstrate higher academic performance (Goldberg & Cornell, 1998; Mitchell, 1992; Deci & Ryan, 1985; Vallerand *et al.*, 1993, cited in Walker *et al.*, 2006). Consequently, learning which is influenced by intrinsic motivation is more likely to lead to long-term retention of learning (Arnold & Brown, 1999). It is therefore considered crucial to foster intrinsic motivation. To enhance intrinsic motivation, students should be provided with learning experiences that meet their needs for competence, relatedness, enjoyment and autonomy.

Extrinsic motivation has been seen as something that can undermine intrinsic motivation. The short-term effectiveness of extrinsic rewards or punishments has an effect that cannot be discounted. However, over reliance on extrinsic rewards may lead to negative outcomes. Consistent findings have been reported from different research studies which indicate that students tend to lose their natural intrinsic interest in an activity if they have to do it to meet extrinsic requirements. Kohn (1990) discovered that adding extrinsic rewards can lead to a reduction of efficiency and pleasure in an intrinsically interesting task. In addition, 'external rewards (and social rewards, such as praise and group inclusion, are part of this) can be very seductive,

and can detract from learning activities' (van Lier, 1996:115). Therefore, educators need to assess students' achievement cautiously by applying alternative forms (e.g. portfolios) to supplement or replace grades (Oldfather *et al.*, 1999). Students should be encouraged to undertake activities that involve setting goals, assessing growth and progress, and gaining ownership of learning, which may help them to focus on intrinsic purposes rather than on merely extrinsic factors (Kohn, 1993).

However, there is an alternative view of the relationship between extrinsic and intrinsic motivation. In spite of the argument regarding the negative effect of extrinsic factors on intrinsic interest or continuing motivation, extrinsic motivation can work in concert with intrinsic motivation. As van Lier (1996) stressed, it is a rewards-versus-interest controversy; in other words, extrinsic motivation might not be entirely harmful depending on certain conditions. Whether external rewards (e.g. grades, money or praise) play the role of 'motivation-killer' depends on how students perceive the outcome/achievement (Deci & Ryan, 1985; Kohn, 1991 & 1993). Deci and Ryan (1985) argued that 'extrinsic rewards can be combined with, or can even lead to, intrinsic motivation, if regulations are sufficiently self-determined and internalised' (Cited in Dörnyei, 2001:28). Thus, when learning leads to internal rather than external control, and self-regulation rather than other regulation, intrinsic motivation and personal achievement can be enhanced. However, it is not clear from the literature how this goal can be achieved in practice.

### **Attitudes and beliefs**

Language learners' *attitudes* and *beliefs* are regarded as the centre of the language learning process as they affect how learners become involved, independent and confident in their own learning (Gan *et al.*, 2004; Ames, 1986). Meanwhile, the

attitudes and beliefs about self and the learning environment can influence how students approach, make an effort with, and persist in learning tasks on a continuing and self-directed basis (McCombs, 1990). An attitude consists of three elements: cognitive (e.g. what a person knows or believes about the objects of attitudes) affective (e.g. the degree of like or dislike of the class) and behavioural (Wenden, 1998). Positive attitudes are closely associated with better achievement. Researchers claim that students' attitudes toward language courses may potentially affect learning outcomes. Kuhlmeier *et al.* (1996) investigated the relationship between attitudes and language achievement of university students. Among the students who took first-year German courses, they found those with positive attitudes at the beginning and the end of the school year achieved higher scores than those who had negative attitudes (*ibid*). Their findings suggest that there is a significant relationship between attitudes and language success. Their study also reveals the importance of longitudinal research to obtain a full picture of the changes in learners' attitudes affecting language learning over time.

Another important individual trait is learners' *beliefs*, the subject of research for some decades and which have been found to have a significant influence on learning and comprehension (Jehng *et al.*, 1993). A growing body of evidence suggests that *beliefs* play a central role in the learning experience and achievement. In a study of the relationship between individual difference variables and proficiency ratings for a large group of adults involved in intensive language training, Ehrman and Oxford (2003) reported that 'believing that one can learn languages well was significantly correlated with proficiency in both speaking and reading'. More importantly, the use of learning

strategies can reflect learners' beliefs and self-confidence, which I will further discuss in the following section.

#### 2.4.2.3 Learners' actions- learning strategies

The other factor that affects language achievement is the action that learners take, namely learning strategies. Different strategies that different learners apply during the language learning process may contribute to the different levels of success they achieve. Learning strategies are defined as the methods, techniques or procedures learners adopt to facilitate learning and to make learning effective (Chamot, 2001; Oxford, 1990). Wenden regards learning strategies as 'mental steps or operations that learners use to learn a new language and to regulate their efforts to do so' (1991:18). The definition illustrates how the second language learning process can be facilitated through adopting various strategies.

Due to their goal-oriented nature, learning strategies are not always directly observable. To help identify learning strategies, researchers (O'Malley & Chamot, 1990:44-45; O'Malley *et al.*, 1985) classified learning strategies, depending on the level or type of processing involved, into three main categories - *metacognitive strategies* are 'higher order executive skills that may entail planning, monitoring, or evaluating the success of a learning activity'; *cognitive strategies* 'operate directly on incoming information, manipulating it in ways that enhance learning'; and *social/affective strategies* represent 'a broad group that involve either interaction with another person or ideational control over affect', as shown in Appendix D (O'Malley & Chamot 1990:46).

Researching into the field of learning strategies learners apply when learning a foreign language is crucial for understanding the second/foreign language acquisition process. For less successful language learners in particular, who experience difficulties or failure, studying the difference in strategy use between successful and unsuccessful learners may provide useful information which could be used to help them become better language learners (Chamot, 2001). Therefore, various studies have explored strategy use among learners of different proficiency levels, including successful and unsuccessful learners in terms of their academic performance as measured by tests and exams recognised by schools or teachers.

Green and Oxford (1995) discovered that strategy use varies significantly with different proficiency levels as it seems that the more successful students tend to apply more strategies. However, contradictory findings are reported, in that it has been found that successful language learners usually tend to be 'experienced strategy users' who know how to carefully select strategies to learn effectively (Huda, 1998, cited in Larsen-Freeman, 2001). Thus, it is not so much the number of strategies that are used, but how they are applied. Efficient learners might not make much use of strategies that are not necessary for a particular task. Apparently, rather than the number of strategies, the major difference in strategy use among successful and unsuccessful learners may be associated with other features, such as appropriate choice of strategies.

Ehrman *et al.* (2003:315) suggested three conditions for judging whether a strategy is useful: (a) the strategy relates well to the L2 task at hand, (b) the strategy fits the particular student's learning style preferences to one degree or another, and (c) the

student employs the strategy effectively and links it with other relevant strategies. Strategies used under these conditions benefit learners in their learning process as they 'make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations' (Oxford, 1990:8).

Similarly, Ehrman's suggestions echo Wenden's claims regarding the significant relationship between learners' *metacognitive knowledge* and learners' approach to learning, especially in choice and use of learning strategies, setting goals, evaluation of learning and readiness for autonomy (Wenden, 2001). According to Wenden (1998, 2001), *metacognitive knowledge* refers to learners' beliefs, or part of long-term memory regarding *what they know about learning*, which is usually developed consciously or subconsciously from an early age. Learners who have adequate metacognitive knowledge may demonstrate sufficient person knowledge, (e.g. knowing how good their abilities are in an area and affective factors involved), task knowledge (e.g. knowing skills required/ level of difficulties/learning plan/tasks demand for a particular task), and strategic knowledge, (e.g. knowing what strategies and when or how to use them effectively) (Wenden, 2001).

Furthermore, through the analysis of learner accounts, Wenden identifies the importance of *metacognitive knowledge* to self-directed/ self-regulated learning when she indicated that 'metacognitive knowledge is a prerequisite to the implementation of two sets of regulatory processes (i.e. *task analysis* and *monitoring*) in language learning, the task analysis which guides pre-task engagement planning and the monitoring which oversees task completion' (*ibid*: 60). Consequently, rather than simple frequency of strategy use, metacognitive knowledge is the major reason for

differences in strategy use between successful and unsuccessful learners, and an important factor affecting language achievement.

#### **2.4.2.4 Issues and challenges**

Several issues and challenges related to language learning strategies are noteworthy. One issue is the factors that contribute to the success of strategy use. In particular, learners' self-confidence and motivation appear to affect the use of strategies. Research has empirically demonstrated that 'the level of confidence learners possess in terms of their ability to succeed academically is related to their use of cognitive strategies, which can be transformed into higher academic performance and /or achievement' (Ames & Archer, 1998; Greene & Miller, 1996; Greene *et al.*, 2004; Miller *et al.*, 1993; Pintrich & DeGroot, 1990; Pintrich & Garcia, 1991; Pintrich & Schrauben, 1992; Zimmerman & Martinex-Pons, 1990, cited in Walker *et al.*, 2006). Students' motivation also influences their learning attitudes towards strategy use, and willingness to use strategies. It was found that students tend to use a range of learning strategies if they believe the course material is interesting and valuable. In addition, the settings of learning environments affect learning motivation and anxiety levels as, for example, 'students who are more anxious about tests are less likely to persist at their course work and use fewer cognitive and metacognitive strategies' (Young, 1991:518).

As self-confidence and motivation affect students' behaviour and attitudes towards strategy use, this may present a challenge to those who attempt to help less successful language learners who seem to lack intrinsic motivation to learn, or self-confidence and positive attitudes regarding their abilities to use strategies. According to Chamot

(2001:191), students who have not experienced much success in learning may not have developed confidence in their own ability to learn, as some students may think they are “not good at languages” or “lazy in learning languages”. As such, teaching less successful learners various learning strategies is regarded as an aspect of learner training that is likely to increase the effectiveness of language learning. As mentioned earlier, one of the main purposes of studying learning strategies is to provide unsuccessful learners with advice based on the experience of successful peers, and the methods they use. Thus, learning strategy instruction appears to be valuable for these learners (Chamot & O'Malley, 1994; Cohen *et al.*, 1998; Dörnyei, 1995; Oxford, 1993).

However, giving strategy instructions poses challenges. Less successful learners may not be motivated to try strategies, as they may not have faith in their ability to succeed, and how learners perceive learning processes can affect how they approach learning tasks. These learners need to experience success in using learning strategies, as it might encourage them to take a positive view of their abilities and increase motivation. Therefore, some researchers (Ellis, 1994; Gardner, 1985; McDonough, 1992; Skehan, 1989) regard second/ foreign language learning as *a cyclical process* in which ‘strong motivation, positive attitudes, and effective learning effort may result in increased language attainment and a feeling of progress, which may in turn enhance motivation and facilitate further effort’ (cited in Gan *et al.*, 2004: 231).

However, the other challenge which also draws our attention is whether learner training is adoptable in different contexts. From a sociocultural perspective, researchers (Donato & McCormick, 1994) argue that language learning strategy is

regarded as 'a by-product of mediation and socialization into a community of language learning practice' (Larsen-Freeman, 2001). Since language learning strategies are particularly situated in a given context and are under co-construction continuously, whether or not learners can apply the strategies they learn from one context to another needs to be explored.

In brief, the discussion above highlights the significance of learning strategies and its potential contribution to language success. The relationship among various factors (e.g. motivation, self-confidence, attitudes, beliefs, etc.) suggests a *cyclical process*, which also raises several issues and challenges. It was found that changing the learners' attitudes and raising their awareness of when and how to appropriately use strategies to meet the requirement of learning tasks should be taken into consideration. Meanwhile, the ongoing debate regarding whether or not learners can adopt the same strategies in other contexts needs to be investigated.

#### **2.4.3 Summary**

To sum up, learners' contributions to language learning have been highlighted above, including three domains, (1) personal attributes (2) learners' self-perception of the second language learning process (3) learners' actions- learning strategies. The individual differences among learners are regarded as important factors that contribute to the different levels of success that learners may achieve. The analysis suggests that certain individual factors that less successful language learners might bring to learning tasks might affect their learning process and outcomes.

In addition, researchers offer insightful advice to those who are interested in studying this field. Firstly, it is crucial that the three domains should be considered integral as they are related to each other (Larsen-Freeman, 2001). Instead of studying them in isolation, learners' contributions should be grounded in an account of the learning context. Secondly, although individual differences are emphasised above, it is essential to view language learners as social beings who participate in structured social networks and social practices. From a social constructivism point of view, rather than regarding individual traits (e.g. motivation, strategy use, self-confidence, anxiety, etc.) as static characteristics that can be changed relatively slowly, the 'individual traits or contributions' are non-static and constantly restructured throughout the language learning process (Mitch & Myles, 2004).

## **2.5 Computer-assisted language learning (CALL) and multimedia**

After the discussion of sociocultural theories, concepts of self-directed learning and individual differences contributing to language achievement, in this section, relevant literature on computer assisted language learning will be explored. In the sub-sections, the features and benefits of various CALL applications are discussed. Special attention will be given to multimedia learning environments that appear to have a strong potential to provide opportunities for promoting self-directed language learning. In addition, the issues and challenges posed when using multimedia for foreign language learning will be discussed.

### **2.5.1 CALL**

The field of computer-assisted language learning (CALL) has been developed over the last two decades at an increasing rate. Diverse ranges of new technologies have

been applied. Journals, books and conferences are devoted to researching the field in many parts of the world. Universities, schools and business sectors have organised training workshops or lessons to promote the use of computers for learning languages, which further confirms the value and potential of CALL. Many factors have contributed to such developments, which also reveal the changing trend of research related to the study of computer assisted language learning. Levy and Stockwell (2006:1-2) identified four factors, which involve 'the number and range of technological tools available with the potential for use in CALL applications, an increasingly sophisticated understanding of how languages are learned, environmental factors that lead to a variety of priorities, resources, and objectives for different learners in different settings, and particular challenges that arise as a result of the attributes or qualities of the target language'.

### **CALL applications**

CALL is broadly defined as the 'academic field that explores the role of information and communication technologies in language learning and teaching' (Davies, 2001:13). Some researchers use other terms with a more general definition, such as ICT (Information and communication technology), to illustrate the two primary uses of technologies: (1) providing a context for human-human and human-machine communication, (2) providing a context for information production, delivery and sharing (Murray, 2005). The present study adopts the term CALL, which covers both the use of technologies, and its specific application and features to enhance language learning and teaching, which are commonly used in the field of applied linguistics.

CALL applications are usually associated with programs and activities designed by teachers and practitioners in specific contexts, which vary in many ways. One example of a CALL application is *corpus linguistics*. Research into the use of concordancing programs in language classrooms is developing in the field of CALL. A concordancer refers to software that 'arrays the occurrences of a given lexical item or expression from a corpus of language data in context' (Levy & Stockwell, 2006:186). When using the programs, learners are expected to play the role of researchers of the target language, compare the usage of the item or expression, and build up the rules of grammar and language usage. Furthermore, CALL applications are widely utilised in computer-mediated communication (CMC) as a means of promoting language learning in recent years. Language learning through CMC allows learners to use the target language for practical reasons, such as greeting, explaining reasons, giving comments, etc. CMC can be asynchronous or synchronous. For instance, e-mail, bulletin boards and blogs are examples of asynchronous communication, as users can choose when to check messages that others leave and whether and when to respond. On the other hand, chat-rooms, audio- and video-conferencing are examples of real time (synchronous) communication as learners have to respond immediately (in "real-time").

Multiple media can be used at the same time to enrich the communication, such as video, texts, graphic or music. Recently for example, the *Facebook* website has become a popular means of computer-mediated communication, combining both asynchronous and synchronous forms, and attracting the attention of learners and researchers. Similarly, the *YouTube* website is another example of computer-mediated communication, as learners can be encouraged to present their recorded

video produced for the language courses to a potentially massive audience who can leave messages commenting on the video. The above examples demonstrate how CMC resources can be used for language learning by promoting communication with the global community.

Lastly, among CALL applications, multimedia CD-ROM/software is widely utilised as language learning material for self-study purposes. One of the potential strengths of multimedia materials is the possibility for learners to learn languages on their own at a convenient time, location and pace. In addition, multimedia environments engage learners in a process of self-directed learning, which can potentially foster learner independence and autonomy (Brett, 1998). In the following section, I will provide a detailed discussion about the definition of various terms related to multimedia, and features, advantages, disadvantages and issues related to multimedia for self-directed language learning.

## **2.5.2 Multimedia**

### **2.5.2.1 Definition**

According to Pusack and Otto (1997:2) *multimedia* refers to the 'capacity to access and control via computer a full range of familiar media, text, motion video, photo images, sound, and graphics'. Brett (1998:1) defines multimedia as 'the computer-delivered combination of a large range of communications elements – text, sound, graphics, pictures, photographs, animation and moving video'. However, some research considers the definition of multimedia should not be restricted to a collected presentation of multiple media. Rather, it also denotes a novelty of learning and teaching. Stressing the aspect of learner control, Noblitt (1990:10) defines

multimedia as 'a technique that combines images, sounds, and text with interactive control by the learners', which further indicates "interactive control" as one of the crucial features that benefit language learners. Adding a pedagogical sense to the definition, Topol (1998:36) asserted that, 'rather than just software design techniques, multimedia refers to a methodology of teaching, which is a set of teaching techniques consisting of parallel use of media to make teaching more effective'. Therefore, the definition of *multimedia* denotes the novelty of both learning content and learning processes.

As the technology has developed, the format of *multimedia materials* distributed on the market has evolved to take advantage of increasing storage capacity ranging from videodiscs and CD-ROMs to DVDs. As a result of the growth in use of the *World Wide Web*, the range of formats and choice of multimedia materials has expanded, leading to the widespread availability of resources that learners can access through the internet, such as images, music, text, video or animation, with online courses, websites, packages language programs or tasks, of the kind that were discussed in the section on CALL applications. Multimedia materials are regarded as not only the combination of various media but computer learning environments that reinforce the 'cooperative management of language learning' (Allwright, 1981:5). With much emphasis on both learning content and learning process, the present study would like to adopt the term, '*multimedia environments*', to encompass (the learning content of) multimedia materials, multimedia programs, multimedia software and the interaction involved within the learning process.

### 2.5.2.2 Multimedia for self-Directed language learning

Multimedia materials have great potential for self-directed learning, and features can be built into the design of such materials to ensure learners benefit from an interactive multimedia-enhanced platform when used outside class (Rüschhoff & Ritter, 2001). When computer-assisted multimedia applications are used for self-directed language learning purposes, several features and advantages are highlighted. Joiner (1997) identifies five main characteristics of face-to-face listening: immediacy, interactivity, control, multisensory input, and the availability of various options for obtaining help. More importantly, these features of multimedia environments allow language learners to 'explore, discover, ponder, search, question, answer and receive feedback' (Brett, 1998).

Among the multimedia language materials for self-directed purposes, video-centred interactive CD-ROMs or DVDs are one of common resources. Pusack and Otto (1997:6) indicate that video-centred multimedia involves three main features, including (1) *multiple media*-‘the combination of media types’, (2) *control*-‘the dimension of control’, and (3) *interactivity*-‘aspects of help and guidance in interactivity’. Based on Pusack and Otto’s analysis and other studies, I will explore each feature of multimedia environments in the next section, including the advantages, disadvantages and the relevant issues.

#### Multiple media

Firstly, the feature of *multiple media* implies the convergence of different media present in a single interactive environment, which can be applied to meet the needs of learners who have different needs. Through a combination of various media (e.g. text,

video, music, etc.) on computers, 'a multimedia environment has the potential to help students to confront and comprehend material more effectively by offering alternative or redundant presentation modes to match learner preferences or needs' (Pusack & Otto, 1997:6). Therefore, learners tend to learn more effectively when information is integrated and presented through more than one channel simultaneously (e.g. read, see, hear, speak, do, etc) (Brett, 1998), as 'the whole appears to be greater than the sum of its parts, with each medium reinforcing the effectiveness of the others' (Najjar, 1996, cited in Soo, 1999:299). In other words, in multimedia environments, as learners process visual and aural information instructions through two channels separately, information delivered aurally (i.e. narration) in combination with pictures can potentially enhance learning efficiency. Some studies reported evidence that the use of multiple media has led to a more positive impact on students' learning attitudes and achievements than lessons that are taught under text-only conditions (Atkinson, 2002; Moreno *et al.*, 2000).

In addition, multiple media in multimedia environments present authentic materials (e.g. news, comedies) that are motivating, engaging, interesting and culturally relevant, bringing learners close to the culture of the target language (Day, 2004). Through the use of authentic materials and help functions (e.g. synchronized subtitles and role-play) learners who have limited opportunities to communicate with native speakers of target languages are provided with opportunities to be immersed in authentic tasks and become motivated to learn. Then students can be better prepared for the real world. From a social viewpoint, multimedia learning environments can simultaneously combine verbal (e.g. spoken words) or non-verbal social cues (e.g. gesture, gaze, movement, etc.) that are typically found in human-to-human

communication (Atkinson, 2002), which help facilitate learners to engage in the learning process and encourage them to perform social communication with computers as if they are communicating with real people (Dunsworth & Atkinson, 2007).

However, there is an on-going debate as to whether using authentic materials for foreign language learning is beneficial to students. Day (2004) examines research literature (Morrison, 1989; Rivers, 1981; Williams, 1984) regarding the definition and problems of using authentic materials and discovers a controversy which indicates that the use of authentic language materials may have a negative impact on learners' motivation and attitude. Similarly, Pusack and Otto (1997) asserts that problems learners might encounter include difficulties comprehending authentic language and cultural barriers, especially when students use materials of inappropriate level or unfamiliar culture. Therefore, to teachers, designers and developers of materials as well as publishers, Day (2004) suggested *appropriateness* (i.e. language abilities, variety of English, and activities, tasks and exercises) should be the major concern while using authentic language materials. Otherwise, there might be a negative effect on learners' confidence, as Rivers indicated (1981:260), 'rushing students too soon into reading materials beyond the present capacity for fluent comprehension with occasional contextual guessing... destroys confidence' (cited in Day, 2004:104).

## **Control**

Secondly, the *control* feature of multimedia environments allows learners to be in charge of many aspects, such as pace and sequence of learning process, selection of learning tasks, when to access help functions (e.g. dictionary, glossary, subtitles, etc.)

and so on. The control feature also caters for learning differences and allows learners to choose their preferred learning modes (e.g. speaking, listening or reading). Especially for listening skills, being able to access help functions (e.g. repeat dictionary, subtitles, etc.) appears to lead to more positive attitudes toward the tasks (Jones, 2003, cited in Levy & Stockwell, 2006:180).

However, there are two sides to the issue of *control*. Provided with various levels of control, anxiety levels might be reduced as learners have opportunities to repeat practice of certain parts according to individual needs. This is beneficial in preparing learners to become autonomous learners who are constantly exposed to choices and control of learning, such as starting, stopping, assessing and repeating. When multimedia environments serve as self-teaching systems, learners can adjust the amount and the difficulty of input as they can avoid the danger and frustration of 'information overload' (Pennington, 1996:9). Therefore, students might show positive attitudes and motivation when they are given opportunities to control their learning content or pace.

Nonetheless, this feature of control may pose difficulties and challenges when learners have different abilities or background knowledge about the task (Pusack & Otto, 1997). While interacting with multimedia environments, one of challenges is that 'students are often not the best judges of appropriate strategies for effective learning' (Reeves, 1993; Hannafin & Sullivan, 1995, cited in *ibid*: 8). This concern implies that the factors of individual differences (e.g. learner attributes, conceptualization of the learning process and learner actions) and the appropriateness of tasks design (e.g. complexity of instructions for tasks) are crucial influences on

learning success while learners are in control of learning in multimedia environments. This issue also echoes Wenden's (2001) claim that learners' *metacognitive knowledge*, especially task knowledge, fundamentally affects the use of strategies and controls the process of self-directed language learning. Therefore, how learners who are less experienced in strategy use or lack the metacognitive knowledge to efficiently control their learning, benefit from the control feature of self-directed multimedia environment, and what problems or challenges they encounter, remain an area to be explored.

### **Interactivity**

Thirdly, the feature of *interactivity* in multimedia environments implies that learners have opportunities to "interact" with the software programs and resources provided, including 'navigation and user interface design, lesson architecture, task formats and student input, help support systems, and recordkeeping' (Pusack & Otto, 1997:10). Some evidence has been reported to confirm that interactivity enhances the processes of learning from computer-based systems, as it facilitates deep learning by actively engaging the learners in the learning process (Evans & Gibbons, 2007). In other words, the interactivity feature allows learners to manipulate the flow of information regarding time or content during the learning process. From a cognitive perspective, learners may become aware of their learning needs and progress while making different choices. In particular, listeners can access instant help provided by the interactive multimedia programs (e.g. repeat or subtitles), which can contribute to the comprehension of the learning tasks.

There are issues, however, regarding the impact of “help” on language learners and how they interact with the system. Pusack and Otto (1997) address two. One issue is that language learners may be involved with ‘too much help’ or are overwhelmed with help systems. While claiming features of control and interactivity can potentially motivate learners to engage in active learning processes, some researchers identify the risk that too much help might, in some conditions, make students learn passively or make limited effort. Indeed, active involvement in the learning process is crucial. Students might be tempted to use the help system without making the efforts that they should. For instance, while watching a video segment, it is possible that students directly check the subtitles as soon as they encounter difficult words without making interactive efforts, such as guessing by paying attention to the context, so that active involvement may not occur. Clearly, whether the interactivity with multimedia environments enhances learners’ “deep learning” (Evans & Gibbons, 2007) through help systems is uncertain, as it seems to rely mainly on individual differences.

The other issue is that software designers tend to focus on the interface issues with few concerns regarding interaction and expected learning outcomes. As discussed previously, various kinds of links and tasks (e.g. lexical help from glossaries, hyperlinked annotations with cultural or grammatical information, role-play, etc.) built into the multimedia environments by software designers appear to benefit learners’ cognition process, as they allow language learners to access immediate on-line help when they need it. However, how these interactive functions actually enhance interaction with the computer and improve learners’ cognitive process as expected is not clear, as too little is known about the actual process (Pusack & Otto, 1997).

To sum up, having explored the features, advantages, disadvantages and issues related to multimedia environments, it appears that, although the features of multimedia environments bring advantages to self-directed language learners, various disadvantages raise several issues that require particular attention. In terms of the feature of multiple media, whether students, especially less successful learners, have the ability to select the appropriate materials or tasks in self-directed multimedia environments is not clear. Similarly, how students control and interact with the multimedia environments needs to be explored as such a learning process seems to pose challenges to and place demands on learners' capabilities and metacognitive knowledge in controlling the process or responding to the programs. In addition, how students access on-line help to enhance interaction with the computer requires investigation. All these issues seem to suggest that the process of how learners self-direct language learning in multimedia environments is an area that is complex and requires further research.

## **2.6 A discussion of relevant studies**

Previous studies into unsuccessful language learners, self-directed learning or the use of CALL application (e.g. online resources) provide fruitful findings but seem to lack much emphasis on the learning process itself, interaction and factors, and how the process changes over time. For example, Vann and Abraham (1990) examined the strategy use of two unsuccessful language learners when exploring the reasons for lack of success in completing an academic program through introspective think-aloud techniques with analysis of learners' performance to observe how students conduct various tasks. The finding suggests that the two unsuccessful learners cited in the study were active strategy-users. However, they appeared to lack *metacognitive*

*strategies* or self-regulatory skills, and they failed to apply these strategies appropriately to the task demands. This research offers useful findings which provide information concerning the strategy use of unsuccessful learners. Nonetheless, a broader and more contextual scope is needed to research the learning process of unsuccessful learners. For instance, a longitudinal study is necessary to investigate whether there will be changes of strategy use (Burston, 2003) over time in self-study settings. Also, apart from strategy use, other individual traits should be studied such as motivation and self-confidence which also play crucial roles in affecting the success of language learners (Larsen-Freeman, 2001).

In addition, Hegelheimer and Tower (2004) explored learners' interactions within a CALL program in an authentic setting. This study found large variations in the use of multimedia options (functions). One of the findings shows the different use of multimedia options between higher and lower proficiency students. It is suggested that 'lower proficiency students preferred options that apparently did not help them as much, possibly based on the misperception that the more input the better' (*ibid*: 202). Therefore, it argues that guidance is needed when selecting options that are suitable for learners' proficiency level. This quantitative study does provide valuable information regarding how low-proficiency learners use the options of multimedia software. However, this 8-week study was conducted once a week in classroom settings and the findings appeared to be justified by researchers. It seems to provide a limited view of learners' interaction within a CALL program. Thus, studies proposing an alternative approach should be conducted to gain more insight into learners' perceptions regarding their interaction within CALL, particularly in multimedia environments, which have great potential to provide optimal learning

conditions. Again, to understand the self-directed multimedia learning process and learners' interaction with the software and the changes in depth, a longitudinal qualitative study is crucial to explore learners' perceptions based on self-study learning settings.

Furthermore, Gan *et al.* investigated successful and unsuccessful learners and the reasons contributing to their achievement (2004). Qualitative data were collected over two months through interviews, diaries and follow-up correspondence with 9 successful and 9 unsuccessful EFL students. The study attempted to explore three dimensions, attitudes, strategy use and motivation from students' self-perception. The findings reveal a wide variation between successful and unsuccessful learners in terms of learning differences. Comparatively unsuccessful learners appeared to be motivated by extrinsic orientation mainly driven by compulsory language examinations that undermine the interest and persistence students have in learning and lack of interest in attending voluntary English exams. The unsuccessful learners also show an overall negative attitude toward teachers' teaching styles and a lack of confidence when attending English classes. They attribute the sources of learning problems to inadequacies in the learning environment and the teachers. The result of the study argues for a holistic perspective on learner strategy training. Therefore, holding an integrative view to investigate how unsuccessful learners learn self-regulated learning processes is essential to observe changes of individual factors. Research studying learner differences, such as attitudes, strategy use and motivation involved in self-directed language learning process is needed.

Finally, CALL research to date appears to be dominated by internet-related studies, such as on-line foreign language learning environments and teacher training (Arnold, 2006), electronic learning or web-based learning and attitudes of instructors and learners (Khan, 2000; Liaw, 2002; Liaw *et al.*, 2007; Wang 2003), online synchronous text chat forum and literacy skills (Simpson, 2005), etc. Some of the research might be relevant to the present study but the focuses vary. A study by Murday *et al.* (2008) reveals what learners may encounter when self-studying online CALL resources. Murday *et al.* examine learners' and teachers' satisfaction with online language courses that contain both face-to-face contact and online delivery of course materials, which require students to participate in class in person, as well as taking part in online chats with their instructor, teaching assistants or peer learners (*ibid*). In particular, it is found that frustration was reported when students disagreed with the responses from the computer and with the amount of time spent on learning how to use the online system or solving network interruptions, rather than on studying the target language.

Murday *et al.* (2008) provided valuable findings concerning the qualitative assessment of learners' and teachers' satisfaction. However, the study does not inform us of in-depth changes in the themes and the dynamic nature of learning processes even though the data was collected over a two-year period. Research exploring questions, such as 'how students construct learning processes differently at different learning stages in self-directed learning environments?' and 'how does the interaction with multimedia environments and the settings change over time?' is needed as it might help us understand the complex learning process within multimedia environments.

To sum up, the previous relevant research reveals a need to address changes of themes or factors over time and this research will examine learning processes chronologically. These characteristics would also show the significance of the present study as it bridges the gaps described above in the previous literature regarding unsuccessful learners, self-directed language learning and CALL studies.

## **2.7 Rationale for this study**

Based on the review of literature on sociocultural theories and other concepts, including self-directed language learning, language achievement and individual traits, and CALL, three theoretical perspectives will guide the development of this study. This is a study of the self-directed (computer-mediated) multimedia language learning experience of less successful language learners who study English as a foreign language at university level.

Firstly, learning related to multimedia environments and other settings (e.g. peers, the instructor, activities, etc.) will be viewed as a social practice. Whether multimedia is effective in helping language learners is not the major concern. Rather, this study considers the learning experience as social and cognitive processes that learners engage in and construct with multimedia environments and other participants through the processes. Also this study attempts to examine various forces that could potentially influence the way in which learning processes are constructed. Thus, sociocultural factors such as the educational background of the participants, the educational context they are involved with (e.g. English and non-English classrooms, and self-study computer labs), and other settings (e.g. the activities and interaction with peers and the instructor) may all be important to the learning process. As far as

foreign language learning is concerned, language learning should be regarded as an interactive and dynamic process.

Secondly, multimedia language learning was chosen as the means used to investigate collaborative self-directed learning processes of less successful learners. One of the reasons is that this study intends to investigate sociocultural perspectives on CALL, especially the learning process in multimedia environments. Taking a constructivist stance, it is believed learning is regarded as an active, creative and socially interactive process in which learners construct and reconstruct new ideas based on their past and current knowledge. Learning based on such a position enables students to 'tap into resources and acquire knowledge rather than force them to function as recipients of instruction' (Rüschhoff & Ritter, 2001:223). Furthermore, it is believed that new technology used as learning materials, such as multimedia language learning environments, can be utilised as 'cognitive tools' that support deep reflective thinking and meaningful learning by means of problem-solving authentic tasks (Jonassen & Reeves, 1996:693). As cognitive development is viewed as 'a social, as well as an individual phenomenon, and thus requires any study of learning to take account of the social context (e.g. the settings, the participants, etc.) within which learning-related interaction takes place' (Simpson, 2005: 328).

Appropriate selection of learning materials offers learners diversity and helps to increase productivity and motivation (Levy & Stockwell, 2006), as they provide ideal language learning conditions that support active, collaborative, autonomous, self-regulated, experimental and authentic learning processes. Features of multimedia show potential to provide an optimal self-directed language learning environment to

foster self-structure and self-motivated learning processes with learners, to increase their 'cognitive apparatus' and 'constant cognitive growth' (Simpson, 2005:328). The present study, therefore, will investigate the sociocultural perspectives on CALL, particularly computer-mediated self-directed multimedia. This also echoes other recent movements towards a socially-informed second language acquisition research agenda (e.g. Block, 2003; Breen, 2001; Lantolf, 2000; Mitchell & Myles, 2004).

Furthermore, studying the field of individual use of multimedia self-directed language environments demands more attention. While multimedia applications are researched as online resources for distance learning purposes as part of formal education, multimedia CD-ROMs for individual self-study purposes has rarely been explored. However, there is a need for such research given the widespread use of multimedia CD-ROMs. For instance, learners can conveniently self-study foreign languages by accessing CD-ROM language learning packages from different sources at various locations, such as language learning websites, self-access centres at schools or public libraries or homes. Textbooks or magazines on a variety of subjects, particularly foreign language learning, often have a CD-ROM attachment as part of the learning materials. While multimedia software materials continue to be regarded as powerful and effective self-study tools at schools or on markets, research related to the individual use of multimedia environments does not currently attract much attention. More studies should therefore be devoted to examining the long-term use of multimedia for self-study purposes, factors which might potentially facilitate or inhibit the learning process, and how learners perceive the influence of multimedia.

Thirdly, multimedia is viewed as a channel to provide mediation experience to learners and to understand the scaffolding that less successful learners require in self-directed multimedia learning environments to reach the ZPD. This study intends to explore how individual traits (e.g. motivation, self-confidence, strategy use, etc.) of less successful learners are influenced through a collaborative self-directed language learning process and how multimedia and other non-multimedia factors mediate or perhaps inhibit their learning. Some researchers have elucidated the importance of investigating individual traits (internal factors). Instead of focusing on external factors (e.g. race, gender, etc.) that learners cannot control (Byrnes, 2003), it is suggested that research or intervention focusing on changeable factors, such as intrinsic motivation, self-efficiency (Bandura, 1986; Covington, 1992; Greene & Miller, 1996) and identity are more likely to provide recommendations which will positively affect student achievement (cited in Walker *et al.*, 2006:2).

Adopting this viewpoint, this study intends to gain more insight into how such 'internal risk factors' (Byrnes, 2003) or changeable personal traits (e.g. intrinsic motivation, identity, self-confidence, etc.) are affected during the self-directed multimedia learning process, which in turn will have implications for the use of multimedia in mediating less successful language learners to reaching the ZPD. Therefore, as stated earlier, instead of focusing on the effectiveness of multimedia as a language learning tool, this study investigates how changeable variables (i.e. individual traits) are affected throughout the learning processes and how learners perceive the impact of the experience, which might potentially, serve as indicators of future achievement.

Meanwhile, certain issues mentioned in the previous sections need to be examined, such as, 'how the features of multimedia mediate learning or cause problems for less successful learners', 'whether less successful learners encounter problems or challenges for lacking abilities in dealing with authentic materials, controlling pace and help functions and interacting with computers' or 'how the learning processes change over time', and so on. Therefore, researching how less successful students learn in self-directed language learning processes in multimedia environments in-depth and possible changes over a period of time are essential in addressing these issues.

In addition, this study believes in the importance of peers and instructors to learners, which should be considered as part of the self-directed multimedia language learning process. As far as the process of self-directed multimedia language learning is concerned, the social dimension is crucial, because as Garrison (1992) argues learning is deemed to be social, and is intertwined with external and internal processes. Benson (1996) also asserted a social dimension is involved when learners are engaged in controlling events, interacting with environments and various human or non-human resources, or taking responsibilities over the learning process and outcome. Thus, autonomy cultivated through self-directed learning not only changes individuals but also 'transforms the social situations and structures in which they are participants' (*ibid*: 34).

Consequently, this study would like to explore interactions that learners are involved in within collaborative self-study multimedia language learning environments. According to Benson (1996) and Garrison (1992), two perspectives of social

interaction are examined during the learning process, the human-to-multimedia and human-to-human (i.e. peers and instructors) interaction. In other words, rather than merely exploring how learners learn within multimedia environments, the focus on how learners respond to the presence of peers and the instructor, the overall context, such as the facilitating activities, and so on, will be considered.

## **2.8 Research questions**

Following the theoretical framework outlined above, four research questions will guide this exploratory study of self-directed multimedia language learning,

- (1) How do less successful language learners initially perceive self-directed multimedia language learning environments and non-multimedia factors, and how does the perception affect learners' individual traits?
  - a. What are the initial impressions and attitudes of less successful learners toward self-directed multimedia language learning environments and the impact on individual traits, particularly those of motivation and self-confidence?
  - b. What are the initial impressions and attitudes of less successful learners toward non-multimedia factors and the impact on individual traits, particularly motivation and self-confidence?
- (2) What are the problems and challenges less successful language learners may encounter in multimedia environments and how do they affect learners' individual traits?
  - a. What are the problems and challenges?
  - b. What factors are involved?
  - c. How do the problems and challenges affect learners' individual traits, in terms of motivation, self-confidence/anxiety and strategy use?
- (3) How do less successful language learners cope with the problems and challenges they encounter in self-directed multimedia language learning environments, and what is the effect on learners' individual traits?
  - a. How do they cope with the problems and challenges? What factors are involved?
  - b. How does the coping process affect learners' individual traits, in terms of the impact on motivation, self-confidence and strategy use?
- (4) How do less successful language learners perceive the impact of the multimedia language learning experience on the English and the non-English learning context, in terms of motivation, self-confidence and strategy use?
  - a. What is the impact on the English learning context?
  - b. What is the impact on the non-English learning context?

## **Chapter 3**

### **METHODS OF INQUIRY**

#### **3.1 Introduction**

This chapter will describe the methodology employed in the study. As shown in the last chapter, a qualitative approach will be the primary means to better understand the complex and dynamic learning processes in self-directed multimedia language learning environments. By exploring the experiences of a small number of learners in depth in a real self-study context, it aims for 'concrete and complex illustrations' (Wolcott, 1994: 364) or thick descriptions of the individual cases, while also attempting to identify some general trends and significant patterns among them. As the main focus of this inquiry is on the students' perspectives, the individual cases are compared with one another, adding richness and complexity to the interpretations. Participants' narratives from learning diaries and interviews are the major source of data, while other kinds of data such as field notes from observation by the researcher or self-observation by the students, debriefings, and questionnaires results are also included. In what follows, the design of the study will be described. The research methods utilised in this study and issues relevant to the sampling, participant description, data collection and analysis are also discussed. Finally, the strategies related to validity, reliability and ethics will be clarified.

#### **3.2 Approaches to the research**

A qualitative approach to research is widely used in the social sciences and other applied fields (Marshall & Rossman, 1995). By 'seeing through the eyes of the people being studied', qualitative inquiry concerns itself with 'how the world is understood, interpreted, experienced or constituted' (Bryman, 2004:279). Thus, the qualitative approach aims to provide meaningful, in-depth and contextual

understanding. There are four characteristics of qualitative research, (1) it takes place in the natural world; (2) it uses multiple methods that are interactive and humanistic; (3) it is emergent rather than tightly prefigured; (4) it is fundamentally interpretive (Marshall & Rossman, 1995: 3). With these particular features, this research adopts a qualitative approach of inquiry, as the main research aim is to investigate the process and impact of a self-directed multimedia language learning experience. Furthermore, as the qualitative nature of this inquiry relies heavily on exploring the participants' changing attitudes or other aspects of individual traits throughout this project, the qualitative approach allows the researcher to capture the pictures by triangulating data collected from multiple instruments (e.g. interviews, observation, focus groups and learning diaries). In particular, participants' changing perspectives are carefully examined over an extended period of time, which contributes to the depth and complexity of the understanding. Therefore, the qualitative approach is essential for this study because the nature of the study emphasises process, interaction, context, reflectivity and emergence of concepts. With this approach, based on rich and detailed data, I hope to uncover a holistic, multi-layered and meaningful interpretation of how less successful students learn in multimedia environments.

Meanwhile, while employing the qualitative approach for the present study, to better justify it, I also consider some of the criticism of the qualitative approaches to research, as summarised Bryman as follows:

- (1) It is too subjective, as qualitative research 'relies too much on the researcher's often unsystematic views about what is significant and important'.
- (2) It is difficult to replicate because 'the investigator him- or herself is the main instrument of data collection', which may affect the choices of focus, the responses of participants and the interpretation of data.

- (3) There are problems of generalization, as the small number of individuals cannot represent all cases.
- (4) It lacks transparency, as 'the process of qualitative data analysis is frequently unclear'.

(Bryman, 2004:284)

Indeed, the above issues, which have been long discussed, are certainly influential to the understanding of what constitutes good research and what signifies bad research. Nevertheless, despite the above criticisms, qualitative research can provide highly valuable data in appropriate contexts such as the present study, with its unique features. In trying to deal with the problems identified by Bryman, Mason's (2000:7-8) guidelines on 'what qualitative research can and should be', were helpful.

According to Mason, qualitative research should

- (1) be *systematically* and *rigorously* conducted;
- (2) be *accountable* for its quality and its claims;
- (3) be *strategically conducted*, yet *flexible* and *contextual*;
- (4) involve critical self-scrutiny by the researcher, or *active reflexivity*.
- (5) produce *explanations* or *arguments*, rather than claiming to offer mere descriptions;
- (6) should produce explanations or arguments which are *generalizable* in some way, or have some demonstrable wider resonance.

(Mason, 2000:7-8)

There are three features that make this research unique. Firstly, instead of answering a general broad research question, this study attempts to investigate focused questions about the factors related to multimedia features and non-multimedia factors (e.g. peers, the instructor, activities, etc.). This is different from many qualitative research studies or ethnographic approaches, which tend to be more open to include all phenomena. In contrast to these more open approaches, by exploring the experiences of a small group of low-achievers learning in multimedia environments, this study aims to identify some general trends and significant patterns in how participants interact with multimedia environments and other participants, how they perceive their learning process at different stages, how they cope with problems and challenges and how they self-perceive the impact of such an experience. This

narrows down the focus, yet it is still 'flexible and contextual' (*ibid*).

Secondly, with the use of multiple methods, I systematically triangulate data collected from different sources. For example, I adopted data from in-depth interviews, weekly learning diaries, focus groups interviews, field notes from observation, debriefings and self-observation, which not only enhances the reliability and validity of the study but also makes the study '*accountable* for its quality and its claims' (Mason, 2000:7-8). By tracing the emerging themes from different sources, the pictures of the learning processes and the development of attitudes can be captured. For example, to investigate how the learners deal with difficulties of using multimedia software functions, I referred to data from learning diaries, debriefings and interviews with different entries from different participants. This qualitative approach provides information on the general trends of such problems and various possible factors involved. Thirdly, after the project, I carefully examined previously collected data and elicited issues worthy of advanced investigation to do follow-up interviews with participants. The procedure entails comparative analysis among cases to help gain a deeper understanding of themes involved in the interaction and learning processes in self-directed multimedia environments.

### **3.3 Researcher role**

In qualitative studies, the researcher is often considered as the 'instrument', as 'her presence in the lives of the participants invited to be part of the study is fundamental to the paradigm' (Marshall & Rossman, 1995:59). Researchers need to be cautious regarding gaining access to sites, having good interpersonal skills such as building trust and rapport, and being aware of reciprocity and ethics. Indeed, the importance

of establishing rapport and building trust with the students, the university and the instructors in conventional class cannot be ignored. Meanwhile, I consider my role in this research as both 'an outsider and an insider' (Spradley, 1980:60), which is crucial in this study for several reasons. First, as an English instructor in Chang Gung University, I organised this project and provided basic instructions to students about using software and facilities that were available on campus. My position as an English instructor allowed me to advise them (if necessary) using my professional knowledge, and build up trust with them.

Secondly, as this project took place on campus, my position helped me gain the access to the resources that are needed for this research, such as multimedia software, computer labs with facilities from the university and technical support from the software producers. For instance, I was able to reserve the computer lab that contains suitable hardware and equipment for the participants. Also I was eligible to request a brief initial introduction regarding the software from the publishers' representative. Thirdly, as a Taiwanese with similar educational background, I often shared my memories of similar school experiences with many of the participants. This helped induce a good rapport with them. For example, many participants described similar learning experiences that I had in high school regarding the ways they learnt English in class, materials they used and the problems they encountered. It became clear to them that I had a great deal of empathy with both them as students and their position as learners of English.

The issues of reciprocity and ethics were dealt with fully in this study. I often provided help to the students whenever possible, such as technical support or answers

to their questions regarding the selection of available software. However, I was careful in giving advice so that it would not disrupt the interaction among learners and computers. As a researcher, I am aware of the individual freewill without interfering with students' choices in self-directed learning contexts. While it is important to establish a trusting relationship with the participants, I had to adjust my role to be a facilitator, counsellor, resource and guide (Voller, 1997), rather than being a knowledge provider or a decision maker. Meanwhile, I am also aware of the importance of maintaining my neutrality in observations to maintain, as Spradley advocated for a participant observer, 'a balance between being an insider and an outsider, between participation and observation' (1980:60).

### **3.4 Sampling**

The sampling procedure used was 'purposive sampling'. This research was aimed at investigating how less successful university students self-direct their language learning in multimedia environments. Purposive sampling requires 'thinking critically about the parameters of the population we are interested and choose our sample case carefully on this basis' (Silverman, 2003:104). In the following sub-sections, I will illustrate the criteria and procedures for selecting subjects and describe details of participants.

#### **3.4.1 Criteria for selection**

To ensure the sampling was grounded in the applied theoretical framework, I set up a typology (Stake, 1994:243), by establishing a matrix of subject types as criteria. Firstly, while selecting participants, two major criteria considered were low-achievement and high FL anxiety. As discussed in Chapter 2, as FL anxiety is

significantly correlated to achievement and important individual traits (i.e. learner attributes, learner conceptualization of learning and learning strategies), it is assumed that less successful learners who are low-achievers with FL anxiety symptoms are very likely to show low self-confidence and intrinsic motivation, negative learning attitudes, learning beliefs, social identity, a lack of successful experience in using strategies efficiently, etc. (see 2.4.2 in Chapter 2). Therefore, the result of the Foreign Language Classroom Anxiety Scale (FLCAS) and low grades in the English of National Entrance Examination (NEE) served as the main criteria at this stage. Secondly, in order to find suitable subjects, pre-interviews were used to confirm that the invited students do show the major features of FL anxiety, as described above.

### **Sampling procedure**

A number of selection procedures were adopted in order to recruit appropriate subjects. Firstly, 150 freshmen completed the FLCAS. According to their scores on the FLCAS and the English grades (around average, 50-65), 20 potential subjects were invited to participate in individual pre-interviews. Secondly, they completed the demographic questionnaire, which provided information on background, education, perceived English proficiency, experience of self-studying English and using multimedia for learning English. During the pre-interview, in addition to collecting personal information, one major issue kept in mind was to confirm whether they present the symptoms of FL anxiety and the individual traits (see 2.4.2 in Chapter 2) while they were describing their past learning experience. Thirdly, I then introduced the design, purposes and requirements of this research to each interviewee. Of the 20 potential subjects, 8 decided to withdraw and 12 agreed to participate in the study. Finally, after signing the Informed Consent Form (see Appendix A), 12 volunteers took part in this project.

Instead of random selection, the process of purposive sampling was critical and complex. The whole selection procedures entailed careful design with clear criteria. By considering certain criteria (high FL anxiety and the symptoms, low academic achievement, and willingness to participate in this project), with various kinds of strategies (i.e. FLCAS, demographic questionnaires, pre-interviews and consent forms), I recruited qualified participants who were the population this study was interested in carrying out research on. This also contributes to the validity of this study. In other words, it helps with the generalisability of the research results because the detailed selection process makes it easier for teachers or researchers to replicate this research in similar settings in the future.

### **3.4.2 Participants**

Two males and ten females who majored in three departments, Nursing, Business Management and Information Management volunteered to take part in the study. The researcher was aware of the unequal number of female and male students recruited during the sampling. Despite of the fact that there are more females than males students who meet the criteria of the typology and voluntarily signed up for this study, the issue of gender is not the focus of the study. To help readers to easily recognise the participants as well as for reasons of confidentiality, I used S1~S12 to represent the participants. After the pre-interviews, they were invited to voluntarily participate in this research. In addition, information collected from scales, demographic questionnaires and pre-interviews provide evidence of several features of less successful learners revealed by the previous researchers in Chapter 2. Certain features were identified in these students, which suggested that they are suitable and qualified subjects.

These participants have a similar educational background. Firstly, they have been learning English since junior high school when they were about twelve years old. Many started even earlier by learning English at private language institutes. This situation is fairly common in Taiwan where parents tend to arrange extra English lessons for their children before they formally start learning it at school. However, the experience is not always enjoyable because students tended to be asked to passively recite grammar rules and vocabulary without enough opportunities to use the target language. Secondly, they study English solely for examinations, which suggests a lack of intrinsic motivation or any interest in studying it autonomously. They also showed limited strategies for mastering this subject. Thirdly, they rarely have opportunities to practice listening and speaking skills in class so that they have a deep fear about those two skills. Although data shows that they recognised their extrinsic orientation and regarded English as a very important means for their future career, they have a strong sense of helplessness as they either could not find effective methods to improve their performance or could not overcome the fear of learning this subject. Fourthly, many have experience of failing English subjects in high school more than once. While mentioning their perceived language proficiency, many appeared to show low self-esteem as they had strong feelings of hopelessness about learning English. More detailed descriptions of participants' backgrounds and past learning experiences will be discussed in Chapter 4 (see Table 4.1 in Chapter 4 and Appendix I for the backgrounds of the 12 participants).

In addition, it is noted that six subjects, identified as S1 to S6, were regularly discussed in this thesis for the rich data they provided through various resources, such as interviews, learning diaries, self-observation, and so on. This approach was

adopted as studying the thick description of these particular cases over time allowed me to explore important issues in-depth. However, data from other cases also applied and served as useful sources to compare and contrast the findings, which helped develop a holistic picture of how the learning processes and changes occurred in the self-directed multimedia language learning environment, and its impact on participants. Therefore, such an approach offers advantages in investigating themes in detail without missing the general trends.

### **3.5 Data collection methods**

#### **3.5.1 Interviewing**

'Interviews are one of the most commonly recognised forms of qualitative research methods.' (Mason, 2002:63). Marshall and Rossman (1995) also pinpointed the importance of interviewing. Through interviewing, researchers can uncover participants' perspectives on certain topics by holding 'a conversation with a purpose' so that 'qualitative researchers rely quite extensively on in-depth interviewing' (*ibid*: 108), which enables interviewers and interviewees to have 'an interchange of views...on topics of mutual interest' (Kvale, 1996:14). Because interviewing involves direct interaction with participants, one advantage is that "it allows greater depth than is the case with other methods of data collection". (Cohen, Manion & Morrison, 2000:269). Therefore, Silverman (1993) expresses the view that interviews are particularly beneficial for qualitative research for

- (a) gathering facts;
- (b) accessing beliefs about facts
- (c) identifying feelings and motives;
- (d) commenting on the standards of actions (what could be done about situations);
- (e) present or previous behaviour;
- (f) eliciting reasons and explanations.

(Silverman, 1993:92-3)

Interviews have been categorised according to different purposes (e.g. Cohen, Manion & Morrison, 2000; Marshall & Rossman, 1995; Mason, 1996; May, 1997). Especially, Oppenheim divided interviews into two main categories, 'standardized interviews' and 'exploratory interviews' (1992:65). The formal ones are more likely to be used for large-scale surveys in which every respondent is expected to understand the questions in the same way. Rather than gathering facts and statistics in standardized interviews, however, exploratory interviews aim 'to develop ideas and research hypotheses' (*ibid*: 67) by allowing respondents to discuss their concerns, experiences and emotions freely.

In addition, Bryman (2004:108-129) identified types of interviews in two dimensions: structured interviews which are mainly adopted in quantitative research, and semi-structured interviews and unstructured interviews (*ibid*: 318-343) which are often included in qualitative research. Bryman defined structured interviews, which are sometimes called standardized interviews, and aim to give interviewees exactly the same context and styles of questioning to reduce 'error due to variation in asking questions' and to increase 'greater accuracy in and ease of processing respondents' answers.' (*ibid*: 110). On the other hand, unstructured interviews allow interviewees to respond freely. The advantage is that interviewers then respond to points that seem worthy of being followed up. With semi-structured interviews, researchers have a list of questions to be discussed. Although questions may not be discussed exactly following the guide, more or less the issues related to each topic will be covered. Therefore, compared to structured interviews, the process of unstructured and semi-structured interviews tends to be more flexible in that it emphasises interviewees' individual in-depth responses.

I considered the type of interview used in the present study as what Oppenheim (1992) called exploratory interviews and more specifically as what Bryman identified as semi-structured interviews which are also referred to as 'in-depth interviews or as qualitative interviews' (2004:321). I believed that this type of interview 'gives maximum opportunity for the construction of contextual knowledge by focusing on relevant specifics' (Mason, 2002:64). Therefore, interviewees' point of views can be explored in-depth, which can help triangulate data from other research methods to increase the reliability of the research. However, interviewing as a research method has limitations (see Seale 1998:209-10), and one of the main problems is concerned with issues of 'invalidity' (see Cohen & Manion, 1994:281). As interviews involve personal interaction, the attitudes of interviewees and interviewers may intrude, and a researcher may reflect his/her values in (e.g. transcribing interview data), which may in turn affect the 'validity' of the research outcomes. Therefore, to minimise the degree of invalidity, I also used other research methods, including observation, learning diaries, debriefings and supplementary methods.

### **3.5.2 Focus groups**

In addition, a focus groups method was employed in the present study. The focus groups method is a type of group interview that, with a more specific theme and a fairly unstructured setting, researchers intend to reveal how participants 'respond to each others' views and build up a view of the interaction that takes place within the group' (Bryman, 2004:346). Because of the 'socially-oriented' nature, the atmosphere is relatively more natural and relaxing than one-to-one interviews and the format allows the facilitator the flexibility to explore unanticipated issues as they arise in the discussion' (Marshall & Rossman, 1995:115).

At the end of semesters one and two, all the subjects were invited to participate in focus groups that were conducted in the discussion room located at the university library, with which they were familiar. Four 60-minute focus group sessions were conducted and the twelve students were randomly divided into two groups. The size of each group (i.e. 5-7 people) allowed each participant sufficient time and opportunity to contribute their opinions during the discussion. The focus group sessions were held after the individual interviews in order to discuss common issues that were raised during interviews, or other issues that seemed to worth further exploration. However, topics that were not anticipated in advance were also explored. With the participants' permission, the whole process was video recorded.

I consider that the focus groups method plays an important role in this study. Firstly, it helps develop understanding about how less successful learners feel about certain issues that emerged during the project. For example, one theme participants regularly mentioned was assessment and motivation in multimedia environments. Then through the focus groups, they were able to express different opinions through discussion. This was helpful in exploring various viewpoints and the factors in-depth. Secondly, it is valuable to see how peers stimulated each other's critical thinking in considering issues or problems that they encountered in self-directed learning environments. For instance, while discussing the issue of authenticity in multimedia environments, some hold positive opinions while others hold negative views by criticizing the unnatural accent, image or facial expression in animations they saw on the computer screens. Through sharing and discussing their experiences, there is more reasoning about, reflection on, and examination of personal beliefs. This helps develop learners' awareness and monitoring of the issues they agree or disagree about.

### 3.5.3 Observation

'Observation is a fundamental and highly important method in all qualitative inquiry: It is used to discover complex interactions in natural social settings' (Marshall & Rossman, 1995:107). This research method provides researchers with opportunities to 'gather live data from live situations' and then to 'discover things that participants might not freely talk about in interview situations' (Cohen, *et al.*, 2000:305). Therefore, through the observation method, events, behaviour and objects of chosen social settings can be studied in the situation where they normally occur (*ibid*).

In terms of content, observation is classified as two major types, namely structured observation and unstructured observation. Bryman (2004:167) defined structured observation as a 'technique in which the researcher employs explicitly formulated rules for the observation and recording of behaviour'. On the other hand, semi-structured observation entails 'an agenda of issues but will gather data to illuminate these issues in a far less pre-determined or systematic manner' (Cohen *et al.*, 2000:305). Although it is time-consuming to conduct observation, there are reasons to adopt this method to collect data. The participants' responses to multimedia settings and classroom settings are the focus of this study. Therefore, it is crucial to catch the dynamic nature of events and to seek large trends and patterns over time (*ibid*).

This research mainly entails unstructured observation in conjunction with participant observation. It is argued that all research is some kind of participant observation as 'we cannot study the world without being part of it' (Adler & Adler, 1994, cited in Cohen *et al.*, 2000:305). As a participant-as-observer, I organised facilitating activities, provided technical support, conducted data collection, and observed

participants' learning to explore how multimedia learning experience affects learning in conventional classrooms and multimedia computer labs. However, I also had borne in mind the importance of 'balance involvement with detachment, closeness with distance, familiarity with strangeness' (*ibid*: 306).

In practice, when I observed each weekly learning session in the computer lab and each monthly session in the conventional classroom, I took field notes during their learning sessions on-site, as well as after the sessions by re-playing the recorded videos. This helped me to note the participants' learning behaviours, dynamics of interaction in the learning settings and the patterns of changes mentioned above, if any, over time.

#### **3.5.4 Self-observation**

In addition, methods of self-observation from participants were employed in multimedia environments. It is specifically helpful for uncovering the interaction with computer software and learning routes of each individual in self-directed multimedia language learning settings. Similar to *think aloud and self-report* (Wenden, 1991), learners have to 'introspect' and reflect on both the procedures of their learning and reasoning, feelings or attitudes underlying their learning process (e.g. decision-making). By observing a digital video recording of 8-10 minutes from a learning activity that had just taken place, participants were asked to explain what they had just done in the recording. As a result of participants describing their learning process, rich and vivid data can be collected, which can be used to triangulate the data they reflected in other sources, such as learning diaries or interviews.

### 3.5.5 Learning diaries

Apart from interviews, focus groups and observations, I also utilised learning diaries as a form of self-report to reflect learners' learning process after each learning session. Because the nature of this study is to explore human-computer and human-human interaction, learning diaries can not only raise awareness of learners' own learning, record incidents, changes, but also reveal possible factors involved in this research. In order to capture accurate reflections on what they learn, participants spent 10 minutes in a debriefing with a group of three or four students at the end of each learning session to report what and how they learn. They had to send e-mail learning diaries to the researcher within two days, which not only provided factual information (e.g. what they learn) but also included reflection on how they perceived the learning process (e.g. how they feel about the process, problems, progress, etc.).

This method is crucial as it showed not just the process of their learning, strategies employed, patterns of learning but also their inner thoughts throughout two semesters. Although guidelines were given initially and students were asked to answer general questions, these were flexible and eventually the participants tended to develop their own style of writing learning diaries or adding features showing personal preference (e.g. giving information in categories, adding symbols to express their feelings). In addition, one of the advantages of this method is that it became an additional channel leading to follow-up interviews. For instance, the researcher sometimes asked further questions and the participants would provide more details. The other advantage is that, through e-mail, participants found it helpful to raise questions that they did not mention on site (for different reasons) when they had doubts regarding technical or language learning issues.

### **3.5.6 Supplementary methods**

In addition to the above methods, I also utilised questionnaires and reflective tasks as supplementary methods in the study (Marshall & Rossman, 1995). I administered questionnaires in order to identify the degree of self-confidence of individual participants at the end of the self-study course (see Appendix C1). The completed questionnaires were then used to triangulate different data from different sources. Regarding the use of reflective tasks, my intention was to stimulate participants' awareness of the strategies or approaches they used in their learning process. Using activities for reflecting on cognitive (e.g. how they deal with speaking or listening language learning tasks in multimedia environments) or metacognitive strategies (e.g. how they assess their progress, make learning plans, etc.) encouraged them to take their responsibility in controlling learning seriously. Thus, their reflection through notes or e-mails was not only triangulated with data from other sources, but was regarded as a process to facilitate learning and cultivate autonomy that is crucial in self-directing in encouraging self-direction in learners.

### **3.6 Description of software**

The CD-ROM software used by the participants varies (see Appendix G) and was provided by the Audio Visual Centre and available to any self-study learners in campus in Chang Gung University. Although the decision to purchase the software was made by the library staff and students, the researcher examined all the multimedia software in advance to make sure the software matched the three major multimedia features (i.e. multiple media, control, interactivity) described in C.2.5.2.2 (Pusack and Otto, 1997). The level of the software ranges from beginner to advanced and comprises different genres, such as comedies, news, business, survival English, etc.

As shown by the table in Appendix G, the major interactive features/ functions include speech record, role-play (with Speech Recognition System), dictionary, repeat, subtitles, tests, etc.

In particular, two functions are worthy of note, namely record and role-play. Unlike other one-step/click functions (e.g. translation), they involved a series of steps that are complex. For instance, to use the record function, learners have to make decisions to select sentences they would like to record in advance, listen to the original modelling sentence and press the “record” button (with a red dot) before starting to speak each sentence. Then to check their recorded voice, they need to press the “play” button.

In addition, to role-play, there are further procedures. Learners first have to decide on a role in order to practice the dialogue. To be able to pass the threshold (learners can vary the standard from low to high according to their own proficiency) and meet the requirement of the Speech Recognition System (SRS), learners have to follow the dialogues on screen and pay attention to the interactive element (e.g. timing of turn-taking) to produce an acceptable output with the proper intonation and pronunciation within the time limit. If learners fail to meet this requirement, the dialogue will be interrupted and immediate feedback will be displayed on the screen giving the learners three choices, i.e. *ignore/continue*, *listen to the original* or *try it again*. The response also provides a threshold level which they can adjust at the same time (see Appendix F to refer Screenshots of Software).

### 3.7 Data collection procedure

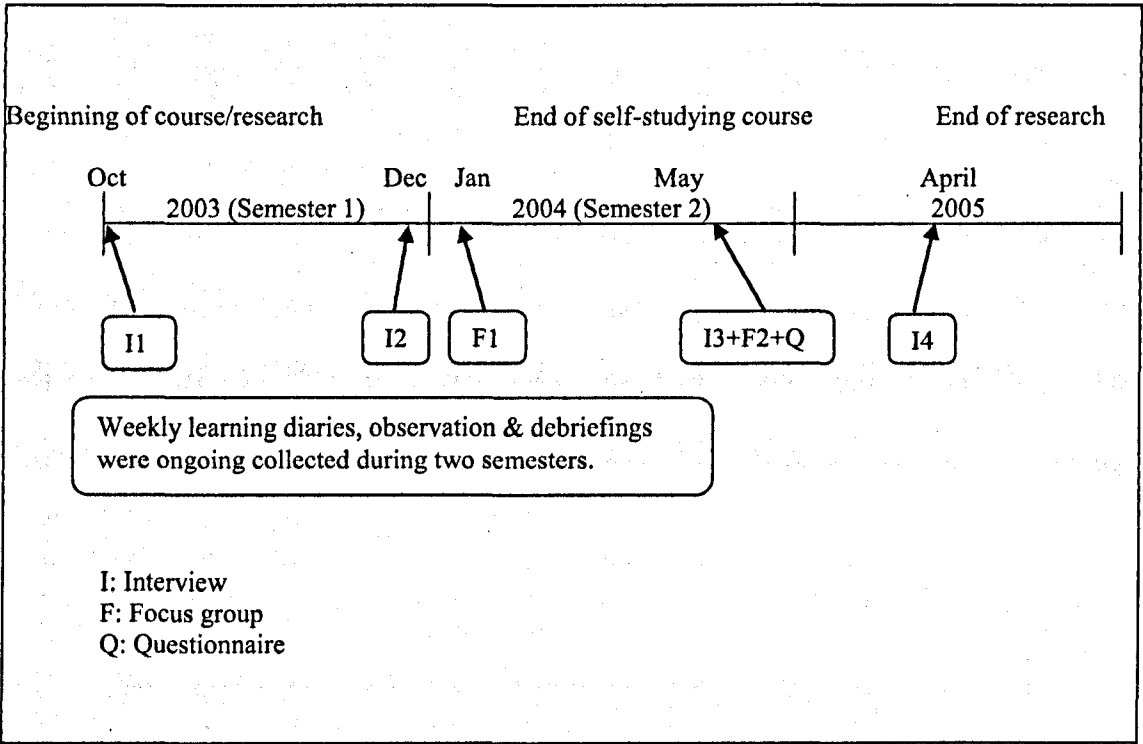
At the first session, the instructor explained the general procedures of each session including 5 minutes for announcements, 70-75 minutes of learning and 10 minutes of group debriefings at the end of each session. The instructor briefly introduced different choices of software (e.g. interactive movies, comedies, magazines, news, dictionaries) and encouraged them to try different functions (e.g. recording, role-play, repetition, tests, etc.) (see Appendix E). The participants could choose whatever they liked to learn in each session. They then shared their reflections at the debriefing with a group of three to four students in either English or Chinese, their mother tongue.

Participants also have to submit weekly learning diaries by e-mail to provide any learning reflections regarding various aspects, such as what content they learnt, how they learnt with what particular software functions, problems or insights of each session, self-evaluation about their progress or obvious changes comparing with previous learning sessions, important events in the learning process and inner thoughts. They were encouraged to include as much reflection as possible in terms of their responses towards any multimedia or non-multimedia factors of this multimedia project.

The instructor offered assistance as necessary to solve technical problems, such as installing software. It happened quite often that some computers were not compatible with some CD-ROMs or participants often had problems with using certain functions. The instructor was there to help them with or advise them about different options, such as changing to different software or computers that were

available on the site. Meanwhile, at the beginning of each session, the instructor shared the problems, solutions or inspiring reflective thinking from weekly diaries and debriefings. In addition, the instructor asked participants to pay attention to one question related to learning strategies during each session. Then they needed to reply to that in their weekly diaries. For example, subjects were asked to consider how they assess their progress, how they set goals, how they arrange learning procedures. Figure 3.1 and Table 3.1 illustrate a timeline of data collection procedures and a summary of database.

**Figure 3.1: Data Collection Timeline**



**Table 3.1: A Summary of Database**

Methods	Data collection period (October 2003 ~ April 2005)	Data
1. Interviews with individual student	Interview 1: Oct. 2003 Interview 2: Dec. 2003 Interview 3: May 2004 Post interview: Apr. 2005	*Digital video recording & transcription * 45 min per interview * 42 interviews in total
2. Weekly learning diaries	1-2 entries per person per week (Oct. 2003 ~ May 2005)	*Email messages * Follow-ups
3. Focus groups	1 <sup>st</sup> time: Jan. 2004 (end of semester 1) 2 <sup>nd</sup> time: May 2004 (end of semester 2)	*Digital video recording & transcription *60 min each time *4 focus groups in total
4. Observation by the researcher	On-going in computer lab Once a month in conventional class (Oct. 2003 ~Apr. 2004)	*Field notes
5. Self-observation by each participants	On-going in computer lab (Oct. 2003 ~Apr. 2004)	*Digital video recording, audio tape recording and transcription *8-10 min each recording per person
6. Debriefings by groups of 3-4 participants	End of each multimedia session On-going	* audio tape recording and transcription * 10-min each recording per group
7. Documents	On-going	*self-evaluation sheets *handouts & notes

## Database

Data were mainly collected around the entire academic year from October 2003, until May, 2004. A post/ (4<sup>th</sup>) interview was conducted between Feb. to April 2005 to explore the perceived impact of multimedia learning experience in the project on various English or non-English learning contexts (see Appendix B). The methods used for data collection varied, as shown in Table 3.1.

## 3.8 Data analysis: analytic procedure

### General considerations

Through qualitative data analysis, researchers attempt to make sense of data in order to discover and derive patterns in the data, look for orientations in the data and, attempt to elicit the meaning and explanation of the data (Hitchcock & Hughes, 1995).

Meanwhile, researchers play the roles of 'funnels' through which the data are collected and some form of informal data analysis occurs at the same time during this process (*ibid*: 295-298). Therefore, data analysis happens simultaneously while data is collected, as 'data collection and analysis typically go hand in hand to build a coherent interpretation of the data' (Marshall & Rossman, 1995:151). However, there are concerns and criticisms related to qualitative data analysis. Bryman (2004:398) pinpointed a problem researchers might encounter, which involves being captivated by the attractiveness of the rich data and the difficulty of finding 'analytic paths through that richness'. In other words, there seems to be no clear-cut analytic path because well-established and widely accepted rules for the analysis of qualitative data are limited. In addition, Bryman also contends that 'data fragmentation' happens while coding, which is a frequently employed technique to break down data into general and particular units of meaning to identify patterns, themes and consistencies which emerge from the data (*ibid*). As a result, for researchers, it is noteworthy that 'the great tension in data analysis is between maintaining a sense of the holism of the interview and the tendency for analysis to atomize and fragment the data' (*ibid*: 399).

Therefore, how to draw valid meaning from a vast quantity of qualitative data with appropriate and balanced 'theoretical sensitivity' becomes a challenge (Hitchcock & Hughes, 1995:298). In the present study, I also encountered a similar challenge as I attempted to make sense of data by exploring a vast amount of data from interviews, learning diaries, debriefings, observation and questionnaire results. Finding analytic paths to appropriately interpret data and not being captivated by the attractiveness of data became an important task that I always bore in mind.

## **Analytic procedure**

The data analysis approach for this study is primarily inductive, which is frequently cited in qualitative research. Patterns, themes, consistencies and exceptions from collected data are fully explored to identify emerging codes, categories and theories (Hitchcock & Hughes, 1995; Bryman 2004; Marshall & Rossman, 1995). Therefore, bearing the research questions in mind, I intend to focus on themes and categories which emerged from the collected data, which would answer the research questions. On the other hand, I was particularly aware of the unexpected but relevant issues that emerged from the whole setting. Hopefully, the true picture of the data can be completely and vigorously presented. To help achieve this goal, I adopted data analysis procedures suggested by Marshall and Rossman (1995:152) in that I employed five phases that typical analytic procedures fall into: (1) organizing the data; (2) generating categories, themes, patterns and coding the data; (3) testing the emergent understandings; (4) searching for alternative explanations (5) writing the report. These procedures are not conducted in a linear fashion; instead, they are complex, ongoing and cyclical throughout this study and include data analysis and data collection stages, which are advocated as 'an iterative process by which the analyst become more and more 'grounded' in the data and develop increasingly richer concepts and models of how the phenomenon being studied really works' (Weitzman, 2000:783). I will discuss how I applied these phases of analysis in detail as follows.

### **3.8.1 Organizing the data**

Organizing data was a continuous and creative process as various critical decisions had to be made. During the data collecting stage, I organised data in different ways. Firstly, I had separate files in order to keep data collected by different methods. For

example, I kept files for weekly learning diaries from individual students, files for interview transcripts, files for observation notes, files for focus groups interviews and debriefing transcripts. Secondly, I had files for all the relevant data specifically for each individual student, which were organised chronologically. For example, one of the participants, S1, has her own files that contain data collected (e.g. interviews, learning diaries, observation, etc.) at different times over two years. The above arrangement allows learning patterns of similar or different themes which occurred at particular times, or changes of themes over time during the whole of the learning process, to be naturally revealed in an inductive manner rather than impose *a priori* categories (Dey, 1999; Strauss & Corbin, 1998).

Thirdly, I created files for each of the individual students to record their unique experiences, perspectives or characteristics. After finishing each data collection at different stages, such as semester one and two, I summarised learning profiles for each student. The contents of profiles containing: (1) raw data from demographic information (education background, experience of learning English in school, perceived English proficiency), (2) the incidents they reported during each stage, (3) the factors they mentioned that affected their learning and change or development (4) the major themes and issues that emerged. This method helped me capture each student's learning history, development and concerns in a holistic manner. More importantly, I compared the different responses between cases to gain a broader view of the possible impact from multimedia factors or other non-multimedia factors.

At the same time, bearing the research questions and assumptions in mind, I immediately read through the data, noted down points for follow-up at the next

interviews, or asked for clarification through e-mail correspondence while this project was on-going. Therefore, data collection and organizing data are developed simultaneously. In such an *iterative process*, the researcher's conceptual frame for understanding the data was polished and the implications of the collected data shaped the next steps in the data collection, which analytic induction regards as strategies of both data analysis and data collection.

### **3.8.2 Generating categories, themes, patterns, and coding the data**

This phase of data analysis, namely generating categories, themes, patterns, and coding the data, is 'the most difficult, complex ambiguous, creative, and fun' (Marshall & Rossman, 1995:154). Weekly learning diaries, transcripts of individual and focus groups interview, debriefings and observation notes were repeatedly examined throughout the project. Based on three types of coding strategies used by Strauss and Corbin (1990, 1998), emergent themes and relationships between the themes were identified.

In *open coding*, I aimed to recognise the characteristics of the learning process that were important to the participants. For example, I was able to identify the complex and changing roles of peers as threat, anxiety-provoker, mediator, motivator or emotional supporter. I also applied *axial coding* strategies in which I searched for sub-categories within the major themes and sought to identify relationships between the themes and the sub-themes, and the connections between categories (Strauss & Corbin, 1990). This strategy helped me link various incidents (codes) to causes and patterns of interaction, and to consequences (Bryman, 2004). For instance, when many students reflected on repetitive failure in practicing speaking with the computer (codes), various other similar incidents (codes) were also identified as a result, which

provided different interpretations of language learning problems (sub-themes) and challenges in multimedia environments (main theme).

In addition, *selective coding* which aimed at selecting core themes relating the core themes to other themes, validating the relationships among themes and adding other themes, was also used in order to search for a comprehensive picture of self-directed multimedia language learning processes. Core issues such as the relationship between individual traits (e.g. self-confidence, motivation and strategy use) and the emerging problems and challenges and coping processes (e.g. managing software or assessing progress) affected by features of multimedia environments and non-multimedia factors were identified.

Therefore, after the data collection was completed and certain recurring themes became apparent and were coded, more theoretical categories and constructs were generated both from the data themselves and the relevant literature. Patterns and relations between the categories were explored in depth. Such categories included the students' demographic, individual traits, educational and multimedia related background, initial impressions and attitude toward multimedia environments, problems and challenges during the learning process, process of coping with problems and challenges, influence of the learning process on learners' individual traits and changes over time, perceived impact of the multimedia project and so on.

### **3.8.3 Testing the emergent understandings and searching for alternative explanations**

Once the data were coded in terms of salient themes and categories, tentative hypotheses were formed about each core theme. These hypotheses were then tested

against the data, confirmed, revised, or rejected. For example, in analyzing students' data, I developed a hypothesis that less successful learners might favour controlling interactive functions, without fear or FL anxiety they reported previously, in self-directed multimedia language learning environments. However, in the middle stage, the speaking function appeared to pose threats to some of them though this fear may, or may not, last for some time. Then I needed to go back to the data and search for alternative explanations. Emergent hypotheses were also tested with individual participants. This was a lengthy and difficult but rewarding task which involved comparing and contrasting the hypotheses developed about the subjects and then developing 'theories' that seem to explain the similarities and differences across their experiences. Alternative explanations were sought when a theory that seemed to explain the case of most students, did not seem true in the case of another. Such a process described above was repeated many times to seek appropriate explanation.

#### **3.8.4 Writing the report**

Writing about qualitative data is central to the analytic process as 'in the choice of particular words to summarize and reflect the complexity of the data, the researcher is engaging in the interpretive act, lending shape and form-meaning-to massive amounts of raw data' (Marshall & Rossman, 1995:117). During the data collection phase, I kept a journal to record my analytical thoughts, and questions or issues for further investigation. I also noted down surprises, insights or ideas for analysis. Attending conferences, giving presentations and submitting to journals also helped me refine my conceptual frame in order to comprehend data more critically. Opinions or feedback from researchers in relevant fields provided me with further insights into the research and critically shaped the way I interpreted the data. In addition, writing out the

thesis gave me opportunities to test my own assumptions and beliefs about the research field. As a researcher, I consider myself to be a reflective channel in social research to interpret the multiple accounts provided by the participants. I am also aware of the possibility of multiple interpretations of the collected data. I regard such partiality as an inevitable problem that might occur when attempting to explain the complexities of human experience. Bearing the above concerns in mind, in the next section, I will explain the actions I took to reduce the partiality of data interpretation when writing the thesis.

### **3.9 Trustworthiness of the research**

Criteria for examining the quality of qualitative studies have been long discussed (e.g. Cresswell, 1998; Lincoln & Guba, 1985; Marshall & Rossman, 1995; Seale, 1999; Wolcott, 1994). In order to ensure the quality of qualitative research, this study follows the notion of *trustworthiness* in qualitative inquiry, which includes four perspectives: credibility; transferability; dependability and conformability (Lincoln & Guba, 1985; Marshall & Rossman, 1995).

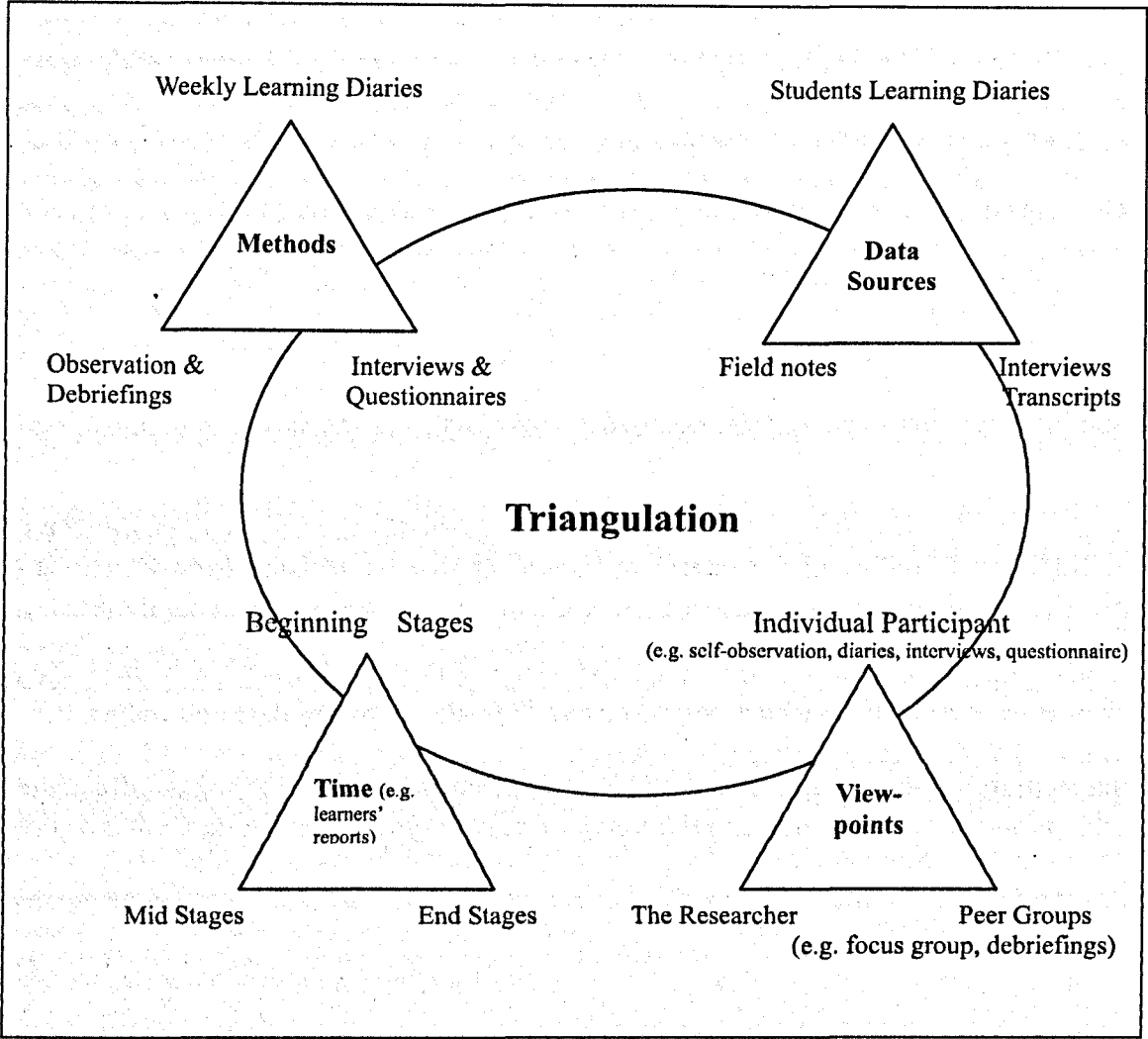
To enhance the credibility of the findings and reduce bias, Patton (1990) suggested four types of triangulation: methods, sources, analyst and theory, which were adopted in this study. Firstly, this study used multiple data collection methods, such as interviews, observation, learning diaries, debriefings, questionnaires, and so on. Secondly, this study collected and compared data from different participants at different time of the research. Justifying the consistency of the data among interviews, learning diaries, debriefings, etc., and among participants' viewpoints in terms of various issues, was used to conduct source triangulation.

Thirdly, to ensure analyst triangulation, I kept an on-going discussion with supervisors, other researchers in the field of second/foreign language education, and participants in the study. I was aware of the importance of keeping the data up-to-date with the CALL research field, as the technology developed quickly. Consequently, I constantly participated in conferences and gave presentations on my research from 2004 to 2007 (see Appendix H) to discuss the findings with scholars, researchers and practitioners, which was very beneficial in refining the data analysis and interpretation as well as promoting the credibility of the research.

In addition, I confirmed the interview transcripts that I translated from Chinese to English with the participants to make sure my interpretations accurately presented their own perspectives, which helped ensure the validity of my data and reduced the subjectivity of the interpretation. This type of member check is regarded as 'the most crucial technique for establishing credibility' (Lincoln & Guba, 1985:314).

Fourthly, theory triangulation was adopted through the multiple perspectives in the theoretical framework, which include a sociocultural view of learning, concepts of self-directed learning, language learning success, CALL and qualitative research approaches and data analysis. In addition to triangulation, the longitudinal nature of the study also helped increase its credibility. The lengthy data collection period provided time for continuous data analysis and comparison. Moreover, the use of participants' native language during interviews, learning diaries, observation and debriefings allowed for credibility (Schumacher & McMillan, 1993). Figure 3.2 shows the different types of triangulation employed in this study.

**Figure 3.2: Triangulation of Methods, Data Sources, Time and View Points**  
(Adapted from Morita, 2002)



Transferability or generalisability of qualitative findings has often been considered as a weakness due to the difficulty of generalising from a small non-random sample to a larger population (Stake, 1994; Yin, 1994). To address this issue, it is suggested that a clearly stated theoretical framework that includes a detailed explanation of concepts, models and parameters of the research should be presented so that readers can judge the transferability of the research to other settings (Marshall & Rossman, 1995). Bearing this issue in mind, I have explicitly discussed the theoretical framework in Chapter 2, which guided and was refined by this study. Thus, this study does not intend to claim any statistical generalisability of its findings to a population such as

less successful language learners from Taiwan. Instead, this study devoted much description to the assumptions of research, the theoretical framework and the context of the social practice. The thick description of the examined cases with their learning processes and changes in self-directed multimedia language learning environments, which is also 'richly contextualized, problematised, and theorized reports and interpretations', should help readers to judge the transferability of findings to other contexts (Edge & Richards, 1998:350).

Dependability refers to the extent to which research findings can be replicated. This concept is also known as the issue of reliability that is usually associated with quantitative research, where research instruments are used to measure the same phenomenon more than once and consistent outcomes are expected. However, the concept of replication is problematic in qualitative social science research - one of the reasons being that 'what is being studied in education is assumed to be in flux, multifaceted, and highly contextual' (Merriam, 1998:296). Rather, Mason suggested that qualitative researchers must ensure accuracy in research methods and practice to 'ensure that the data generation and data analysis are not only appropriate to the research questions, but also thorough, careful, honest and accurate' (2002:188). Merriam (1998) also argues that the reliability of qualitative research can be judged regarding its dependability, in other words that the results are consistent with the data collected. To augment dependability, I have provided an account of data analysis and interpretation that can consistently and accurately present the data, including using multiple methods to triangulate data and member checks to confirm the accuracy of transcribed data and its interpretation with participants.

Finally, the notion of confirmability in qualitative research is traditionally regarded as

objectivity in some research. Although subjectivity of researchers might inherently affect how the study is shaped, confirmability can still be achieved by ensuring that general findings are directly supported by data, so any implications can be identified (Marshall & Rossman, 1995). This study employed different ways of enhancing confirmability during longitudinal research, such as providing participants with many opportunities to check or confirm my tentative interpretations and transcripts through weekly learning sessions on site, follow-up e-mail replies or individual interviews. In addition, generating themes from data collected without imposing any themes on the data and discussing cases with other researchers to clarify the uncertainty, also helped promote confirmability of the study. To sum up, the trustworthiness of this study was established by several methods and strategies. Through such approaches, the quality of the research is justified, as it demonstrates the essential features of credibility, transferability, dependability and confirmability.

### **3.10 Summary**

This chapter discussed methodological consideration for this study, which is concerned with self-studying in self-directed multimedia language learning environments. The chapter started with elaboration of qualitative approaches to the research and the researcher role, which led to the design of study. The research design, including sampling, data collection and data analysis were described. The researcher mainly acted as a participant observer during the research process. Multiple methods were used in data collection. In addition, data analysis followed analytic procedures to analyse qualitative data, as suggested by Marshall and Rossman (1995) as well as applied coding strategies adopted from Strauss and Corbin's (1990) grounded approach. Finally, this chapter discussed the methods and strategies used to ensure the trustworthiness of the qualitative research.

## Chapter 4

### INTRODUCING THE PARTICIPANTS

#### 4.1 Introduction

Before exploring the learning processes in self-directed multimedia environments in detail, I intend to explore in this chapter the profiles of the participants in terms of background, previous learning approaches, motivation toward learning English, and self-confidence. To obtain a holistic and in-depth understanding, I discuss a limited number of participants who were I mentioned in Chapter 3. Presenting rich data in a manageable manner from the six particular students demonstrates learners' perspectives and unique personal learning experiences as well as portraying a variety of learner profiles of students who might be called "less successful language learners" or "low-achievers" and of the kind teachers and practitioners may well recognise. In addition, Appendix I provides general background information of other participants (i.e. S7~S12) for readers' reference. The findings in this chapter have been obtained mainly from demographic questionnaires and the first interview (Appendix B) before this learning project commenced. This chapter is crucial since it not only seeks to examine the participants' characteristics but also serves as a baseline to profile the state of their self-confidence, motivation and approaches/strategy use preceding this study. The following sections include (1) individual participants' academic backgrounds, such as achievements or failure, when they start learning English, self-perceived English proficiency in four skills and previous English language learning experience; (2) their approaches to and motivation for learning English in conventional class or self-study modes; (3) symptoms of foreign language anxiety and the state of their self-confidence; and finally (4) what they expect to gain from participating in this research. It is worth noting that the description is not consistent in headings used for subsections of each participant. This was a deliberate decision

on the part of the researcher in order to more accurately reflect each participant's thoughts as they were reported. To help readers to comprehend them, however, in the end, I illustrate the essence of each category in Table 4.1 so that the similarities and differences between cases can be more easily identified. Table 4.1 provides key elements in their backgrounds and characteristics, which were salient in the data and are the most relevant to this study.

## **4.2 Six case studies**

### **4.2.1 S1**

#### **Back ground**

S1 is nineteen years old. She studied extra English lessons at a private language institute for two years before the school provided formal English courses, which seems be a fast growing trend nowadays in Taiwan. With her parents' belief in the importance of "winning at the starting point", S1 took pre-junior high English courses that were mainly focused on textbook contents of grammatical rules and spelling exercises, in a traditional grammar translation approach. However, as she pointed out, this neither stimulated any interest in her for the subject nor brought her any learning advantages; which can be further demonstrated by her low English grades in junior and senior schools. Her average English grade in high school was around sixty-two, near the boundary of failing, which is sixty. For S1, this was discouraging compared with her performance in other subjects (e.g. chemistry and maths) as she was usually in the top five in her class. English had been the subject with which she felt "hopeless" and "painful", particularly while she was very confident with most of other subjects.

Thus, her poor academic achievement in learning this foreign language led to a negative view of her proficiency. In particular, she regarded her proficiency with

English as 'rubbish' and claimed that 'has never been good'. Pessimistically, she even attributed her hopelessness to a 'family trait' by saying 'It is in my blood because my younger brother and sister also failed their English (subjects) in school' and she does not seem to have much faith in making progress or changing this condition. The following statements clearly demonstrate the despair she felt in regard to her poor academic achievement:

*"My English grades were virtually rubbish: they've never been good. Each grade was sixty-two in almost every semester (Laughs embarrassingly!). Although I never failed this subject, I knew it was because the teachers madly added up the grades, or I would never have passed it." (S1, Interview 1: 08/10/03)*

### **Learning attitude, motivation and strategy use**

In terms of her motivation, S1 showed to a certain extent an extrinsic motivation to learn English in order to avoid poor exam results, embarrassment or consequences from teachers. She conceded that the only reason for studying English were the exams. She also gave negative comments on her efforts as she felt that she was 'lazy' as she was not willing to study English unless there were exams. Although she sometimes listened to audio CDs for self-study, it was simply because teachers "demanded" that everyone do so; apart from that, she would "not touch anything do with English".

*I never studied (English) unless there were exams to take. I am usually quite lazy. I used to listen to audio CD of a magazine, "Studio Classroom", when teachers asked every one of us to do it. However, soon I stopped that when the time of the Joint College Entrance Exam approached. Compared with other subjects, I am much lazier (with this subject) when memorising words. Maybe it's because of bad results in exams: I just could not remember the words no matter how hard I tried. Also whenever I saw native speakers, I would avoid speaking to them and stay away from them. (S1, Interview 1: 08/10/03)*

In order to obtain better exam results, S1 simply followed the teachers' request to self-study English, which does not show any intrinsic motivation or interest, and her poor exam results appeared to discourage her and effected in her a negative belief in strategy use. For instance, she claimed that she could not find any effective ways of

remembering vocabulary although she spent a long time ‘madly studying’ them. Therefore, there was no evidence of intrinsic motivation, interest or effective strategy use in learning or using English.

**Symptoms of FL anxiety and state of self-confidence -“*I am the one who does not understand what the teacher said*”**

S1’s symptoms of FL anxiety manifested themselves in several aspects, which also showed her low self-confidence and negative self-concept. First, she considered that others’ English ability was better than hers by saying ‘I am the one who does not understand what the teacher said’. It seems that she denied her abilities, as when she indicated that in class she always thought, ‘others could speak (English) well and they understood most of what the teachers said’. As she described earlier, poor exam results led to her low self-confidence in learning English as she thought that the ‘other students’ English is much better than hers’ and she did not have the ability to pass this subject if the teacher did not add up the grades. The attention she paid to the others shows her anxiety, and is one of the major symptoms of FL anxiety (Horwitz, 1986).

Second, she repeatedly mentioned that she was “too lazy to learn” and she seemed to find a reason to explain her low grades. Yet, apparently there was a contradiction to this in that she did spend much time “madly studying” but without much progress, which implies that she made an effort without being lazy. However, the outcomes are not satisfying. This has been described in Horwitz’s (1986) findings, i.e. that such over-studying behaviour might also be one of the FL anxiety symptoms, and shows a lack of learning strategies, although S1 had spent time and effort studying this subject.

Third, S1 seemed to encounter a “mental block” (Horwitz, 1986) as she reported her miserable experience of interacting with her high school teacher in class. Her painful memories of interacting with this English teacher in high school appeared to affect her immensely, which can be shown from her sensitive facial expression, with tears in her eyes when she described it. Obviously, it deeply hurt her self-esteem and dignity, which then implanted in her many doubts about her self-efficacy and ability in learning English, as she stated:

*It happened that I did not understand what the English teacher asked in class, which was about ..... At that time, I was so nervous that my mind went totally blank. In reality it was not difficult because I suddenly remembered what to say after the class. However, in front of the whole class, the teacher just humiliated me by saying that “It is very easy and how come you still can’t answer it? Come and talk to me right after class”. I was terribly nervous and frightened immediately. It was so embarrassing that I cried. Since then, whenever I was asked questions and I could not answer any, the teacher would show “that kind of facial expression” towards me again. (S1, Interview 1: 08/10/03)*

Thus, S1’s symptoms are consistent with previous findings in terms of FL anxiety. S1’s previous learning experience in school with peers and the instructors greatly affected her and accelerated her FL anxiety symptoms. The “mental blocks” she reported appeared to hinder her performance in class. For example, she found it difficult to correctly and instantly respond to teachers’ questions though she was able to recall the answer once the moment had passed. However, her poor performance was actually a sort of “mask” that could easily lead instructors to gain a false impression that she is lacking in ability or is lazy and underachieving (Horwitz, 1986).

In addition, her previous learning frustration from a particular high school teacher affected her in a negative way: she felt ashamed when she could not answer the so-called “easy” questions. Then, in public, when the teacher asked to talk to her afterwards, this also acutely hurt her dignity. Her teacher’s facial expression

-“contempt”, seemed to trigger her anxiety reaction when she could not answer questions properly. Indeed, there seemed to be a “vicious circle” (Cheng, 1999) due to low self-confidence, where S1 tends to underestimate herself in an anxiety related situation. The instructor-learner interaction not only decreases her self-esteem but also provokes a sense of competitiveness for her. She is very self-conscious as she thinks others can speak and understand English much better than her; consequently, her anxiety symptoms are very obvious.

#### **Academic goals, interest, expectation for participating in the multimedia project**

In terms of her goals and expectations for this multimedia project, she hoped to reduce her fear of listening to English, increase the number of new words she learned and improve her spoken fluency she often worried about being laughed at by others when she spoke in class. Therefore, being able to “speak English without being laughed at” was one of the goals she hoped to achieve. She also recognised that certain language skills, such as listening and speaking, were “very difficult to learn”. Therefore, she hoped to have the chance to practice these two skills in this project.

#### **4.2.2 S2**

##### **Background**

S2 is nineteen years old. She looked fairly timid and quiet, and smiled sweetly, which contrasts with her statements which were full of emotion. In terms of extra lessons and unlike the other participants, she never attended any private English lessons in addition to the ones provided by the school. She conceded that she had “no willingness or interest for learning it at all”. Similar to S1, S2 attributed her poor academic performance to her English proficiency. She pointed out that her English grades were “always very low” and she failed the English subject once in high school, which made her feel “embarrassed” and “ashamed”. When she

mentioned her previous learning experience in school, she indicated two reasons why she disliked English classes. The first one is the curriculum design that is test-oriented, which caused certain anxiety and tension, as she talked, in a very apprehensive way, saying that “English means tests, tests and more tests”. This was particularly worrying for her because she did not have much faith in her abilities to make progress in the tests due to regular failure even though she had “tried her best”. The second reason is that S2 was not satisfied with the learning contents. She criticized the textbooks as “boring stuff and not practical at all”. Consequently, such negative views in turn triggered a physical reaction and avoidance behaviour (Horwitz, 1986), and she indicated that she often suffered from stomach ache whenever she heard English and if possible, she would “stay away from English” as much as she could.

*My English grade was always very low. I gave up in high school because I did not think I could make any progress no matter how hard I tried. When there were English lessons, there would be tests afterwards, which meant a lot of pressure because I always did poorly with tests. I often hoped to stay away from English as much as I possibly could. But I know it is impossible! Maybe I just resisted learning English. I always told myself that I could not let my English be like this anymore because it is important for my future. (S2, Interview 1: 09/10/03)*

### **Learning attitude, motivation and strategy use**

The data indicated S2's learning attitude in class was mostly passive-resistant as she would not voluntarily answer any of teachers' questions. Being worried about making mistakes was a major reason because she thought her “pronunciation is not standardized”. In addition, her negative attitude in class can be shown by her ambivalent feelings toward limited interaction between teachers and students in class. Although she did not feel motivated to learn, ironically, she considered that a merit by saying “It was good in a way...because I did not have to worry that teacher might call out my name and ask me to answer questions if there was not much interaction going on”. Being afraid of pronunciation mistakes seems to make her hesitant, as she

stated:

*The teacher usually explained the contents from textbooks as soon as she came into the classroom. After she finished speaking, she would give us a break. All we did was listen to the teacher. We did not get the chance to practice speaking. The teacher simply kept speaking English and Chinese interchangeably to herself on the front stage, and we just did our own thing (e.g. resting or day-dreaming) on our seats. I know some other people were braver and spoke up in class, but I would not dare to answer any questions. I was so scared of making mistakes, as my pronunciation is not 'standardized' and I was extremely worried most of the time in class as I did not want to be called out to stand up and answer the question. It is better that teachers do not interact with us. (S2, Interview 1: 09/10/03)*

In terms of her strategy use for self-study, she did not have the interest to study English so that "listening to CDs" was considered an assigned task given by the school teacher. However, she did it reluctantly, which is similar to S1, as she showed a certain amount of extrinsic motivation to self-study at the teachers' request. However, she did not demonstrate any interest as she "fell asleep quickly while listening to CDs". This may imply that the audio strategy she adopted did not stimulate her interest. She showed little extrinsic or intrinsic motivation, or determination to commit herself to the task. Although she did feel concerned about her future, her attitude towards learning English was passive as she usually either slept or daydreamed in class.

*I used to study magazines and a CD privately because my teacher gave us tests every week, but I easily fell fast asleep as soon as I played the CD. I found it was a very "useful" way to send me to sleep immediately. I did not care about it. I did even bother memorizing any words. In English class, what I did was just either sleeping or daydreaming. It's unbearable! (S2, Interview 1: 09/10/03)*

### **Symptoms of FL anxiety and state of self-confidence**

In terms of her anxiety symptoms and state of self-confidence, S2 claimed that she had fear of English as she often "felt stomach aches" whenever she heard English, which is consistent with Horwitz's (1986) findings when she appeared to experience clinical symptoms. Her low academic achievement also caused her certain frustrations and resulted in low self-confidence so that she did not voluntarily answer

any questions in class because she often worried about her “poor pronunciation”. The main reason for her to “stay away from English” or to have a lack of interest in learning English seemed to be the hopelessness she described at the very beginning. In other words, the fact that she could not keep up with what the teachers said in class and previous low grades brought about her negative learning beliefs (e.g. she could not make progress.)

*English was very unfamiliar to me and I felt scared of it. Whenever I had to speak up in class, I panicked because I could not think of anything to say. If possible, I hope I do not have to touch English again in my life. (S2, Interview 1: 08/10/03)*

#### 4.2.3 S3

##### Background

S3 is eighteen years old. She started learning English when she was thirteen years old at junior high school. Her grades were below average, about fifty, in high school. Since then, she considered English as her poorest subject of all. In particular, she thought her listening ability was very low and that if someone speaks English too fast she “definitely cannot understand it”. When she described her past learning experiences, she described fairly frustrating memories of her English teacher and her performance in high school which made learning English very difficult for her:

*English has been my poorest subject since junior high school. Worse than that, my class teacher, who was also my advisor, taught me English. (We had to see her from time to time). At that time, she often asked me to have a talk with her after class. I guess that's because my English grades were far too poor. However, the worse my grade was, the less I felt like studying it. But I still had to study it, which was terrible! (S3, Interview 1: 08/10/03)*

##### Learning approach

As to S3's learning approaches in school, similar to other participants, she tended to be passive as most of the time she only listened to the teacher talking without saying anything or asking any questions. Unless she could be rewarded with extra credits, i.e. extrinsic motivation, she would not answer teachers' questions voluntarily, as she

described it:

*During English class in high school I was passive in that I usually just listened to the teacher talking. I wouldn't voluntarily answer any questions because I didn't dare, even I knew the answer. Unless teachers offered some credits, e.g. plus ten points, or I was very sure about the answer, I wouldn't even try. (S3, Interview 1: 08/10/03)*

S3's approaches to improving her grades in school involved two methods. Firstly, she took extra private lessons in a cram school, which was mainly focused on textbook contents. However, she stopped this after one year because it did not seem to be helpful. She realised that there were no short cuts and she claimed that she "still had to study it". Secondly, in response to the teachers' demands, she listened to an audio CD attached to magazines as self-study materials. At that time, she expected that listening to a CD seemed to be a more effective way to remember words as "everyone said so". However, this did not raise her interest or motivate her as she often, "fell asleep very quickly while listening to CDs".

In terms of her expectations of this multimedia English learning project, although she tried to be positive about learning English, she was still not confident about whether she could succeed this time. With her experience of regular failure in the past, she gave the typical but uncertain reply with an embarrassing laugh. On the other hand, the frustration she showed may also imply that she might have tried many times but never succeeded, as she stated:

*I feel English is very important for my future no matter what I major in, but my English is so poor that I really want to learn it well. ((Laugh)). I guess I have the confidence to learn English well (She said it reluctantly and laughed). I have been saying this sentence for many years!! I often felt quite frustrated. Whenever I built up my confidence, I got upset again when I got the results of the exams. It seemed there was no way to learn English! It took me one or two days to recover from that mood. (S3, Interview 1: 08/10/03)*

### State of self-confidence

Although she had to study English, her poor grades reduced her interest in learning

English. S3's descriptions suggest she is similar to S1 and S2, and she described her low confidence by emphasising that "my English is very poor" and "other's English is much better than me". It seems that her low academic achievement had a negative impact on her learning beliefs, which made her think she could not improve on it even if she tried. This sense of helplessness seemed prolonged and affected her faith in learning at university. She encountered great difficulties adjusting to a learning situation where English lessons in universities are mostly taught in English. Due to her previous frustration and lack of confidence, she unfortunately soon gave up coping with it by negatively addressing the problem as follows:

*After studying in university, I found all English teachers speak only English in class. In the beginning, I thought that the teacher might just speak a few sentences and I thought she would translate them into Chinese afterwards. No! She continued (speaking English). I was very frightened, as teachers spoke only English since they entered the classrooms. At first, I could not adjust to it because I could barely understand them. Now I am more used to not understanding teachers in class. In class, I always think other students' English (ability) is far better than mine. English is just too difficult for me to learn. (S3, Interview 1: 08/10/03)*

#### 4.2.4 S4

##### Background

S4 is eighteen years old. In the same way as S1, she learnt extra English lessons two years before the school offered formal ones. Instead of studying pre-junior English courses, what S4 learnt was mainly daily conversations. Although these were "fun", S4 considered that the course was "not organised very well" (e.g. the lessons were not systematic due to regular changes of teachers or textbooks). She did not learn much from the course; nor did that help cultivate any interest for learning English. Her self-perceived English proficiency was low and her English grades "had always been near the boundary of failing". She considered her listening ability was weak because it was difficult for her to identify linking words, and she also hoped to improve her pronunciation.

In terms of her previous learning experience in school, with a nervous smile S4 recalled these as “not pleasant”. Several incidents in particular had a negative effect on her. Firstly she indicated the teaching approach was “boring” since the teacher simply read out content from textbooks and translated it into Chinese. The lack of interaction between students and teachers appeared to reduce her interest for learning English. In addition, with corporal punishment given to students who failed to meet tests requirements, assessment became extremely anxiety-provoking for her. Also the task sometimes did not seem to be reasonable. For instance, the teacher asked them to recite the exact text, which was very difficult. Although she was not the worst compared to others (i.e. the teacher ‘only’ struck her twice), she was still terrified. Lastly, she doubted the usefulness of the learning outcome (e.g. reciting exact articles and dead sentences) of such a learning approach in class. As a result, with such pressure and such an impact from the teaching approach, her previous learning experience negatively affected her learning interest, willingness and motivation (e.g. “hate English”):

*My teacher in the second year of junior high school was not nice at all. He simply followed the textbook, read it out loud and translated it to Chinese. That was boring! And I did not like the way he taught, especially when he asked us to recite exact articles from the book. It was very difficult! Those who could not do it would be beaten. Although I got beaten only once or twice, that was just too horrible! What did we learn from that, from some dead sentences? This experience really made me hate English. (S4, Interview 1: 08/10/03)*

**Learning attitude, motivation and strategies-** *“Actually I did not make many efforts so far. What I did was just being against learning it”*

S4’s attitude towards learning English was affected by her past learning experiences, so that she tended to be passive-resistant. As the data suggested, she was very aware of the threat from and competitiveness of her peers. Meanwhile, similar to S1, S2 and S3, she thought other classmates’ abilities were much better than hers and

doubted whether she had the same ability as others. It seems that this peer influence was one of the major reasons which constrained her learning attitude and approaches in class. As a result, she tended to be passive in class and she never voluntarily answered questions. Her deep concern was a fear of making mistakes and being laughed at. Apart from peer pressure in class, she particularly recognised a weakness with her pronunciation in speaking and in listening and writing sentences. She seemed to particularly doubt the correctness of her pronunciation as not being “standardized”. The above concerns affected her learning attitude, motivation and strategies in class, which also posed similar problems to her learning, which I will discuss later in this study.

*I am very passive in class and my pronunciation was so poor. Because I was afraid of making mistakes and being laughed at, I never voluntarily answered questions even I knew the answers. I always felt that others' (English) were so much better than mine. I could never catch up with them in speaking or writing sentences. Many of them could always understand what the teachers said, but I could not. Compared with other subjects, English is far more difficult. It needs more determination than I have. (S4, Interview 1: 08/10/03)*

It terms of motivation to learn English, she showed an extrinsic motivation to a certain extent since she considered improving English proficiency as very important for her future. However, she did not have the confidence that she could achieve this, due to a lack of determination to persist at it. This feeling of helplessness was manifested due to a lack of successful previous experiences, self-efficacy (e.g. there is no way I can make it) and effective strategies (e.g. I don't know how I can improve my English). Although she kept reporting that she was “lazy”, like S1 and S2, it seems to be S4's best ‘excuse’ to explain the reason for her lack of interest, low proficiency and frustration.

*My English grades have always been near the boundary of failing. (Laugh embarrassingly) I have not built up my confidence learning English because I always felt very frustrated. I do not know how I can improve my English. Actually I have not made much of an effort so far. What I did was just being against learning it. I never felt like studying English. I am often very lazy when studying English even though I know English is very important for my future. (S4, Interview 1: 08/10/03)*

**Symptoms of FL anxiety and state of self-confidence-** *“I thought everyone else’s English is very good, except mine.”*

S4’s FL anxiety symptoms manifested themselves in several ways. She expressed her deep concern about not having the ability to perform as well as others; this shows her low self-confidence by exaggerating the proficiency gap between herself and others (e.g. I think everyone else’s English is very good, but not mine), which is a very typical unrealistic negative belief found with FL anxiety (Horwitz, 1986). Paying much attention to others and devaluing her own ability clearly illustrated her apprehension, anxieties and worry (Horwitz, 1986).

*The pressure for me from learning English was becoming a nightmare in senior high school. Because there were too many words to remember in so many different categories, I became extremely frustrated. In fact, I think everyone else’s English is very good, but not mine. There was no way I could learn it. (S4, Interview 1: 08/10/03)*

In addition, as the data indicated, her helplessness was characterised by her emphasis on not being able to memorise words (e.g. nightmare) and she could not find ways of solving this difficulty. She then blamed herself for “not making efforts” and “being lazy”. Again, the negative thoughts she expressed seem to imply a low self-confidence and a “mask” (Horwitz, 1986) she wore, which created the impression of her being lazy or stupid. Instead, not being able to employ effective strategies in dealing with vocabulary encouraged a sense of worthlessness.

#### **4.2.5 S5**

##### **Background**

S5 is eighteen years old. Like the other three participants, S5 studied extra English lessons at a cram school before school provided formal ones. Unlike the others however, S5 held fairly positive impressions of the extra conversation courses (i.e.

they were “fun”) due to the many opportunities she had to practice speaking and listening. Specifically, there was no pressure to complete tests. In addition, the atmosphere seemed to be encouraging at that time and she was not afraid of making mistakes while speaking up in class because “everyone makes mistakes”. However, the conditions changed at junior high school when she did not perform well within the tests. Although her performance was not too bad initially, she realised she had to handle a greater amount of content and vocabulary, which she found it stressful to cope with. In addition, the competitiveness of her peers seemed to provoke her anxiety and shake her confidence and she became more timid and scared of speaking English, as she commented “Others seemed quite tough!”

*I was quite confident speaking up at first when I started to learn English in a cram school. It was not such a big deal. I was not scared because everyone made mistakes, including me. But I did not dare to speak up in junior high school because I felt others' English was very much better than mine. (S5, Interview 1: 01/10/03)*

It seemed she became more concerned about peer pressure and less confident about herself. In senior high school, her grades became worse (e.g. about 50) and she failed the English subject three times consecutively. She attributed her failure to “too much learning content” and her trait of “poor memories” as the main causes.

*I know it is very important to learn English. I am just not interested in it and I am also very lazy in memorising words. However, because of my terribly painful experience (failing three times continuously) in senior high school, I must do something about it. I don't know what to do, but I can't let it be like that anymore. (S5, Interview 1: 01/10/03)*

### **Learning motivation and approach**

For S5, her consecutive failures, which she described as a “terribly painful experience”, affected her greatly and stimulated to a certain extent her extrinsic motivation. She indicated that the reason to keep learning was to avoid poor exam results and further consequences (e.g. “I can't let my English be as poor as that anymore”). However, it seems she had no interest in learning English or any effective strategies to achieve her goal, to improve her grades. The data reveal

evidence that she failed to use a wide range of strategies effectively and that she put much emphasis on her limited abilities (e.g. forgetting words quickly) and lack of willingness (e.g. too lazy to memorise ) to memorising new words, which she regarded as an indicator of English proficiency.

In addition, S5's learning attitude in a conventional classroom was mostly negative. For example, because her course was exam-oriented, S5 felt that she had few opportunities to practice speaking and listening in class partly because these were not exam requirements. Besides, there was always too much content to study, including reading, grammar and writing exercises to do. Therefore, she would usually not spend extra time practicing speaking or listening skills. The major activities for self-studying English mainly included reading English articles and memorising words from dictionaries. She did not practice much listening because she assumed that she would "forget the contents immediately anyway". Similar to the other participants, although her high school teacher often assigned a task that involved listening to audio CDs with magazines and then gave tests once a week, S5 usually failed to follow that, simply because it was "not fun at all", implying a reluctant attitude and lack of intrinsic motivation and willingness.

### **FL anxiety symptoms and state of self-confidence**

In terms of self-confidence, there are several points which indicate that she did not feel confident about learning English. Firstly, the fact that she had failed three times in high school seemed to increase her frustration and sense of hopelessness. Secondly, as mentioned earlier, S5 was aware of peer pressure while speaking as she thought others' English proficiency was fairly good. This affected her performance

in that she was not so brave as to speak up in class as she had been previously in junior high school. Thirdly, while in class, she was over-dependent on teachers before speaking up, as she pointed out, she, “only dared to say something after the teacher confirmed the answers” with them:

*In class, I would not dare to speak up unless the teacher had confirmed the answer with us. I was not sure whether my answer was right or not. I did not want to make mistakes in front of the class. I knew I did not have much confidence, and my grades were so poor that I often doubted my own answers. (S5, Interview 1: 01/10/03)*

### **Goals, interest and expectation**

In terms of her perceived English proficiency, she considered that her reading and writing were “all right” as she had had a lot of practice in class with these. She considered that listening and speaking skills were comparatively more important and more difficult, and she hoped to have further opportunities to strengthen these. Although she failed three times in class, she still hoped she would have a chance to improve her English as she thought she “could not let it (her English) to be like rubbish anymore”. This shows that she expected to improve listening and speaking through joining this project regardless of the fact she did not have much self-confidence or intrinsic motivation to achieve that.

#### **4.2.6 S6**

##### **Background**

S6 is eighteen years old. Similar to S1 and S4, she started her private foreign language lessons two years before the school offered formal lessons. As the purpose was to improve her ability in English communication, the lessons were mainly daily conversations. However, according to S6, because it was given by a relative, she did not consider it as a formal course. This apparently affected her learning attitudes as she claimed that she “did not learn it seriously” and she started “proper” lessons in

junior high school.

*I started learning English since I was in primary school. My aunt gave me private English lessons because she majored in English at university. But I did not study very seriously. Until junior high school, I stopped the private lessons and learnt properly at school. (S6, Interview 1: 01/10/03)*

As for her perceived English proficiency, comparatively, she was more confident in reading but weaker in writing and speaking. Especially with speaking, she considered it required more courage than she had, as English is the subject that she has been anxious about for a long time mainly because examinations and grades were always involved when learning English.

### **Learning experiences, attitudes, FL symptoms and approach in school**

Her attitudes towards the English course in school were passive, which can be seen in two aspects. Firstly, she was aware of her negative attitudes toward discussing her problems with teachers in class as she indicated she was “too lazy to ask teachers any questions”. Meanwhile, her reluctance to ask questions consequently led to a vicious cycle – although she tried to find or guess the answers, she did not feel confident with the results (e.g. grammar rules). After a while, vague concepts were accumulated and became more confusing, which caused S6 more doubts about her English ability.

*I was too lazy to ask teachers any questions most of the time. I usually tried to find the solutions by myself. But I was not very sure about the answers. Therefore, some notions, such as grammar rules, have been very confusing for me for a long time. The more I felt that, the less confidence I have for my English ability. (S6, Interview 1: 01/10/03)*

Secondly, S6's silence in class showed both her low self-confidence and also her symptoms of FL anxiety toward English. As she indicated, she did not have the willingness to voluntarily respond to any questions teachers asked mainly because of her English abilities, as she said. “*I might say something stupid and others would not understand me*”. Her unrealistic beliefs can be identified in how she misinterpreted

other classmates' English proficiency and considering herself as one who lacked the ability of fully understanding the lecture, as she said "I always thought others' English was very good and they could understand teachers very well. But I could not do it".

*There was not much interaction going on in English classes. Most of the time, I listened to the teacher talking and kept quiet. Even though I understood what the teacher said sometimes, I did not know how to reply. I would be so scared if I have to say something in front of other as I might say something stupid and others would not understand me. Sometimes I even did not know where to put my hands when teachers asked me to stand up and answer questions. I always thought others' English was very good and they could understand teachers very well. But I could not do it. My speaking was very poor. I could not fluently put ideas together. (S6, Interview 1: 01/10/03)*

### **Learning motivation towards self-studying English**

Due to the influence of teachers' demands and the test-orientated course design in school, S6's motivation towards self-studying English was mainly extrinsic (Deci and Ryan, 1985). Although studying certain self-directed language material (e.g. MP3 or printed magazines) is one of the popular ways that school teachers usually assign or suggest, S6 did not seem to appreciate it, as to her it is always associated with tests. The major purpose for S6 to study English magazines, for instance, privately was to deal with the tests that were held in school. Consequently, such an over-emphasis on test-orientation affected S6's motivation when choosing the learning contents. For example, S6 admitted that she rarely practiced listening because it was not part of the tests.

*The way I learn English by myself is by studying a magazine, 'Studio Classroom', but I almost never listened to that although there were MP3 audio programs enclosed. I sometimes did study that only because the teacher in senior high school would test us about the contents in the magazine. But teachers never tested our listening, so I rarely practiced listening. (S6, Interview 1: 01/10/03)*

### **Goals, interest and expectation**

S6's goals and expectations towards this multimedia project are closely related to her needs and past learning experiences. Despite the fact that she used to learn English mainly for the purposes of grades, she did not like to study English the same way due

to the frustration she experienced from the poor grades. On the contrary, she hoped to discover interesting ways to study the subject she was afraid of, not just for the purpose of preparing for tests. In addition, like other participants, she would like to improve her speaking and listening ability which she did not have opportunities to develop in the English courses in high school.

### **4.3 Summary and discussion**

Having explored the six participants' past learning experiences, learning motivation, approaches and the state of their self-confidence, certain issues emerged which show the characteristics of these low achieving university students with FL anxiety. In addition, this analysis hopes to contribute to an explanation of the commonality or differences participants have while learning in multimedia environments. Table 4.1 provides an overview of the six cases, which includes individual participants' academic backgrounds, such as performance in English class, the length of time studying English, self-perceived English proficiency and previous English language learning experience; their attitudes towards, motivation for, and strategy use when, learning English in conventional classes and in self-study; their symptoms of FL anxiety and state of self-confidence; and their expectation for the multimedia project.

Several issues emerge from the participants' learning backgrounds and past learning experiences. First, extra English courses did not have much effect on the participants' academic performance or learning interests. All of them studied English for at least six years consecutively in high school. Except for S2, four of them had experience of studying extra English lessons either before or during the formal English education in school. However, the three participants who took extra

**Table 4.1: Overview of Backgrounds of Participants S1 to S6**

	S1	S2	S3	S4	S5	S6
Age	19	19	18	18	18	18
Starting age of learning English	11	13	13	11	11	10
Extra private lessons	Yes About school contents	No	Yes. In high school. About school contents	Yes. About conversations	Yes About conversations	Yes About conversations
Academic performance	62	Failed once. Always very low.	50	60. Near the boundary of failing	50. Fail three times continuously in school.	56
Self-perceived proficiency in 4 skills	Listening and speaking were very difficult.		Listening is poor.	Poor pronunciation and listening, speaking and writing.	Listening and speaking were not good. Reading and writing were ok.	Reading was ok. Speaking and writing were very poor.
Previous learning experience in school	Being scolded in class and asked to talk to teachers after class. Being hurt by teacher's attitudes.	No interaction with teacher in class. Felt bored & daydreamed in class..Worried about pronunciation.	Poor grades caught the attention of teachers' and often being asked to meet the teacher after class.	Negative experience with teacher's teaching approaches. Too many words and contents to manage in high school.	Worrying about making mistake Other peers seem good in English	Teachers talked all the time. No interaction in class. Learn rote knowledge for tests.
Learning attitudes or approaches in class	Passive. Never answered Qs because afraid of being laughed at by peers and humiliated by teacher.	Passive. Worried and panicky if teacher asked Qs. Sleeping or daydreaming in class.	Passive. Won't answer teacher's Qs voluntarily Just listened to teacher talking	Passive. Never answered questions in class because worrying about making errors and being laughed at.	Relied on teachers. Only dared to say something after teacher's confirmation	Passive. Felt reluctant to ask Qs & never answered Qs. Scared of English as it is always related to grades.
Learning attitudes or approaches in self-study	Lazy and passive. Listen to CD if teachers asked.	Lazy and passive. Listen to CD if there are tests.	Listen to CD when teachers asked	Lazy and passive. Read English textbooks to learn more words.	Lazy and passive. Read English articles from dictionaries.	Passive. Listen to CD if teachers demanded & tested.
Status of learning motivation	Extrinsic motivation. No interest for English	Extrinsic Motivation Don't want to touch anything related to English.	Extrinsic motivation. Had to study English because it is important for her future.	Very frustrated. Being unwilling to learning English	Extrinsic motivation No interest but still has to learn for her future career.	Extrinsic motivation. Only study English for exams.
Status of self-confidence or anxiety symptoms	Low self-confidence. Negative learning beliefs - others are much better than her. Peer pressure. Worried about being laughed at if answered questions	Low self-confidence. Poor learner-instructor interaction. Felt hopeless to improve English	Hopeless even if she tried. Giving up trying to understand what the teacher said in class.	Others in class are much better than her. Being afraid of making mistakes and being laughed at.	Others are better than her. Poor memories to remember words.	Low self-confidence. Scare of English due to low grades. Others are much better than her.
Expectation for this multimedia project	Hope to speak English without being laughed.	Hope to daydream less and concentrate more in class.	Hope to succeed it this time and not to give it up anymore.	Hope to be able to follow what the teachers say in class. Learn practical things with daily-life content.	Hope to talk to foreigners without fear.	Hope to find a more interesting way to learn English & not just for exams.

lessons did not seem to appreciate this opportunity for different reasons, such as the lack of practical contents, the teacher-centred approach to teaching, or exam-oriented course design. Therefore, there is no evidence indicating a correlation between the benefits of taking extra lessons and the participants' academic performance or learning interests, as they all either have the experience of failing (i.e. S2, S3 S5 or S6) or nearly failing (i.e. S1 or S4) in English.

Second, all of the participants show low self-perceived proficiency as shown by the very negative comments they made about themselves. Their negative self-esteem is evidenced by such negative comments as, "rubbish", "never good" and "always very low". In addition, they considered their low proficiency and poor school performance were reinforced by their low grades. For instance, S1 claimed that she could not remember words because of her poor grades no matter how hard she tried; S2 indicated that she gave up because her grades were "always very low and hopeless" and she did not think she could make any progress no matter how she tried; S3 claimed that there was no way she could memorise vocabularies. The above may imply that the low grades actually lead to a deterioration in their self-confidence, which inhibited their attitudes, self-perceived proficiency, their beliefs in their performance and their motivation to learn in class. The negative and complex influence shows a 'vicious circle' (Cheng, 1999) or 'cyclical process' (Lam, 2000) that correlates with previous research literature.

Third, most participants appeared to have suffered from "horrible" "stressful" or "dreadful" learning experiences in school with more or less the same 'traumas', 'embarrassment' or 'fears'. They were concerned about making mistakes while speaking in front of peers; "being laughed at" was a major fear which affected their

willingness to interact, and attitudes towards interaction, in class. Therefore, none of them would voluntarily respond to the teacher's questions even though they knew the answers, except that S3 would respond when there were rewards (e.g. being given an extra mark). In addition, another concern many participants highlighted was a worry about their pronunciation as they may speak poor English without "standardised" pronunciation, which led to reluctance to speak in front of others. The above concerns can also imply that the participants were not confident in their ability to cope with the speaking tasks in class. It also shows that the atmosphere in class may inhibit intrinsic motivation to participate in activities or cause worries or anxiety when peers and instructors are not supportive or tolerant of mistakes.

Lastly, many participants tended to have unpleasant memories of school, which they attributed to the instructor's attitude and teaching approaches which provoked anxiety. For instance, S1 had painful memories of being humiliated by teachers' comments and facial expressions when she forgot the answers and could not reply promptly; S2 was terrified when her teacher randomly called on students names to answer questions. She would rather not have such an obviously very stressful "interaction"; and S4 reported a horrible experience when her teacher had hit students who could not recite exact words from articles, which caused her great anxiety and fear. Therefore, previous learning experience, especially related to teachers' teaching approaches and attitudes, apparently play an important role in shaping learners' learning beliefs, attitudes and self-confidence, which has also been identified in previous research (Young, 1991).

In terms of learning motivation and approaches, all of the participants performed passively in class as they tended to be anxious about answering questions. Some

(e.g. S2, S4 and S5) even considered their attitudes to be resistant to learning English. There was no evidence showing intrinsic motivation because many of them conceded they did not have any interest in learning English, and if possible, they would like to 'stay away from it'. Surprisingly however, they all appear to feel the need to improve their English grades, mainly for their future careers. However, they rarely self-studied English except to listen to a CD in response to the teachers' request, which is an example of extrinsic motivation, as they did not study it for their own pleasure or interest (Deci & Ryan, 1985). Meanwhile, they also expressed their helplessness when they admitted they could not think of ways of improving their grades even though some of them had 'tried their best'. Their poor academic performance was considered a symbol of the failure that augmented their sense of worthlessness and despair of learning the subject. This implies a lack of self-efficacy in acquiring linguistic knowledge, and lack of effective strategy use in their past learning experience. Though they described certain extrinsic motivations such as the fact that they knew they 'have to learn', they also showed a lack of awareness of strategies that would help them achieve this.

To sum up, the issues above illustrate characteristics of less successful learners which are relevant not only to learning in conventional classrooms, or to self-study situations, but also to self-directed learning in multimedia language learning environments. The discussion in this chapter is intended to serve as a baseline to help readers understand the profiles of these learners before they started working in multimedia environments. The information relating to such complex factors as their background, attitudes, motivation, self-confidence and strategy use, will form a point of reference when discussing the data collected in the longitudinal study.

## **Chapter 5**

### **INITIAL PERCEPTIONS**

#### **5.1 Introduction**

This chapter aims to explore the participants' perceptions regarding their impressions of and attitudes toward multimedia environments and non-multimedia factors (e.g. peers, the instructor, reflective activities) at the initial stage. Having examined the participants' impressions and attitudes at this stage, the data suggests a general profile showing changes of attitudes, self-confidence and motivation, as well as issues for discussion. Themes and patterns of how these participants perceived features of multimedia environments and other factors, and how their perception affected their individual traits will be explored in 5.2 and 5.3. Data discussed in Section 5.2 is mainly from the first part of the 2<sup>nd</sup> interview questions (See Appendix B) focusing on the learners' impressions of and attitudes towards multimedia environments. Section 5.3 mainly focuses on the second and third parts of the interview questions exploring how participants' impressions of and attitudes towards non-multimedia factors which were intended to facilitate learning, and how their perceptions affected their self-confidence and motivation. At the end of this chapter, I will summarise and discuss issues raised that require further attention.

#### **5.2 Impressions of and attitudes towards multimedia environments**

Themes and patterns emerged after the first few sessions, showing commonalities and variations among the participants' impressions of and attitudes toward self-directed multimedia learning environments. Meanwhile, different learners seem to hold particular attitudes formed by underlying factors, such as past learning experiences, learning needs and beliefs. Analysis of data from the interviews suggested that the participants generally were impressed by the multimedia environments in three ways.

First of all, the participants considered multimedia environments to be *engaging* for two main reasons. One reason is that the multimedia environments enabled them to take an active role in self-directing their learning. The participants considered taking initiatives to decide how and what to learn as crucial to motivating them to learn a subject they were not interested in.

For example, many participants (e.g. S1, S2, S3, S4, S5, S7, S8 and S9) indicated that they exercised their rights of '*control*' to choose materials or functions they liked and to '*interact*' with computers. More importantly, they appreciated the active learning processes, such as involved in selecting learning contents and adjusting their output according to the feedback from the computers, as they were in charge of the process. Being able to make such decisions rather than accept the teacher's decisions on content or pace was a novel experience to them and they show much willingness to initiate learning.

More vivid examples can be seen in statements from S1, S2 and S4. Comparing with learning and being corrected in conventional classrooms, they believed that being able to decide the learning process (e.g. by doing and being corrected), or choosing different help functions they needed, was more motivating to them. This allowed them to interact more effectively with the computers in multimedia environments. S5, for example, considered that being corrected by the computer was helpful as, to learn the lessons, she needed more practice and would know which areas to improve. S1 showed her appreciation of being able to use help functions (e.g. subtitles and recording) to choose which were more suitable for her to absorb the contents when she encountered difficulties comprehending authentic materials (e.g. movies).

Thus, they appeared to be engaged in an active, interactive learning process, which

they felt provided them with an advantage that they did not have in a conventional class. More importantly, this also suggests that the participants considered their need for interaction as crucial, which can be at least partly satisfied through engaging in learning self-directed multimedia learning environments.

Another factor that engaged the participants in learning is the great number of speaking or listening opportunities that were available to them in multimedia environments. Some participants strongly expressed a view that multimedia can satisfy their needs for practicing the two skills that they did not, or 'dare not' practise in a conventional class. S1 and S5, for instance, particularly appreciated listening practice in multimedia environments as, with help functions, they could understand what they heard. Such experience seemed crucial for them in reducing their fear of, or resistance to, learning the target language. In addition, they indicated that the authentic learning contents helped them get used to the language and easily and naturally involved them in the listening tasks. S2 and S4 also regarded the increased amount of speaking practice as beneficial, since they lacked such practice in conventional classes and so this lack of speaking practice could be 'compensated' for in self-directed multimedia environments.

In addition, the participants' impressions illustrate changed attitudes towards practicing speaking and listening. The data show the participants' strong interest and willingness to practice the skills they used to feel intimidated about. The process of interaction in multimedia environments not only alleviated their anxiety and fear but also engaged them in learning speaking and listening tasks. Hence, the control and interactivity features in self-directed multimedia environments encouraged learners to initiate learning through decision making. They also satisfied their learning needs

and stimulated intrinsic motivation, findings which are consistently identified in previous CALL research (Levy, 2006). As a result, several factors have obviously influenced the participants' impressions of multimedia environments as engaging and interactive, including the fact they allowed the learners control, met their learning needs (e.g. through interaction, authentic contents, and speaking and listening practice) and compensated for negative past learning experiences, e.g. pressure from the teacher-centred approach. The data further suggest that a great deal of intrinsic motivation was inspired through the learning process, as well as indicating changes in attitudes shown by comparing their past learning experiences. The following excerpts illustrate the first major impressions and changes in attitudes:

	<b><i>Impressions of and attitudes towards multimedia environments: Interactive &amp; engaging</i></b>
S1	I realized there was interaction (with computers)! I felt it was great because, at least, I could practice speaking and listening skills. For example, I can watch the subtitles and practice speaking while watching movies...I think using multimedia in learning is a lot better than classroom learning. There is interaction (with the computer) and I can speak, listen and compare what I say with the software to see what the difference is. (S1, Interview 2: 16/12/07)
S2	I think multimedia is more beneficial than in-class learning because students have things to do and they can truly learn something. ...This way, students can practice English more interactively. Besides, they also have chances to speak English, which compensates for the fact that we can't always practice speaking English. (S2: Learning Diary: 02/12/03)
S3	In the past, I listened to the tape or a radio program, Studio Classroom, assigned by the school teacher. And I did it regularly, but I always fell asleep while listening to it. With multimedia, I have never fallen asleep, maybe because there are frames and videos, which are not static like holding pens and books. I can actually use it and play with it. (S3: Interview 2:02/12/03)
S4	I felt motivated to learn English because the computer has interaction with me in every part. It has animations, sound and pictures. I prefer using role-play because it can correct me and interact with me. Comparatively, I can have more practice. (S4, Interview 2: 16/12/03)
S5	I felt I have learnt quite a lot, particularly listening. In the past, we only used textbooks in class without much practice in listening. Now I feel there is obvious improvement with my listening abilities. I found I could mostly understand what I heard. (S5, Interview 2: 19/12/03)

Secondly, a major impression is that the learning experience was *relaxing* and the data show two reasons which contributed to this impression. The first is that pressure from teachers and peers was greatly reduced due to the learner-centred learning

process. Some participants indicated that 'facing a machine' was an advantage in a multimedia environment in that it offered a personal space which is not judgmental. As the participants mentioned their anxiety about speaking in class and their concerns regarding low grades or unsatisfactory performance, without pressure from negative comments or grades, they appeared to be encouraged to practice as much as they needed.

Thus, without being concerned about grades and comments from teachers or peers, pressure was naturally decreased even while making mistakes or being corrected by computers. As participants (e.g. S1 and S5) vividly described, multimedia environments helped them "conquer fear" as they could "keep practicing until getting it right". More specifically, while making mistakes or being corrected, they would not be anxious about negative comments. Because they were facing computers, they could speak as much as they needed to without fear and anxiety. Their concerns also demonstrated their anxiety and low self-confidence, which is consistent with the assertions of Horwitz *et al.* (1986) that certain types of classroom activities may promote language anxiety, particularly those that expose the learners to negative evaluations by teachers or by peers. Consequently, multimedia environments encourage learners to learn through reduced 'exposure' to the risk of negative judgments from the teacher and peers, as S1 pinpointed her feelings of relief while facing the computer (e.g. "With the computer, it is dead anyway"). Thus, this showed that pressure was reduced and self-confidence was fostered as participants could obtain the necessary practice without the "threat" of criticism.

Furthermore, the other reason is that being able to control the learning pace and content is relaxing, which may have somewhat relieved the students' anxiety so enabling them to be more focussed on the learning task. In particular, controlling the amount of practice motivated the students to keep practicing and to master the learning content, which in turn built up their self-confidence to a certain extent. S1, for example, emphasised that the multimedia environment allowed her as much practice as she needed, as she said, "If I did not do it well, I could just keep practicing till I get it right". This also implies that practice with computers was less stressful as they tolerated the mistakes learners may make, which in turn led to her willingness to persist in the challenge till she 'gets it right'.

In addition, controlling the learning pace appeared to alleviate the pressure the learners felt and maintain learning motivation. According to the data, for the less successful participants who are low-achievers, keeping up with the teaching pace in class and understanding the gist of the lesson seemed to be a struggle that caused a lot of anxiety. S5, for instance, described her struggles and anxieties in class by saying that the low-achievers like her "strive to take notes nervously or try hard to figure out what the teachers say". The ability to control the pace of learning in multimedia environments relieved a lot of the pressure and reduced the worry of not being able to follow the teacher's pace. Therefore, using computers encouraged more motivation, because, as the following excerpts show, control over their learning processes seemed to encourage greater confidence in the participants:

	<b>Impressions of and attitudes towards multimedia environments: Relaxing</b>
S1	Maybe it was because of grades. Somehow there were always poor grades after learning. It seemed that everyone spoke very well except me. It was humiliating for me to speak in public. My grades were always very poor which made me feel more embarrassed (to speak in public). <b>With the computer, it is dead anyway. If I did not do it well, I could just keep practicing till I get it right.</b> (S1, Interview 2: 16/12/03)
S3	Comparatively, I was not nervous, maybe because there was nobody beside me. I cared about others' (opinions) very much. While learning English with multimedia, others could not see me making mistakes so that I did not feel embarrassed. That's the best thing, because there was no pressure anymore. Also I did not feel sleepy while learning English. (S3, Interview 1: 16/10/2003)
S4	...interacting with computers is fun though they (the computers) often told me my pronunciation was not standard. That is OK. At least, I got more chances to talk, which I would not dare to do in a conventional class. Here what I am facing is a machine, not a teacher. Also, because it is one-to-one, unlike the classroom with so many people, I dare to practice as much as I want because no one will laugh at me anymore. (S4, Learning Diary: 15/10/2003)
S5	My impression of multimedia is that it is not so hard and boring, mainly because of using computers. It is not like the way teachers teach in class, where they keep talking all the time on the stage and students sit nervously below and try to take notes or are trying hard to figure out what the teachers say. With multimedia, you can dictate your learning at your own pace. (S5, Interview 2: 19/12/03)

The last major impression is that multimedia environments were perceived as fun and interesting for a number of reasons. One is that, with the multiple media involved, the design of the interface is attractive, and has real-life and lively contents. With a combination of texts, video, photo images, sound, and graphics, such authenticity impressed participants, who could be immersed in real situations by listening to a foreign accent and intonation, and viewing body language. Many participants asserted that they appreciated this and felt more interested in learning compared to using the printed materials. For example, S3 showed a high level of learning interest by saying "I have never fallen asleep, maybe because there are frames and videos"; S4 criticized the printed materials as "dead" and suggested the contents in multimedia were "alive" with animation, sound and films; S5 thought the sound and films in multimedia were interesting and not boring, which motivated her to "get used to the foreign accents because there are usually real foreigners talking in the films".

Another reason is that some participants praised the practicality and fun of the

software contents in that they can apply them in daily, real-life situations. Again, they compared the usefulness of learning materials in class and in multimedia environments and appreciated the latter as it seemed to satisfy their learning needs. As a result, the learners tended to be more willing to devote their time and effort to studying the target language, one of reasons being the practical contents in the multimedia, as S4 said, "Comparatively now, I find I am more willing to learn English through multimedia. The contents are great and I like most of the topics".

Lastly, the process of interacting with computers was regarded as fun and effective. The feedback from computers provided an interesting and impressive way for participants to learn without fear and pressure. Interestingly, most participants seemed to hold fairly positive views about the mistakes they made in multimedia environments, which were not as frustrating as when they made mistakes in class. Meanwhile, during the playful learning process with its game-like atmosphere, they considered being corrected by computers as a helpful means to show them how to improve their English. For instance, S1 pinpointed the fact that there was no pressure, but that it was fun, facing the mistakes she made. It helped her by deepening her understanding"; S4 considered it "ok" when computers told her that her pronunciation was not standardized, as it was fun; S2 emphasised the fact that she still did role-play regardless of her difficulties in understanding the contents. Obviously, the safe and fun atmosphere fostered positive attitudes towards feedback and persistence despite the problems they encountered.

To summarise, the data shows that the fun element encourages learners to persist in dealing with challenges. The process of interacting with computers enhanced their positive thinking and reduced their frustrations and pressure. According to the data,

the participants appeared to change their attitudes, in that, although they had considered themselves incompetent learners in the past, they now seemed less negative about making mistakes which, previously, they felt they might be humiliated by or blame themselves for. In self-directed multimedia environments where the less successful learners do not need to consider extrinsic reward or punishment, they seemed to gradually develop self-confidence as they tended to be more positive in regard to errors and were more willing to take risks. Because of the non-threatening feedback from the computers, the learning processes involved in human-computer interaction encouraged the learners to make repeated attempts until they succeeded, which in turn stimulated more intrinsic motivation to tackle the tasks. Thus, several factors have been identified which contributed to participants' motivation and self-confidence, including the multimedia features (i.e. multiple media, interactivity and control) and software contents.

	<b>Impressions of &amp; attitudes towards multimedia environments: Fun &amp; interesting</b>
S1	<p>I used recording. Though I did not hear my voice clearly, I still recorded it happily. Though I was afraid of being laughed by others when I spoke, I still did it extremely loudly. I did tests today. <b>Though I made many mistakes, I felt it was fun. This could deepen my understanding of the words.</b> (S1, Learning Diary: 21/10/2003)</p> <p>My impression of multimedia is that it is fairly fun. This way makes me want to learn English because there is more interaction and I can speak English. I mean I can say something and do the role-play. It was the most interesting part while learning English (in multimedia environments). I can practice speaking as I wish. It is much better than reciting textbooks. Recording was also great because I could hear my poor English. <b>That's fun. I do not feel any pressure.</b> (S1, Interview2: 16/12/03)</p>
S2	<p>I watched the comedy today...although I had checked the Chinese translation, I still did not quite understand what it said. <b>But I still practiced the dialogues by playing every role. It was so fun.</b> And I found my English was absolutely rubbish, rubbish and rubbish (six times)...However, I used it so happily today. It was my first time speaking so much English in one go. It was a shame that the time was so limited. (S2: Learning Diary: 14/10/03)</p> <p>The multimedia makes me more interested in learning English. I can learn it through watching movies, ads or animations, which is so much fun. I feel like learning it when I have more interest (S2, Interview2: 16/12/03).</p>
S3	<p>In the past, I listened to the tape or a radio program, Studio Classroom, assigned by the school teacher. And I did it almost everyday, but I always fell asleep while listening to it. With multimedia, <b>I have never fallen asleep, maybe because there are frames and videos, which are not static like holding pens and books. I can actually use it and play with it. Every time I always start with watching films that are more interesting.</b> (S3: Interview 3:20/05/04)</p>
S4	<p><b>Multimedia is very interesting.</b> It is not as boring as printed magazines because there is sound and films. Comparatively, I have more desire to learn English using multimedia. The contents are great and I like most of the topics. In addition to that, <b>interacting with computers is fun though they (the computers) often told me my pronunciation was not 'standard'. That is OK</b>(S4, Learning Diary: 15/10/03)</p>

S5	Using multimedia to learn English allows me to <b>get used to the foreign accents</b> because there are usually real foreigners talking in the films. Then it seems easier to follow when we listen to other dialogues in daily life. (S5, Interview 2: 19/12/03)
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As mentioned before, through exploring participants' impressions of and attitudes toward multimedia environments at the initial stage, the impact of various factors affecting self-confidence and intrinsic motivation have been identified. In particular, it has been found that the three multimedia features (i.e. interactivity, control and multiple media) had a significant effect on enhancing learners' intrinsic motivation, as certain sources of language anxiety diminished and some of the pressure was reduced. This finding echoes previous researchers' assertions (Brett, 1998; Horwitz, 1986; Levy, 2006). The analysis of the participants' various reasons suggest that a complexity of multi-layered factors contributed to their impressions and changed attitude at this stage. In the next section, I will discuss the participants' perceptions of non-multimedia factors and how these affected their motivation and self-confidence.

### **5.3 Impressions of and attitudes towards non-multimedia factors**

In this section I attempt to investigate participants' impressions of and attitudes towards the facilitating factors in the setting including the presence of other participants (i.e. peers and the instructor) and reflective activities (i.e. diary-writing and debriefing). My aim is to examine how the participants' self-confidence and motivation were affected due to the non-multimedia factors. The following discussion is divided into two parts, one focuses on participants' reactions to other participants and the instructor, and the other focuses on reflective activities. The factors involved in this will also be elaborated on further.

First of all, the presence of peers seemed to inspire positive attitudes in most participants. Instead of the competitiveness they described in on the conventional learning environment, in multimedia environments there was a cooperative and supportive atmosphere that encouraged participation. For instance, S1 and S2 considered that 'seeing others are learning' stimulated their own willingness to learn. S2 and S4 indicated that they could obtain more "power" and "become more active" to "fight the battle" together with a group of people. Some participants conceded that, though they appreciated the control obtained during the individual learning process, they still preferred to self-study with a small group of people. This implies that the presence of peers provided a sense of community which helped motivate the learners in self-directed multimedia environments.

Interestingly, it is noteworthy that the data illustrates the extent to which the participants depended on their peers, and their lack of confidence in studying alone. Learning with peers seems to enhance confidence and learners become more willing to attend this type of study. Most participants held pessimistic views regarding their willingness to continue this project alone without peers, for example, S1, and S5 thought they might 'keep postponing learning' if they learnt alone at home. S2 and S4 pointed out that they will be 'too laidback' which would impede learning if they learnt alone. It seems that the factor of their past experience of failure contributes to their lacks of self-confidence and to doubts about their determination to persist in studying. They appeared to have high expectations of learning with peers as this offered a strong motivational 'force' and sometimes 'constraint', which helped sustain their willingness to continue learning. Through learning with a group of people who have a similar goal, such *scaffolding* (Vygotsky, 1978; Wood *et al.*, 1976) apparently

fostered confidence as they believed they can achieve their goals together. The impact of peers on the less successful learners' motivation and self-confidence in continuing learning proved to be particularly crucial at this stage, providing strong support for the sociocultural view, which sees learning as social (Mitchell & Myles, 2004; Vygotsky, 1978).

However, peer presence also led to some extent to anxiety and pressure for some participants who still suffered from strong anxiety symptoms and negative learning beliefs about such peer presence. In particular, peers were regarded as 'competitors' as some learners indicated their concerns and worries about being noticed by others. They reported difficulty in speaking loudly enough while recording as they had to cover their mouths to speak "quietly" to avoid been heard by their peers. It seemed that they lacked confidence in their performance and considered peers as competitors as they did in conventional teacher-directed classes.

In some cases, pressure from peers seemed to be reported just in the first few weeks. However, for some participants, the pressure lasted longer, until the end of the first semester, and they conceded that they preferred to study alone without peers as they still felt pressure from them. S3 and S5, for instance, felt particularly anxious and self-conscious, as they claimed they paid much attention to what their peers were doing. It was particularly intimidating to them when practicing speaking. According to my observation field notes, S3 and S5 tended to become 'observers' who often checked what others were doing. S5 confirmed these concerns and whilst at the same time admitting there were more advantages in learning with peers than disadvantages in the presence of peers. In particular, S3 was especially worried and

showed her discomfort with the presence of peers, as she assumed “others might hear her speaking if she could hear others speaking”. Therefore, this implies that low achieving learners who are particularly anxious regarding the presence of peers might feel threatened and less confident initially due to past failures and negative learning beliefs which negatively affect their willingness to undertake certain kinds of language tasks they are not confident with. More details will be discussed in the next chapter.

Consequently, as discussed above, the impact of peers on learners’ self-confidence and motivation is complex and multi-dimensional. The presence of peers could serve as scaffolding to enhance motivation, though it could also be threatening. The factors of individual’s learning beliefs and FL anxiety symptoms could not be ignored.

	<b><i>Impressions of &amp; attitudes towards peers</i></b>
S1	<b>When I see other classmates learning, I feel like learning it too. I will probably leave it still without touching it for a half year if I learn it (alone) at home. It is like a force to drive me to come if I learn it together with others. Although each person uses her own software at a different computer, comparatively I feel want to come when I see others are learning. I feel this way is much better than learning alone (S1, Interview2: 16/12/03).</b>
S2	<b>I may be too layback as I tend to relax and take my time. If I have to learn with others, I would become more active and I would not delay things as I do. There is no pressure in multimedia if nobody gives me any grades (S2, Interview2: 16/12/03).</b>
S3	<b>If I have choices, I would choose to learn multimedia by myself. I felt that learning with many people together has no advantages. Besides, I don't dare to speak English (in the lab). I usually pay attention to others. Even when they don't notice me. I still could hear their voice and I would know who was practicing. It made me feel some pressure, the pressure of practice. There is pressure when I practice. There is pressure when I want to speak (S3, Interview2: 16/12/03).</b>
S4	<b>I am really lucky because, if I study (the software) alone, I am like ‘fighting the battle’ by myself. If I am with a group of people, I would be more willing to make an effort together. If it is just software I would tell myself to do it tomorrow. Joining with others, I won't think of delaying it. That's why I am happy to participate in it (S4, Interview2: 16/12/03).</b>
S5	<b>Sometimes I am a bit nervous. Although I hope to have some time studying together with others, I also hope to lock myself in a small room without others, like in the dorm (to study alone). This way, I can practice speaking relaxingly. However, with others studying together, there are constraints. If I am alone, I might think I feel tired now and I can study tomorrow. Then time flies away quickly. Besides, since I have promised the teacher, I feel responsible. Then I have to go there. I can't waste time and I must study hard (S5, Interview2: 16/12/03).</b>

As for the influence of the instructor, most participants considered it intimidating. They indicated there was pressure initially due to the possibility that the instructor would criticise them. For example, S5 indicated she would 'suddenly freeze' as soon as she saw the shadow of the teacher on her monitor (i.e. the teacher stood behind her). S1 and S2 said that they felt "too nervous to speak a word" if they realised that the teacher was near them. Their concerns again showed their anxiety symptoms and low self-confidence as participants indicated they 'still had no abilities to express them well' (if the teacher asks them questions) or felt embarrassed if the teacher corrected them. Thus, the presence or interaction with the instructor seemed inhibiting to their learning, as the participants were concerned that there would be consequences when they performed poorly in front of the instructor. As a result, initially the presence of the instructor posed certain threats, particularly when the learners still had such fears and considered the instructor as an authority.

Nonetheless, regarding the instructor as an authority, to a certain extent, enhanced their extrinsic motivation to sustain their willingness to learn and join this study, which also showed their responsible attitude toward the instructor. One participant (i.e. S4) mentioned that the instructor could motivate her to take part in this research study because to her, it was "a promise to the teacher". To keep her promise and show her respect, she was willing to continue to participate in this research. In addition, the instructor in multimedia environments served as a source of reference and a problem solver, which affected the motivational quality of the learning process. To some extent, the instructor provided a sense of security, i.e. the support and guidance provided by the instructor helped the participants solve problems or avoid humiliation from peers. S5, for instance, indicated that assistance from the instructor

helped her avoid embarrassment and the risk of “being known as an incompetent member”. Clearly, social motivation seems crucial as the role of the teacher functions as an ‘emotional amplifier of the group whose appeals and examples are critical for mobilizing the group’ (Jesuino, 1996:115, cited in Dörnyei, 2001). Meanwhile, such a multifaceted, motivational influence on the part of the instructor shows the social practice involved is fluidly complex, affected by individual learning beliefs and self-confidence.

	<b>Impressions of &amp; attitudes towards the <i>instructor</i></b>
S1	<b>There was pressure at first when the teacher was walking behind me.</b> Later, I did not notice it if I did not pay much attention to it. I am not sure whether there is any help when there is a teacher. It is all right as long as the teacher does not keep watching me. I am a bit anxious and I cannot say a word if the teacher is standing next to me, as I still have no confidence expressing myself in front of the teacher. (S1, Interview2: 19/12/2003)
S2	<b>I would not be able to speak at all if the teacher is near me.</b> The teacher makes no difference. As long as I know she is not around me, everything is fine. (Why?). If the teacher stands next to me, there will be pressure when I speak English. I am worried I won't speak well and I am afraid that the teacher might correct me. And that is shameful! (S2, Interview2: 19/12/2003)
S4	If I am alone, I might think I feel tired now and I can study it tomorrow. Then time flies away quickly. Besides, <b>since I have promised the teacher, I feel responsible.</b> Then I have to go there. I can't waste time and I must study hard. (S4, Interview2: 19/12/2003)
S5	There would not be much pressure if the teacher kept walking around. But as soon as I saw that shadow (of the teacher) stopped on my monitor, I simply froze there.”... However, sometimes I feel having a teacher walking around is not bad. I can quietly talk to the teacher if I come across problems. Then I do not need to raise my hand to ask (the teacher), as everyone will know (I have problems). (S5, Interview2: 19/12/2003)

In terms of the facilitating activities, most participants demonstrated positive impressions of debriefings and for diary writing. In particular, they considered the debriefings provided many benefits. For example, exchanging information helped them reflect or review the learning contents and processes, including vocabulary and phrases, the problems, useful functions and so on. Also some participants gained technical help from discussion with others. More importantly, some indicated that sharing problems and experiences helped reduce frustration and gave them much emotional support.

Thus, they seemed to be more receptive towards mistakes they made rather than self-blaming, which helped enhance their self-confidence. S4, for instance, thought listening to others sharing problems was fun, which comforted her when she knew others also had the same difficulties as her. Some indicated that the debriefing helped them define goals, and stimulated their motivation and interest in trying new software or functions. For instance, S1 appreciated the debriefings and said, “I would want to try the different software others used”; S2 liked the debriefings as she learnt to improve her learning methods. Consistent with Vygotsky’s theories, the above data show *collective scaffolding* (Donato, 1994:51) as “learners are considered as a source of knowledge in a social context”. Through discussion with peers as “collaborative and knowledge-building dialogues” (Swain, 2000), this support helped the participants reflect on their problems, needs and goals during the self-directed learning process and master their technical control over multimedia environments.

In contrast to some of the positive impressions, however, some learners indicated the difficulty of reflecting on ideas during the debriefings, as they did not seem aware of their learning process. This might be related to their self-confidence and learning experience, as cooperative learning (e.g. reflecting and sharing ideas) is not common in their past experience (e.g. teacher-directed conventional classes). For instance, S2 was not confident about how much she could contribute to the discussion. She felt anxious when she realised “there is not much to say” because she was worried that she did not learn as much or as well as others. S4 did not seem to appreciate the debriefings as, on the one hand, she had doubts about the credibility of others’ comments, while on the other hand, she considered (or somewhat blamed) other for comments that she felt were distracting, as a result of which she followed suggestions

and “changed software randomly”, causing some difficulties for her.

	<b><i>Impressions of &amp; attitudes towards the debriefings</i></b>
S1	We learnt from each other's experience during the final discussion. As everyone used different software, we talked about the good or bad parts, the useful stuff or fun parts, or what we learnt or played today including the problems with the software. For me, <b>I would want to try the different software others used</b> (S1, Interview 2: 19/12/03).
S2	The debriefing is quite a good idea. I would know what others' learning methods are. Then I can learn from them and improve my methods next time. <b>But I always feel others can say a lot. How come I don't have much to say?</b> It seems that I didn't learn much even when I had studied hard. I don't know what to say actually. <b>I am really afraid there is not much to say</b> (S2, Interview 2: 19/12/03).
S3	I usually forget what we discussed when I come the next time, as we all use different software. It might be more effective if everyone uses the same software and discusses the functions afterwards. Then it is not very necessary to discuss it if we use the same software. <b>I always try the new software others recommended but sometimes it is not much better.</b> Besides, I changed software randomly at every session. <b>Sometimes I did not talk much during the debriefing. I don't know what to say</b> (S3, Interview 2: 19/12/03).
S4	The debriefing is quite interesting because all of us share our own experience. I found it is very helpful to talk about the difficulties we came across while using certain software. <b>It is fun to know others also have similar problems. The debriefing helped me review what I have learnt as I also share my own experience</b> (S4, Interview 2: 19/12/03).
S5	<b>The debriefing lets me have a direction for the next learning session.</b> For instance, some may say certain software was fairly good. If I have used the same software before and haven't noticed some functions she mentioned, I would try it again using a different approach that others have suggested next time. Also, we exchanged information and ideas. We scolded or complained about the same software by saying how '****', '*****' and 'difficult' it was (S5, Interview 2: 19/12/03).

	<b><i>Impressions of and attitudes towards diary writing</i></b>
S1	<b>Writing the diaries helps me think carefully about what I have learnt at that day. I usually would think about what I want to learn the next time.</b> I also have to think seriously about the questions the teachers asked and then answer them. I feel that I am learning English in the way I like, instead of studying only for the 'beautiful grades'.
S2	<b>The diaries help me set a goal. At least, I would know what I want to learn the next session.</b>
S3	<b>The diary writing helps me think about “what am I doing on earth?”</b>
S4	I think writing diaries is a kind of insight. However, I always forget it to do it each day, S3 always reminded me. <b>Writing diaries makes it much clearer what I am learning. Besides, I would notice I am actually using the same kind of method in learning.</b>

To summarise, participants' impressions and attitudes demonstrate the complex influence of non-multimedia factors on motivation and self-confidence. Most participants held positive views on the influence of peers and the reflective activities. In particular, peers stimulated a sense of community and promoted self-confidence and motivation. The presence of instructors appeared to pose threats for most learners when regarded as an authority. However, different views were expressed about the presence of instructors and peers. It seems for those who still held negative learning beliefs about the instructor and fears of negative comments from

peers, they tended to feel particularly anxious and threatened. Considered as authorities, the presence of instructors in turn provoked tension and affected learners' confidence and willingness to practice speaking. As a result, the impressions of and attitudes towards the presence of peers and the instructor reflected participants' concerns and worries originating from their previous learning experience. In terms of their impressions of and attitudes towards reflective activities, such as debriefings and learning diaries, the participants show mostly positive attitudes though there were certain concerns.

#### **5.4 Summary and discussion**

This chapter intends to answer the first research question which asks how less successful learners initially perceive self-directed multimedia language learning environments and non-multimedia factors as well as its impact on individual traits. Two specific themes have been examined. One is the participants' initial impressions of and attitudes toward multimedia environments and the impact on individual traits. The other is the initial impressions of and attitudes toward other non-multimedia factors (e.g. peers, the instructor, reflective activities, etc) and the impact on individual traits, as showed in Table 5.1 and Table 5.2. I will summarise and discuss the findings in the following sections.

Firstly, the data suggest a general tendency for most participants to hold positive impressions and attitudes towards multimedia learning environments and to consider the learning process engaging, relaxing, and fun. It was found that their perceptions seemed closely associated with their learning beliefs, which were affected by their previous learning experience. The variation of reasoning behind the general

**Table 5.1 Overview of the Participants' Initial Impressions of and Attitudes towards Multimedia Environments**

	(1) Interactive/engaging	(2) Relaxing	(3) Fun/ Effective	(4) Worried and FL symptoms	(5) Contrast with conventional classes
S1	<ol style="list-style-type: none"> <li>1. More opportunities to practice speaking and listening. Her definition of interaction.</li> <li>2. Be involved in learning by choose different help functions and self-correct.</li> </ol>	<ol style="list-style-type: none"> <li>1. No pressure from teachers and grades</li> <li>2. Learn with computers without losing faces</li> <li>3. Practice with computers as much as she needs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Making errors and getting feedback are fun.</li> <li>2. Remembering words by being corrected, listening and speaking more.</li> </ol>	Although being afraid of being laughed at, she still tried speaking loudly.	<ol style="list-style-type: none"> <li>1. No interaction between teachers and students.</li> <li>2. Teachers and peers give pressure.</li> <li>3. Embarrassed &amp; self-conscious by speaking in class. Don't dare to speak English.</li> </ol>
S2	<ol style="list-style-type: none"> <li>1. Students can truly learn by doing.</li> <li>2. More speaking practice with no pressure or worry.</li> </ol>	Not worry about doing poorly but enjoying practicing speaking.	<ol style="list-style-type: none"> <li>1. Software is fun (sound and film), practical (more useful topics) and free (she can decide to start the parts she likes).</li> <li>2. The learning process is fun and enjoyable.</li> </ol>	Worried about poor pronunciation but still practice happily.	<ol style="list-style-type: none"> <li>1. Textbooks are dead. (Contents are boring.)</li> <li>2. Lack of interaction in class.</li> </ol>
S3	Involve in learning due the process is fun.	Not nervous because no nobody beside her and no one will see her making errors. No pressure.	<ol style="list-style-type: none"> <li>1. Authenticity</li> <li>2. Practical contents</li> <li>3. Easier to understand with sound and films.</li> </ol>	Being an observer. Very aware of peers.	<ol style="list-style-type: none"> <li>1. More pressure. Self-conscious. Afraid of making mistakes.</li> <li>2. Mostly listen to teachers talking.</li> <li>3. Falling asleep quickly.</li> </ol>
S4	Being corrected and using role-play gives her more speaking practice. (Her learning needs)	<ol style="list-style-type: none"> <li>1. Being told to improve pronunciation is "OK".</li> <li>2. Facing a machine, the learning process is relaxing as no one will laugh at her.</li> </ol>	<ol style="list-style-type: none"> <li>1. The contents and topics are interesting.</li> <li>2. Interactive functions (role-play) are fun.</li> </ol>	<ol style="list-style-type: none"> <li>1. A little pressure from not speaking well enough.</li> <li>2. Pronunciation is not good enough.</li> </ol>	Not dare to speak English in class.
S5	Having more listening. (Her learning needs)	<ol style="list-style-type: none"> <li>1. Learning in her pace.</li> <li>2. Overcome fear of speaking.</li> </ol>	Improving listening.	<ol style="list-style-type: none"> <li>1. Speaking is still very hard.</li> <li>2. Being an observer. Don't dare to practice speaking at first.</li> </ol>	<ol style="list-style-type: none"> <li>1. Trying hard to catch up teachers' pace.</li> <li>2. Have difficulties to figure out what teachers' main points.</li> </ol>

**Table 5.2 Overview of Impressions of and Attitudes towards Non-multimedia Facilitating Factors**

	Peers	Instructor	Debriefings	Writing diaries
S1	<i>Make her feel motivated to learn.</i>	<b>Make her feel anxious, stressful and not confident when the instructor was near.</b>	<i>Informative and motivating to use different software</i>	<i>Helpful to review learnt contents, set targets, cultivate learning interest.</i>
S2	<i>Help her become more active and motivated to learn.</i>	<b>Makes her feel stressful, threatened and not confident when the instructor was near. Worried and feeling shameful once being corrected.</b>	<i>Help gain different learning methods.</i> <b>Worried about not learning much as others and not knowing what to say.</b>	<i>Helpful to set goals and gain learning directions for the next session.</i>
S3	<b>Feeling stressful and intimidating while learning with the presence of peers</b>	No comments	<b>Don't think debriefings are very effective or beneficial. Might lead to random use of software. Not knowing what to say.</b>	<i>Reflective and gaining the sense of directions.</i>
S4	<i>Help her become more willing to make efforts together with a group of peers. Sense of community maintains her motivation.</i>	No comments	<i>Sharing experience is helpful to solve problems and to review learnt lessons.</i>	<i>Become more aware of learning directions and methods.</i>
S5	<i>Help her become more motivated to learn but a bit nervous about the peers.</i>	<b>Feeling threatened and stressful when the instructor was near. The instructor was helpful solving problems, avoid losing face &amp; maintain motivation.</b>	<i>Gaining emotional support, learning directions and motivation to try new software, functions or methods.</i>	No comments

Notice: The parts in **bold** denote negative comments. The parts in *italics* denote positive comments.

impressions denotes different learning beliefs the participants brought to this learning context and apparently affected how they interpreted or reacted to multimedia features. In addition, through constantly comparing the multimedia experience with their previous learning attitudes and impressions (e.g. passive, reluctant, anxious and uninterested, etc) in conventional classes, they demonstrated much awareness and appreciation of the advantages multimedia environments can offer.

In terms of the impact on their individual traits, the data revealed multimedia features (e.g. multiple media, control and interactivity) and lively learning content contained in the software (e.g. daily conversation, news, comedy) positively influenced participants' attitudes and intrinsic motivation as they showed a great level of interest and willingness to initiate learning and control over the self-directed learning process. It is noteworthy that the participants put much emphasis on a sense of safety and regarded it as a great benefit in the self-directed learning process, as it allowed them to construct their knowledge and explore the environment with few concerns. This implies that interacting with computers in multimedia environments was non-threatening, which was likely to relieve their anxiety symptoms. Without the threat of negative feedback, the elements of pleasure and safety in human-computer interaction appeared to nurture their interest, self-confidence and willingness to learn the target language. For example, some participants indicated that making mistakes was fun and that the process of learning from errors or feedback from computers was impressive and effective. Therefore, this suggests the human-computer interaction at the initial stage indeed changed their attitudes and engaged learners in learning conditions that support active, collaborative, autonomous and experimental and learning processes.

These findings at this stage support the assertion made by some researchers that multimedia is an optimal learning environment (e.g. Egbert & Hanson-Smith, 1999; Levy, 2006; Rüschoff & Ritter, 2001). More importantly, researchers have claimed there is a need for further studies to investigate in more detail how the interactive features affect learners (Pusack & Otto, 1997), and these findings provide some of those details. The results at this stage provide a contextual understanding in terms of how the students' learning beliefs were affected by their initial perceptions of self-directed multimedia environments and how the contrast these less successful learners perceived between the learning environments (compared with their previous learning experience) may have contributed to the positive impact on their intrinsic motivation, self-confidence and attitudes towards learning.

Secondly, the participants' impressions of and attitudes towards non-multimedia factors are multifaceted, suggesting that again, individual learners' beliefs and previous learning experiences affect their interaction with peers and the instructor, and their learning behaviours in multimedia environments. In particular, the presence of peers and instructors can sometimes cause two extreme effects on learners' motivation and self-confidence. For instance, some participants contended that the presence of peers or the instructor increased their extrinsic motivation or gave them 'power' or 'constraints' that led them to continue learning. However, the pressure, anxiety or threats from peers or the instructor also affected their willingness or performance in particular kinds of practice (e.g. speaking). In some cases, when the instructor was regarded as an authority (e.g. someone who might correct their errors), the presence of the instructor in turn had a negative impact on the learning process, attitudes, and their motivation and self-confidence. For instance, they

reacted with self-consciousness and nervousness, or even reluctance to speak, to the approach of the instructor who walked around the computer lab and observed students.

Nonetheless, the learners acknowledged their lack of self-confidence and determination to self-regulate their learning and as a result, they also appreciated the presence of 'the teacher', as it provided 'control' to regulate their attendance in this project. Interestingly, the presence of peers could also be regarded as an incentive to encourage the learners' participation. A sense of community seemed crucial to sustaining their motivation to continue learning. For example, some contended that it helped them 'work together as a team' and others indicated that it encouraged them to persevere with their active involvement in learning. The impact of peers indicates the learners' needs to belong to a group and that sense of community in turn developed their identity and commitment to participate in this self-directed learning project. Thus, the findings suggest that the perceived multiple roles of peers and the instructor critically affect the learners' intrinsic and extrinsic motivation, and learning attitudes in self-directed learning environments.

In addition, the data show that the participants considered reflective activities (e.g. debriefings and learning diaries) to be beneficial to their learning in two ways. One is that the reflective processes (e.g. describing how they learnt in each session, sharing similar problems or learning methods) raised their awareness of their learning process, including problems encountered or methods used in each session. The process of discussion and self-report also urged them to self-monitor what and how they learnt. The other benefit is that interaction with peers or the instructor served as a resource that provided them with guidance, support or information that they needed. Though

the data suggest a mostly positive impact of the reflective activities on the participants' learning motivation, the process of human-human interaction also caused concerns. For example, some participants (S2, S3 and S5) who were not used to self-monitoring their learning process or verbalizing it within a group found the reflective activities caused difficulty, embarrassment, tension, or threats to their self-confidence.

In brief, the participants' initial perceptions of non-multimedia factors suggest a mostly positive and multi-dimensional impact on the participants' motivation and self-confidence. More importantly, how the participants perceived their peers and the instructor is complex and sometimes controversial, and was mostly linked to individual learning beliefs and the effect of previous learning experience on their self-confidence. The existence of multiple roles fulfilled by the peers and the instructors denote a complex human-human interaction involvement and raise concerns about the use of non-multimedia factors to facilitate the learning of self-directed learners. From a sociocultural perspective, scaffolding from the peers, the instructor and the reflection on activities, are assumed to provide mediation to their self-directed learning and help learners reach self-regulation in the ZPD (van Lier, 1996; Vygotsky, 1987). However, the findings suggest that interaction with others at the initial stages also caused concerns because of the learning beliefs each individual brought to the learning context.

Furthermore, the findings suggest that the participants experienced a transition of roles at the initial stage. This is consistent with previous research concerning learners' readiness for self-directed language learning (Gardner & Miller, 1999). It was found that the interaction with peers and the instructor may cause a negative

impact when they are not ready for their changing roles. In this study, for instance, the learners seemed not to be prepared or to have the self-confidence to accept their new roles as they were aware of their lack of ability confidence and determination to learn autonomously as well as the need of scaffolding from others (e.g. peers and the instructor) to assist their learning. Such a transition can be a struggle for some learners as they adjust to their new roles and try to competently take control of the learning process. Thus, *guided participation* (Rogoff, 1990) or *scaffolded help* (Donato, 1994) in this learning context may also lead learners to feel threatened if they are not prepared or do not have the self-confidence or motivation. At this stage guided participation or scaffolded help should be employed with caution and take the participants' learning beliefs into consideration.

In summary, the learners' initial perceptions of multimedia environments and non-multimedia factors have been explored. The positive and mixed impressions and attitudes confirm self-directed multimedia learning as a complex social practice in which learners are involved in interaction with the context, learning tasks, the learners and others (e.g. the peers and the instructor). The findings in this chapter provided a starting point for the study and raised concerns about some factors that appeared to have a multi-faceted impact on the participants' motivation and self-confidence. It is worth exploring further how the different factors affect their learning after the initial stage. Therefore, in Chapters 6 and 7, I shall explore the problems and challenges the participants may encounter after the initial stage, discuss how they coped with them and compare the results with the findings reported in this chapter. It is expected that this will contribute to a deeper understanding of self-directed learning processes in multimedia environments.

## Chapter 6

### EMERGING PROBLEMS AND CHALLENGES

#### 6.1 Introduction

The previous chapter explored the participants' initial impressions of and attitudes toward multimedia environments and other non-multimedia facilitating settings. The data demonstrates the expected positive reflections, though variations exist. The participants' learning beliefs and previous learning experience seemed to be reflected and the two types of social interaction, human-computer and human-human, are involved. The different voices and concerns show the importance of examining participants' learning needs, beliefs and expectations. Also, the findings suggest that the self-directed learning processes in multimedia environments at the initial stage are complex, as multiple factors can affect learners' motivation and self-confidence.

In this chapter, the focus shifts slightly to the emerging problems and challenges the participants encountered in this study. Previous research indicated certain issues related to the learners' abilities in adopting various multimedia features, such as selecting appropriate authentic materials, using help functions properly or gaining deep learning through interaction with the computers (see Chapter 2.5.2.2). However, the actual process and the factors that contribute to the concerns are not clear (Pusack & Otto, 1997). Especially for less successful learners, who are often inexperienced in strategy use or lack metacognitive knowledge (Wenden, 2001), how self-directed multimedia language environments facilitate learning or pose more challenges is requires further research. Therefore, focusing on the above issues, this chapter identifies themes related to the emerging problems and challenges. An in-depth examination analysing data from multiple sources is provided, showing multiple and interconnected factors contributing to each problem or challenge.

Furthermore, the students' narratives indicate that they were actively negotiating and constructing meaning, knowledge and identities through interaction within the self-directed learning process. Findings are summarised toward the end of the chapter in Table 6.1.

## **6.2 Technical problems**

To interact with computers and carry out the language tasks, the participants needed to deal with technical aspects of operating the software. This appears to be a challenge for those who are new to multimedia environments. Although most participants have a certain level of computer literacy, using demanding functions still caused certain problems as multiple factors were involved. According to the data, two functions are identified as demanding ones which caused doubts, frustration or struggles. Problems and challenges will be discussed in the following two sub-sections (For more detailed explanation, see Chapter 3.7 and Appendix G regarding the software programs used in this study).

### **6.2.1 Recording**

The recording function was one of the multimedia functions which the participants often used and also reported they had problems with. There seemed to be complex technical procedures involved in it. For instance, learners had to select sentences they would like to record in advance, listen to the original modelling sentence and press the "record" button before starting speaking: then to check their recorded voice, they could press another button. Combined with excitement and frustration, this function engaged participants in the fun of practicing speaking and listening but also brought doubts and challenges. Different problems were often reported immediately on site or in diaries, such as poor recording quality (e.g. low or no volume) or not

being able to record properly. The participants thought they “wasted” much time in finding the solution. It seemed to trigger doubts and anxiety initially when they were not familiar with the software. Data show that some participants were confused about who (i.e. they or the computers) created the problems. Take S1 for example, who doubted whether the computer could catch what she said or not because the record volume was too low. It seemed difficult for her, as she did not know how to handle the problems even though she “tried many times”. The following excerpt shows her efforts and doubts in solving the technical problems:

**S1: I kept thinking whether it was the problem with my voice...**  
*I used recording (function). Still I could not hear my voice clearly. I checked my pronunciation, which was very different from the original in the software. I kept adjusting it but it did not work. I kept thinking whether it was a problem with my voice. ...I tried to read out the item the mouse pointed at, but after trying many times I still could not get it totally correct. Then sometimes it seemed it could not capture what I said. I still don't know whether that was a problem with my microphone or with the software. (S1, Learning Diary: 28/10/2003).*

Likewise, S2 continuously reflected similar frustration with using the recording function. According to her diaries in the first few sessions, recording was the function she most often used to practice speaking but always struggled with. These technical problems caused difficulties that made her “extremely upset”, as she spent much time on solving problems with the record volume from the microphone and computers. S2 reported her difficulty and self-doubt, when she stated:

**S2: What's the matter? Was there anything wrong with me?**  
*Today I still used the recording function a lot. But, the same as last week, I just couldn't hear my own voice clearly. This made me extremely upset...@\_@\_. I spent a lot of time figuring out how to record it properly. But I still don't know what to do. What's the matter? Was there anything wrong with me? (S2, Learning Diary: 21/10/2003)*

It is noted that three main reasons were identified which contributed to the problems of using recording. The first one is lack of experience and knowledge of how to adjust the settings, as the problems seemed to be mostly reported during the first few sessions. This suggests that when participants were still at the stage of exploring the

software functions and new learning environments, using such demanding functions could be challenging due to lack of familiarity with the operating techniques. In the participants' view, the process of operating this function involves skills that needed time to learn. In particular, using recording requires many procedures of decision-making (e.g. setting up and testing microphone volume and responding immediately within a limited period of time), which is not as straightforward as other functions, such as *translation*, *dictionary* or *repetition*. As can be seen, failure in operating software functions can easily cause frustration when learners have not acquired the techniques that are needed for interaction with computers, which also reflected their fragile self-confidence.

The second reason with problems using recording was the quality and stability of the software and the hardware. Occasionally it interrupted learning when the software suddenly broke down, which some participants reported as 'troubles' and 'bad luck' because they were forced to either change to different computers to re-install the software or give up the software they had chosen. They regarded such situations as "disturbing" and "annoying", as the record function was considered one of the major functions that they often used to "interact with the computer". In some cases, it affected their interest and willingness to learn and some participants simply gave up using the software at that session due to lack of time. The self-doubts they reported implies that their self-confidence deteriorated when they encountered problems, though the participants still showed interest in learning. Such 'interaction' with the computer might therefore cause frustration for learners who lack experience in dealing with technical obstacles.

The third problem with using recording was low recording volume, which affected

sound capture and resulted in poor recording quality. Speaking loudly enough into the microphone so the voice could be captured was a challenge for the participants. Data from the observation field notes, learner diaries and interviews suggests that the participants' fears and concerns about speaking appeared to contribute to the low recording volume. For instance, some participants attributed recording failure to the fact that they did not speak loudly enough because they could not 'let go' (relax) while recording; some worried that they might disturb others if they spoke too loudly, particularly when they considered the spoken English they recorded as very bad. Thus, lack of confidence in their speech affected speaking performance even though they were practicing with computers rather than in front of other learners.

Other evidence revealing their fears is the particular body language they showed while recording. According to the observation field notes in the first semester, many participants tended to either observe others, or cover their mouths while speaking quietly as if they were intimidated by speaking practice. Their concerns behind these behaviours while practicing speaking were further explored in the follow-up interviews, which show that the students interpreted such acts as a way to help produce a higher volume without disturbing others as well as to ease the shyness they had when speaking the target language. They also admitted to a lack of confidence as they did not want others to hear their 'lousy English'.

In brief, in terms of the problems involve with recording, the learners' low recording volume and body language (i.e. covering their mouths) illustrated their fear and lack of confidence regarding their ability in producing an acceptable output. Fear of speaking added another layer of indirect reasons to the challenge of using new technology in self-directed multimedia environments though other factors such as

hardware quality and lack of operating experience or techniques should also be taken into consideration.

### 6.2.2 Role-playing

In addition, for most participants, using the role-play function posed more challenges than the recording function, as the operating procedures seem to be more complex and demanding. Similarly, to operate this function there are a series of procedures which are not easy to follow. Learners first have to decide on a role in order to practice the dialogue. To be able to pass the threshold (learners can vary the standard from low to high according to their own proficiency) and meet the requirement of the Speech Recognition System (SRS), learners have to follow the dialogues on screen and pay attention to the interaction element (e.g. turn-taking) to produce an acceptable output with proper intonation and pronunciation within the time limit (see Appendix E: Screenshots of Software Programs). Once learners fail to meet this requirement, the dialogue will be interrupted and immediate feedback will be displayed on the screen giving the learners three choices, i.e. *ignore/continue*, *listen to the original* or *try it again*. The response also provides a threshold level which they can adjust at the same time. Overall, controlling this function involves decision making and interaction with software, which learners have to pay careful attention to. They also have to respond to feedback from the software and make decisions according to their needs and preferences throughout the whole learning process.

Various problems were reported regarding the challenge of using role-play functions. Firstly, it seems that the requirements of the threshold in the SRS were confusing, as regular failure to reach the standard was often reported as a difficulty and there was also difficulty in comprehending what the actual criteria were. Although they had

followed the instructions from the feedback, they seemed to have problems with and complaints about role-play. The data therefore suggest there are discrepancies between students' learning needs and the standard set by the software designers. This negative feedback and constant failure caused doubts and frustration particularly in self-study settings when they could not comprehend messages from the computers or negotiate meanings successfully, even when they claimed they 'had exactly copied and spoken what the CD said'. Some participants showed similar disappointment and doubts regarding the standard set by role-play function as follows:

**S1: No matter what I said, it just wouldn't let me pass.**

*Now my favourite is the recording (function) because I can clearly hear my own voice. What I dislike is role-play because it is really difficult for me to say it. No matter what I said, it just wouldn't let me pass. (S1, Learning diary: 11/11/03)*

**S3: It was too difficult for me. So I quit!**

*I only tried the role-play once but it never let me pass. I felt what I had read was the same as the original. It was too difficult for me. So I quit! (S3, Interview 2: 16/12/03)*

**S6: I simply skipped it and never did it again.**

*Role-play was my favourite and the one I most hated. It (the feedback) always told me I was wrong, but what I said was actually correct. It was so annoying that, no matter how I adjusted, it wouldn't let me pass. So I simply skipped it and never did it again. (S6, Interview 2: 16/12/03)*

**S7: it kept saying, "your pronunciation is not correct". It was strange!**

*I 'interacted' with it (the computer) today, which made me extremely angry! I had spoken the sentence many times, but it kept saying, "Your pronunciation is not correct". It was very strange! So I had to tell myself not to get mad. Eventually I decided to use recording instead. At least it would not fail me. (S7, Learning Diary: 28/10/03)*

As stated above, participants considered the unpredictable feedback very confusing. The feedback did not seem to provide enough instruction or assistance which they needed but only raised doubts in their minds. Sometimes the participants illustrated their doubts and feelings of hopelessness when using the role-play function by attributing their unexpected success with computers to 'luck', which also shows a lack of faith in their ability to control the learning process caused by what they saw as the unpredictable nature of interaction with computers. S2, for instance, did not use role-play until the second semester, as it was only then, she indicated, "she finally has the courage to try the role-play". To her surprise, she successfully completed the

task at the first attempt, but considered she was lucky. However, she did not have much faith in this success and wondered whether the computer was “broken”. Apparently, she was not convinced by the result and decided to try her luck again. Unsurprisingly, S2 reported that she had an entirely different outcome using the role-play function again. The data suggest the unpredictable nature of the feedback seemed to affect learners’ confidence in interacting with the software, as S2 said:

***S2: the frustration was immense this time***

*I only used the part of role-play because the frustration was immense this time. I kept getting stuck there. It was extremely different from my previous experience where I passed it relaxingly. But this time ... =. Although I had already made my intonation as similar as I could to what it said, it was still difficult for me to pass. (S2, Learning Diary: 5/04/2004)*

Consequently, the data from various cases above illustrated the frustrations the learners experienced when attempting to use role-play, as they seemed to have difficulty in finding effective strategies to successfully complete the tasks during the learning process. The confusion participants expressed also reveals problems related to linguistic proficiency, such as lack of sensitivity or ability to identify the difference between their spoken output and the model, which I will further discuss in more detail later.

Secondly, another challenge encountered when using role-play functions seems to be the difficulty of producing acceptable spoken English with appropriate intonation or pronunciation. Realising proper intonation and pronunciation are crucial for using the role-play, many participants reported difficulty in managing the task. Imitating intonation or pronunciation was not an easy matter for these low achieving participants who had relatively little opportunity to practice speaking or listening (see also Chapter 5). Some reported extreme frustration however hard they tried to imitate the intonation. They did not seem to be satisfied with their own output (e.g. they describe it as “rubbish”), and clearly had great difficulty in meeting the

requirements of the role-play task. For instance, S1 and S5 felt upset and bored after they failed to learn the intonation (e.g. repeating it for five times) to meet the standard of the software. Eventually they decided to skip it (see Appendix F, 6.2.2/b for further data).

In particular, some participants indicated some kind of resistance to learning the intonation. They compared the difference between the target language and their native language, and said they considered the way it was spoken was 'not natural' or 'strange' though it was natural to hear native speakers speaking. For example, S2 thought that imitating the intonation was a challenging task, as it was 'strange' and 'unnatural' to say it. Also S4 conceded that it was hard to learn the new intonation and doubted whether she could adapt to it as she was used to the tone of her native language (i.e. Chinese). In addition, some disagreed with the criteria used by the SRS as they considered them 'too strict' and 'demanding' when the software failed them for not saying some 'unimportant' words with a particular intonation, such as 'Hum', 'Uh' (see Appendix F, 6.2.2/c for further data). As a result, the data suggests factors contributing to the difficulties of imitating the intonation appear to be the perceived difference between the native language and the target language, and even though the participants were aware of that, they still had problems learning the intonation. Thus, the failure to reach the standard set by the computer program increased their frustration.

Thirdly, the time allowed to respond to the software was another problem that made role-playing a demanding task/function. The students indicated that it was confusing, "weird" and "strange" how much time was allocated while speaking or recording. It was demanding for some participants, as time was too limited for them to respond

properly to the computer. For instance, in a few seconds, they had to identify a sentence and give a spoken response with the appropriate intonation and pronunciation. However, the participants attributed the limited time for recording to technical problems, instead of to their limited proficiency. For example, some indicated that while they were still reading the texts or before they could finish speaking, “it jumped to the next one before I finished saying the sentence” or “it said my pronunciation was incorrect when I still had not finish reading every sentence.” The following excerpts illustrate participants’ doubts regarding the timing of the role-play function:

**S4: Sometimes it jumped to the next one before I finished....**

*The role-play was weird. Sometimes it jumped to the next one before I finished saying the sentence. There seemed to be some problems with this function. (S4, Learning Diary: 11/11/03)*

**S5: I felt upset the program told me ...while I was still doing it.**

*I felt upset that the program told me I don't pronounce it correctly while I was still doing it. It happened so many times and I started to wonder whether it was my problem. (S5, Learning Diary: 11/11/03)*

**S7: It is unbelievable!!! In fact, I have not started speaking anything...**

*The system of Live is more organised...It made me very angry because it said my pronunciation was incorrect when I still had not finish reading every sentence. It is unbelievable!!! In fact, I have not started speaking anything... So, I found a drawback about this system that there is no 'start button' for recording, which leaves people having no idea when it starts to record. (S7, Learning Diary: 28/10/03)*

Therefore, the data suggest that there was a discrepancy between the needs of the learners and the assumption of the software designers about ‘how much time was in fact needed for sound capturing’. Particularly for less successful learners, limited time for thinking and speaking might easily increased the tension and difficulty involve in using the role-play function. In brief, the problems the participants encountered in role-playing varied, including the difficulties related to requirements of the SRS, timing and imitating intonation. In addition to these technical obstacles, the unpredictability of feedback, time limits and difficulty in imitating the correct intonation demonstrated the great challenges the learners had to deal with while

interacting with the computers.

To summarise, this section, 6.2, discussed the technical problems and challenges the participants encountered while interacting with multimedia environments. It suggests that the learning process can be affected by various factors. When using record and role-play functions, learners need to have acquired a certain level of technical expertise to operate the software, which also implies time is important for learners to become accustomed to the settings. In addition to technical ability, having the confidence to speak loudly is a challenge which seemed difficult for less successful participants. Furthermore, the most demanding task is to understand the feedback and the standard set by the computer software. Difficulties in adjusting themselves to meet these software requirements placed certain constraints on their learning process, and caused a certain amount of stress, for the participants. It appears from the findings that interacting with computers in self-directed multimedia environments can be challenging for learners who do not have a certain level of technical experience or confidence, which is consistent with the previous research literature (Sheerin, 1997; Wenden, 1998, 2001). Instead of being motivated by the multimedia features, without the prerequisite abilities or strategies, the learning process is not always enjoyable.

### **6.3 Obstacles to managing learning**

In self-directed multimedia environments, being able to manage learning is essential as students are in charge of their own learning process. Analysis of data from learning diaries, focus groups and interviews, showed that participants encountered three main kinds of challenge while managing their own learning: managing software, adjusting learning pace and accessing progress.

### 6.3.1 Managing software

First, selecting software at a suitable level was the first task that participants have problems with. As discussed in Chapter 5, selecting software with practical or interesting contents appeared to stimulate much intrinsic motivation, as the participants showed much enthusiasm, interest and willingness to select the software they eventually chose, such as comedies, MTV, news, films, etc. However, as they were excited about this, most participants did not seem to think carefully about their selection, and they reported that “grasping what they felt interesting or available” appeared to be the main approach. Most participants experienced ‘an exploratory stage’ where they had to deal with problems they encountered in the process of choosing software.

Selecting appropriate software was a challenge as many participants reported frustration comprehending the contents as they selected software that was beyond their level, though it looked interesting. For instance, S1 chose to use a comedy series at an advanced level in the first few sessions and she reported problems with the fast audio speed and difficult texts that contained too many new words. To understand what was being said, she attempted to use help functions such as ‘subtitles’ and ‘slowing down the speed’. However, these did not seem that ‘helpful’. She indicated that there were many more new words in the English subtitles, which made it time-consuming to study a small segment. Therefore, this low efficiency affected her self-confidence, as she suspected her English ability might be the cause.

Similarly, S3 chose a series of comedies at an advanced level in the first few sessions. Although she found the program interesting and motivating, the authentic content also caused problems such as fast speaking speed, idioms, demanding listening tasks,

longer sentences and an abundance of new words. Not surprisingly, in her diaries and interviews, she continuously reported her concerns and doubted whether she had made the right decisions in regard to software, as shown in various excerpts as follows:

***S3: Did I jump too fast? Have I chosen the right software?***

- *The comedy I listened today was far more difficult. The sentences became much longer. I just could not comprehend what I heard. I guess this series might be getting more advanced. Did I jump too fast? Have I chosen the right software? (Learning Diary: 21/10/2003).*
- *Today I still learnt the comedy and I listened to three of them. ... Similarly, they talked so very fast that I had to check the English or Chinese to fully understand the entire meaning. (Learning Diary: 11/11/2003)*
- *In comedies, the dialogues were far too fast so that I could hardly keep up with it. (Interview2: 16/12/03)*

In addition to the fast audio speed, difficult words and longer sentences, difficulty in understanding the humour, idioms or phrases which had particular cultural issues added to the difficulties of this challenge. This problem may not merely happen with random choice of software. But it seems to be regularly reported when participants selected advanced software, in particular, comedies and films. For instance, S1 and S2 criticised the humour they heard as not being funny at all and claimed that it bored them and affected their willingness to study it. S4 and S5 also reported difficulties appreciating the humour due to the difficult content that was beyond their level of comprehension. Apparently, the data suggest there was a cultural barrier for learners in comprehending the authentic content of foreign humour (e.g. comedy).

The factors behind the challenges posed when selecting suitable software varied. One possible factor is lack of experience as the participants were new to the self-directed learning environment and to exercising control in selecting software. Initially, they appeared to be overwhelmed by the range of choices and they were eager to explore a variety of different software. This can be shown by the random choices of software reported in their diaries at the first few sessions. Another factor,

according to the participants, was the impact of peers on their choice of software. Exchanging information in the debriefing session stimulated much motivation for exploring different software, as mentioned in Chapter 5. However, this may have also contributed to competitiveness which apparently caused some pressure on those who had difficulties tackling advanced software. For instance, S1 indicated that she once felt the pressure she was under when she realised others could gradually understand the comedy that she still had problems with (see Appendix F, 6.3.1/a for further data). In brief, selecting appropriate multimedia software appeared to be demanding at first. Without much experience and guidance, it could be a challenge, which affected the motivation of the participants.

### **6.3.2 Adjusting learning pace**

Managing the pace of learning emerged as a challenge that posed certain problems when the participants decided how often they intended to study the same software. As in Chapter 5, controlling learning pace was considered an advantage as learners could decide how much time they allocated to the lessons they needed to improve, which in turn enhanced their self-confidence (see S1 and S5 in Chapter 5). Nonetheless, facing various choices, many participants seemed to keep changing between different programs, which appeared to be the common approach at first.

The data from interviews and learning diaries suggest that problems occurred when participants changed learning software regularly. Firstly, it appeared to affect the learning outcomes, as random changes of software did not allow them absorb the contents in-depth. Some participants reported ambivalent feelings, as using different software at every session seemed 'refreshing' but also brought a sense of loss. For instance, S1 changed programs mainly in the first six sessions and realised that it was

‘fun but not useful’, as she said, “It seemed not so organised when I absorbed different things every week”. Another example is that of S3 who chose to use different software from the same comedy series at an advanced level in each of the first five sessions. Then she did not use the same software again till the end of the first semester. She was uncertain of the reasoning for her random use of software, as she was concerned about the limited learning outcome, as she indicated, “Keeping on changing software is more refreshing. But I did not know what I have learnt” (see Appendix F, 6.3.2/a, for further data).

The data suggest a number of factors that contributed to the challenge of deciding learning pace. One of the main reasons seemed to be the lack of awareness of learning needs. As indicated, the initial approach to the regular changes of software appeared to be based on fun and curiosity, with no clear strategy for selecting appropriate software. Because they were able to exercise *control*, the participants tended to be motivated to learn whatever they liked initially. However, having given little thought to organising their learning patterns or pace, the frustration of not knowing what they learnt shows a lack of metacognitive strategies such as setting learning goals and plans, which in turn caused negative learning results and confusion.

Lastly, time planning appeared to be another issue as participants often complained that time was ‘running fast’ or ‘not enough’ and they were concerned that they did not learn as much as they expected. They reported dissatisfaction with their time management. Thus using time effectively in each session was a challenge for many participants. I supposed that their lack of stable learning patterns during the exploratory stage seemed the most likely cause.

### 6.3.3 Self-assessing progress

Various problems were identified that related to assessing progress. Evaluating progress is the one area that many participants had doubts about. Several issues regarding the uncertainty of progress or effectiveness of learning in multimedia environments gradually emerged. It is noteworthy that this tended to contradict the claims reported in Chapter 5 that, without pressure from grades, tests and comments from peers or instructors, they could learn happily and relaxingly in multimedia environments. Emerging doubts were reflected in their diaries, focus groups and individual interviews, regarding accessing progress, included “Can they make progress without pressure in multimedia environments?”, “In what way do they access progress when there are no formal tests?”, “Can they still learn effectively without tests?”, and so on. Some gave positive answers but with some uncertainty; while others gave negative answers and expressed strong doubts. The data reveals participants’ problems regarding judging their progress in self-directed multimedia environments. For some participants, there seems to be a contrast between their expectations and the actual learning outcomes when they compared what they learnt in multimedia environments with the criteria applied in conventional classes.

#### **Vague description of progress**

*S1: I am not very sure how I evaluate my progress. Tests are necessary. But I don't want to study just for tests. (S1, Interview 2: 16/12/03)*

*S4: Sometimes I felt that I have made progress. But sometimes I thought the progress was not very obvious. ...Tests gave me pressure. But I still felt like doing them just to know whether I had made progress. I could understand (the lessons) better when I listened to it. I had more confidence in catching the keywords. Using multimedia, I would not say I had learnt a lot, but my listening ability will be improved and, to some extent, my accent would be changed. (S4, Interview 2: 16/12/03)*

*S5: After learning multimedia, I think my listening ability has improved, but just a little bit. With speaking, I don't know. (S5, Interview 2: 16/12/03)*

*S6: I am not sure how I measure the learning outcome (in multimedia environments). I just knew it if I felt I had made progress maybe, because it would be easier when I read or heard English. I don't know. Maybe tests are good ways to find out. We used to have loads of tests that helped us to detect whether there was progress. But I really don't like tests. (S6, Learning Diary: 09/12/03)*

The data shows a mismatch between the participants' expectations and the actual learning outcomes. It seems that they expected to learn quite quickly and improve their language proficiency by taking part in this project for several sessions. Their disappointment was shown by a strong sense of disappointment reported in the learning diaries and interviews. Some expressed similar thinking as shown in the following statements:

**Disappointment of not making enough progress as expected**

*S3: I don't think there is really enough time. Can I learn anything in one hour or so? I learn English very slowly and forget it very quickly. Maybe because it was just the 2<sup>nd</sup> session, I still could not see the effect. (S3, Learning Diary: 21/10/03)*

*S3: I learn happily and relaxingly, though I don't know what I have learnt. I feel that I expected to learn more but in fact my progress was not that good. I thought I could learn something. Rather I did not. (S3, Interview 2: 16/12/03)*

*S6: I don't feel that I have made much progress in the first semester. Tests do help. Without tests, I don't know whether I have made progress. (S6, Interview 2: 16/12/03)*

*S8: Originally I hoped I could learn a great deal with multimedia. But it did not happen. Well, maybe the time I spent on it was not enough... (S8, Interview 2: 16/12/03)*

The participants apparently held unrealistic beliefs regarding the efficiency of learning in multimedia environments. They seemed to expect to "learn a great deal with multimedia" within the limited time in each session, which did not happen. In addition, regarding the issue of efficiency of learning in multimedia environments, different opinions were voiced about whether lack of pressure from tests negatively or positively affected their learning effectiveness. Learning 'without pressure' was regarded as an advantage, but in practice it seemed to lead to less efficient learning. Some participants were convinced that extrinsic factors such as tests were necessary to ensure progress. The illusion of "no pressure from tests, no progress will be made" shows a lack of faith in making progress while there were no extrinsic rewards (see Appendix F, 6.3.3/a, for further data).

## **6.4 Difficulties with language learning**

Difficulties related to language learning were the other major challenges the participants encountered. Among these, speaking and listening problems were often reported or observed while doing various language tasks.

### **6.4.1 Fear of speaking**

Firstly, fear of speaking was a major problem many participants reflected on, particularly during the first semester. Though some reported this mainly at the first few sessions, some had great difficulty with it throughout the whole semester. It seems that pressure, anxiety and struggling to practice speaking, in turn affected their willingness to do certain tasks involving speaking. However, it is noteworthy that their hesitation and fears reveal contradictory opinions of speaking practice that they appreciated, perceiving the abundant opportunities to speak as one of main attractions of learning in multimedia environments (see also Chapter 5).

Their fears can be clearly seen from their body language. As discussed in the previous section 6.1, many either observed others regularly or covered their mouths while speaking. From their point of view, it required great courage to take the first step to speak up while using certain interactive functions that involve speaking activities, such as record or role-play. For instance, S1 reported her fear of speaking mainly at the first few sessions and she regarded her fear of English or speaking English as “psychological obstacles” that reduced her willingness to use record functions initially. In addition, the presence of the instructor appeared to intensify her anxiety though she was aware of the changed role of the instructor, as she said, “As long as the instructor was near me, I felt very frightened”.

The impact of the instructor's presence apparently added to the layers of difficulty with speaking, even when the instructor simply walked around the room. Perhaps, S1's fear of English teachers can be traced back to her humiliating experiences in her high school English class, as referred to the background in Chapter 4. Such influences should not be ignored. S1's statements showed her concerns and anxiety about the instructor, as she indicated at the end of the first semester:

*S1: ...I still didn't have the abilities to speak in front of teachers.  
"as long as the teacher stood behind me, I would choose to do just listening (tasks). I couldn't speak a word if (she) kept standing next to me because I still didn't have the confidence to speak in front of teachers. (S1, Interview 2:19/12/03)*

However, for some participants, their fear of speaking lasted longer for a number of reasons. For example, S5 has similar concerns about speaking. She praised the speaking functions and attempted to use them. Nonetheless, she often reported problems with speaking due to her shyness and the consequent low volume of her speech, leading her to criticise the quality of her own output, and affecting her self-confidence, as she stated, "I spoke super quietly...what I said was very bad". Similarly, S5 considered there was "pressure" from the instructor and she vividly described her fear in the second interview: "especially when I saw the shadow stop on the monitor, I froze immediately". As I observed, she often stopped and watched others during learning sessions. She admitted to further concerns during the interview where she stated she thought being heard was "frightening" so that she decided to cover her mouth while speaking. Again, this shows that she did not have much confidence in her own speaking output, as she said, "I was worried that others might hear mine". On the other hand, peers' performance made S5 feel anxious. She tended to compare her performance with that of other learners who she thought spoke well. This in turn magnified her own fear and perceived sense of competition and pressure at the same time as she was very much concerned about others' opinions

and predicting her failure. S5 felt anxious and doubted whether she was as competent as the others:

**S5: I felt anxious when I heard others speaking well.**

*I felt anxious when I heard others speaking well. For example, I felt that what S8 said, such as her pronunciation, was fairly good. Sometimes I could hear her voice when it (the lab) was very quiet. That also made me wonder what others would think if they hear mine? So there is pressure and some anxiety on me in multimedia environments. (S5, Interview 2: 16/12/03)*

In addition, S6 reflected the same concerns to other participants about her peers while speaking. It showed that her self-confidence was low, as the “fear for being heard” and “others’ great performance” inhibited her from speaking loudly. Having shown a fear of peers, conversely, S6 also regarded the presence of peers as a positive force to maintain her motivation to join the self-study group, as she continued explaining in the interview:

**S6: I can be very lazy if I study alone. I won’t study seriously.**

**The Instructor:** *Have you thought about what would it be like if you study alone?*

**S6:** *Yes, of course! I can be very lazy if I study alone. I won’t study seriously. With the group discussion, I may exchange opinions about how we used the software with others. (S6, Interview 2: 16/12/03)*

Interestingly, peers apparently played complex roles as their influence seems to be multi-layered as shown by the various responses from participants. In addition, their individual learning beliefs and self-confidence appeared to affect how they view the influence of peers (see Appendix F, 6.4.2/a, for further data).

To sum up, from the above discussion several reasons seem to contribute to the participants’ fear of speaking, including the presence of the peers and the instructor, their negative self-identity when they considered themselves as less competent members of the peer group, low self-confidence and unrealistic learning beliefs about speaking output. Their concerns and struggles also illustrate the conditions that less successful learners might encounter in multimedia environments when they are provided with a range of speaking opportunities that they had rarely experienced

previously in conventional classes. Such fears apparently caused problems that inhibited some participants' performance, behaviour, and motivation to do certain tasks, especially speaking.

#### 6.4.2 Difficulties with listening and speaking

##### Listening

In addition to a fear of speaking, the participants reported various language learning problems related to listening. Some participants reflected on the difficulty they had with listening comprehension throughout the first semester and attributed this to the fast audio speed, the number of difficult words or the problems posed by linking sounds. I will present data from two cases, S3 and S4, to explore in-depth, the learners' listening problems and factors during the learning process. S3 reflected on this issue regularly in her learning diaries and interviews. In her view, listening was the part she most disliked about multimedia as it made her feel very frustrated, as she said:

- *The comedy I listened to today was far more difficult. The sentences became much longer. I just could not comprehend what I heard. (S3, Learning diary: 21/10/03 )*
- *Umm...regarding to listening, I felt I did not make progress and I still thought the speed was too fast...(S3, Learning diary: 28/10/03)*
- *Today I still learnt the comedy and I listened to three of them...The same as before, they spoke very fast that I had to check the English or Chinese to fully understand the entire meaning. (S3, Learning diary: 11/11/03)*
- *In comedies, the dialogues were far too fast that I could hardly catch up with it... The part I did not like was the speed. It was too fast. (S3, Interview 2: 19/12/03)*
- *The speed of CNN was faster than Live. I listen to it again and again. The reporter spoke so quickly that I could hardly follow it. (S3, Learning diary: 22/03/04)*

There seemed to be multiple reasons why the fast audio speed was difficult for S3. The first one is her limited language proficiency. As she mentioned, the sentences were "too long" and the words were "more difficult", she seemed to be discouraged by these language problems.

Secondly, her approaches to managing the software appeared to exacerbate the listening problems. One of them is the inappropriate selection of software level. The data indicated that S3 tended to report listening problems when she chose a series of programs that are mostly at an advanced level (e.g. comedy or news). Although she found the programs interesting, the listening tasks she encountered were beyond her level. As the software involved different degrees of authenticity, different problems were then reported (e.g. high speaking speed, idioms and an abundance of new words), which led to frustration. In addition, the strategy she took to arrange the software also contributed to her difficulties. As she was interested in exploring new software at every session particularly in the first semester, the same language problems occurred as with the new learning contents. Later in the interview, S3 indicated such a problem was caused by regular changes of programs.

Lastly, unrealistic beliefs also strengthened S3's frustrations when she was not able to cope with the fast speed. For instance, in different sessions, she said she expected to make as "much progress" as at the earlier stages (see also 6.2) and hoped to "fully understand the entire meaning". Such beliefs seemed to affect her strategies in tackling the listening tasks. Sometimes, as S3 indicated, she seemed to be distracted by unknown words, overuse the help functions and spend much time on checking the meanings of words. In fact, because so much time was spent on checking meaning, S3 occasionally complained that she did not have time to finish the listening tasks.

In addition, the regular use of help functions (e.g. subtitles and dictionary), revealed S3's lack of self-confidence or cognitive strategies (e.g. making guesses) to deal with the tasks. The data suggest that S3 paid too much attention to word-to-word

meaning and did not use listening strategies effectively, as she often stopped to check the meaning of words (O'Malley *et al.*, 1989) by using help functions. It then became time-consuming for her to tackle the listening tasks. In her learning diary, she felt quite annoyed when she realised she had to rely on subtitles or else she would be “totally lost”.

*S3: I still couldn't turn off the Chinese ones or that would make me totally lost. I watched a movie...It was brilliant! I really enjoyed it. And I tried to only watch the English subtitles as little as possible. But I still couldn't turn off the Chinese ones or that would make me totally lost. (S3, learning diary: 01/12/03)*

Furthermore, S4's experience provides a different angle from which to view the listening problem. Initially, S4 indicated elision (i.e. links between words) made listening very difficult, as she “only understood half of the text because she could hardly catch the linking sound”. As data from the learning diaries and interviews showed, she described sentences she heard as “big chunks” that were “stuck together” and which were hard to distinguish. Later, she described the same problem again when she watched the movie at the end of the first semester, as “not being able to comprehend long chunks of sentences with loads of linking sound”. In the interview, she recalled her listening as one of problems that brought her much frustration in the first semester, as she put it:

*S4: ...at the first semester, I felt, comparatively, that listening made me more frustrated... When I was exploring (the multimedia) at the first semester, I felt, comparatively, that listening made me more frustrated. Sometimes I knew the sound was very familiar to me, but I just could not think of what it was. It was very annoying! Then I realised that my ability in distinguishing sound was not good enough. (S4, Interview 4: 01/04/05)*

In brief, the cases studies provided insights into the listening problems self-directed learners may encounter and the factors involved during the learning process. The data show that coping with fast speech was very demanding for S3 for a number of reasons, including limited proficiency, inappropriate strategies for managing the

software, unrealistic learning beliefs and low tolerance of ambiguity. Her lack of self-confidence and inappropriate strategies to deal with listening problems are other factors which may have affected how effectively she learnt. In addition, as the data shows, S4 was aware of her listening problems, which mainly involved not being able to identify linking sounds and poor guessing strategies to recall words, by which I assume she meant to say that the limited time for her to guess and her limited vocabulary both seem to contribute to the problems with fast audio speed.

### Speaking

In terms of speaking, the participants encountered various difficulties while using some technical functions. According to the data, the two major functions students mostly used were record and role-play, which involved much speaking practice. Though the level of difficulty was different, the language skills required seemed similar. For instance, as the purpose of recording is to drill, the participants needed to *listen* to the model sound track in the text and *repeat* after that. During the recording process, they also needed to *comprehend* the sentence or word, and *distinguish* the sound, which seemed to be demanding if they had problems with listening, such as fast audio speed or many unknown words, as discussed in the previous section. On the other hand, with role-play, the participants needed to apply similar language skills but were required to fulfil more demanding standard. They not only had to understand the content of the dialogues or practice the correct pronunciation first, be attentive to turn-taking, *speak* independently (without modelling in advance), but they also had to speak carefully in order to produce sentences that the software would deem acceptable. In addition, according to some participants, being rejected regularly without knowing how to succeed, despite much effort on repeated drilling practice or sentence repetition, was frustrating.

An important contributor to this problem might be poor self-correction strategies, and one major problem reported was the difficulty they had in adjusting their intonation or pronunciation. Although they could imitate the model sound track as many times as they needed, initially it seemed extremely difficult for them to identify the difference between their output and the 'standard' one (see also 6.2). For example, S4 reflected on her concerns regarding not being able to speak as correctly as the model. She was very interested in improving her speaking as she considered "speaking fluently is very important for me!" Nonetheless, she found it very hard to speak "standard pronunciation" and "normal intonation", as she said:

*S4: I always could not speak more 'normal accent'.  
I used the recording function today so that I could listen to my English accent, but I felt the English I spoke was very funny! I could not always speak in a relatively 'normal accent'.  
Although people said singing is helpful in improving my pronunciation and accent, I did not dare to. This is an obstacle for speaking so far. (S4, Learning diary: 18/11/07).*

As shown above, S4 was not satisfied with her output as she recognised the "obstacles" but could not find the solutions. It was noteworthy that although she utilised the record function to help her, not being able to self-correct her accent was frustrating for her. In the next session, she emphasised the same problems and further identified the cause, "flat intonation". Again, she did not know how to cope with it:

*S4: It was difficult for me to imitate it.  
I don't think I have made much progress in terms of pronunciation. Besides, I used the recording function and I found my intonation was always very flat and there were no highs and lows. It was difficult for me to imitate it. (S4, Learning diary: 25/11/03)*

Furthermore, it was found that some learners' resistant attitudes towards the target language caused speaking problems. They compared the difference between the target language and their mother tongue, and emphasised that it is difficult to learn intonation or some 'unimportant words' (e.g. uh, mm) as it is 'not natural' or 'strange' for them to imitate. For example, S2 indicated that imitating the intonation was a challenging task, as it was 'strange' and 'unnatural' to say it, as she stated, "English

intonation is extremely difficult for me to learn". Also S4 conceded that it was hard to learn the new intonation and doubted whether she could adapt to it as she was used to the tone of the mother tongue (see Appendix F, 6.4.2/b, for further data).

As a result, the data suggest various factors contributed to the difficulties the students had when imitating intonation. Some participants felt that such a big difference between the mother tongue and the target language caused problems for them in adjusting their intonation. This implies that changing their intonation from "flat" to "wavy" was difficult for them as they considered that their voice sounded "funny" or "fake". This failure to reach the standard set by the computers increased their frustration.

To sum up, the above findings show the difficulties with listening and speaking caused by the students' lack of "phonological knowledge" (Flowerdew & Miller, 2005:30) needed to conduct listening and speaking tasks in self-directed multimedia language learning environments. The ideas related to stress in sentences, intonation and reduction in sentences (linking words) appeared to be new notions that were confusing to the participants who had had limited experience of learning these. Feeling resistant to the target language can lead to difficulties with, or a decrease in, willingness to learn. The rhythm of a language is linked to stress patterns and is important for comprehension, especially in a language like English, which has a stress-timed rhythm (i.e. stressed syllables tend to occur at regular intervals). For the participants, whose L1 is a syllable-timed language (Mandarin Chinese), it is therefore likely to be a challenge to deal with a stress-timed language (Flowerdew & Miller, 2005:32). Perhaps they needed more time to build up their ability to distinguish between the target language and their own spoken language.

On the other hand, this stage can be critical when exploring the criteria for correcting their output. Not knowing “standard pronunciation” increased their frustration in carrying out the speaking tasks. Additionally, their learning beliefs, a ‘perfectionist’ attitude toward pronunciation, also caused anxiety and hesitation, the evidence for which can be seen in the self-criticism of their output. Thus, self-confidence, fear, pressure or anxiety about speaking cannot be ignored, as they affected the learners’ willingness to speak.

## **6.5 Summary and discussion**

This chapter attempted to answer the second research question which deals with the problems and challenges less successful learners may encounter in self-directed multimedia language learning environments. More specifically, two sub-questions ask: (1) what are the problems and challenges, and what factors are involved? (2) How do the problems and challenges affect learners’ individual traits? Three major themes emerged from the data, including technical problems, obstacles in managing learning and difficulties in dealing language learning tasks, as summarised in Table 6.1, and I will elaborate on them in the following sections.

Firstly, with regard to technical problems relating to software set-up and the use of demanding functions (e.g. record and role-play), various difficulties were reported which led to frustration, self-doubt about abilities and negative attitudes. In particular, repetitive failure had a negative impact on the participants’ motivation and self-confidence and doubts about their learning efficiency arose due to the amount of time being spent on solving technical obstacles instead of language learning tasks.

It is noteworthy that the factors involved with technical problems are complex as they

involve not only software or hardware problems, but also the participants' computer skills and linguistic difficulties. For example, using record and role-play functions requires familiarity with the set-up process and the confidence to speak out loud with an acceptable intonation so the computer can capture the voice and this appeared to be a challenge for some participants who were not confident or lacked the required ability to do so. This finding is consistent with previous CALL research, regarding learners' frustration due to technical problems with on-line multimedia language learning materials (Murday *et al.*, 2008). However, this study has found some factors that have not been previously been discussed. For instance, the participants' computer technical skills or experience, linguistic abilities and level of self-confidence are all likely to interact with each other in contributing to the problems – both linguistic and technical - learners had with activities such as the role-play task. Thus, this study suggests that there are multiple learner factors that contribute to the complexity and difficulty in the human-computer interaction in self-directed learning processes.

Secondly, in terms of managing learning, the participants reported difficulty in managing software, adjusting the pace of learning and self-assessment of progress. The findings suggest the learners encountered a series of decisions and tasks mainly relating to choosing software of an appropriate level, deciding when to change software, planning time in each session, and assessing their progress. It placed tremendous demands on the learning strategies of the participants who rarely had experience of a self-directing learning environment. Doubts and frustrations were reported from learning diaries, debriefings, interviews and focus groups because

**Table 6.1 Overview of Chapter 6: Emerging Problems and Challenges**

	Sub-themes (problems & challenges)	Factors
6.2 Technical problems	<p>6.2.1 Recording</p> <ul style="list-style-type: none"> <li>* not being able to record</li> <li>* waste time on setting up</li> <li>*not hearing recorded sound</li> </ul> <p>6.2.2 Role-playing</p> <ul style="list-style-type: none"> <li>*constant failure</li> <li>*unpredictable feedback</li> <li>*lack confidence in using this</li> <li>* difficulties learning intonation</li> </ul>	<ul style="list-style-type: none"> <li>• Complex setting up procedures</li> <li>• Lack experience or techniques to operate it</li> <li>• Low recording volume / lack confidence to speak loudly</li> <li>• Lack linguistic knowledge or strategies to meet requirement of SRS</li> <li>• Resistance to learn intonation</li> </ul>
6.3 Obstacles to managing learning	<p>6.3.1 Managing software</p> <ul style="list-style-type: none"> <li>*choosing software of wrong level</li> <li>*random changes of software</li> </ul> <p>6.3.2 Adjusting learning pace</p> <ul style="list-style-type: none"> <li>* finished quickly</li> <li>* unstable learning patterns</li> </ul> <p>6.3.3 Self-assessing progress</p> <ul style="list-style-type: none"> <li>*doubts about how much they learnt</li> <li>*doubts about whether they can learn without tests</li> <li>*unstable progress</li> </ul>	<ul style="list-style-type: none"> <li>• Lack of awareness of learning needs</li> <li>• Peer pressure and competitiveness in affecting software choices</li> <li>• Lack of knowledge about the software</li> <li>• Lack of goals and plans</li> <li>• Being at exploring stage</li> <li>• Unrealistic learning beliefs (expect quick results)</li> <li>• Use previous criteria to judge progress (tests, number of words they remember)</li> <li>• Lack of new justifying criteria</li> </ul>
6.4 Difficulties with language learning	<p>6.4.1 Fear of speaking</p> <ul style="list-style-type: none"> <li>* dare not speak loudly</li> <li>* covering mouth when speaking</li> <li>* stop speaking and observe others</li> <li>* feel pressure listening to others</li> </ul> <p>6.4.2 Difficulties with listening &amp; speaking</p> <ul style="list-style-type: none"> <li>* fast audio speed with linking sound</li> <li>* many difficult words</li> <li>* abuse of help functions when checking meaning of each word</li> <li>* frustration from being repetitively rejected by computers</li> <li>*difficulties in changing intonation or pronunciation</li> </ul>	<ul style="list-style-type: none"> <li>• No confidence about speaking</li> <li>• Unrealistic beliefs /accurate pronunciation and standard fluency</li> <li>• Negative self-identity/pressure from presence of peers and the instructor</li> <li>• Low tolerance of ambiguity</li> <li>• Unsuitable choices of software/ low language proficiency</li> <li>• Unrealistic learning beliefs (understand entire content and unknown words)</li> <li>• Lack of abilities to self-correct errors</li> </ul>

of various problems, including difficulties with learning content caused by random choices and changes of software, time running quickly in each session without learning much, disappointment regarding no obvious progress, or unstable progress, and so on.

In addition, difficulty with managing learning appeared to cause language learning problems, which led to a negative impact on the participants' self-confidence. For example, some students attributed their difficulty in understanding humour in the comedy program to their low proficiency. Among the various factors identified, one was the lack of awareness of their own learning needs, and the lack of experience of using strategies in managing software, seemed to lead to the random use or change of software or functions. In addition, unrealistic learning beliefs (e.g., expecting quick results and perfection in pronunciation) and lack of new criteria to judge their progress in the self-directed learning processes stimulated doubts about the effectiveness.

The participants in this study encountered tasks where they needed to make a variety of different decisions (e.g. defining needs and goals, selecting materials and techniques/ functions, organizing plans, evaluating progress, etc.) (Little, 1989). However, this study also found that although the learners were disposed to be independent, they lacked the skill and knowledge they needed to achieve that independence. Thus, our findings agree with what Sheerin (1997) argued, that the learners' readiness to take on responsibilities and their ability to make decisions about choosing appropriate strategies, may be the main cause of the difficulties in managing language learning in self-directed multimedia environments.

Thirdly, the participants encountered difficulties in language learning, including fear of speaking and difficulties in listening and speaking. The data suggest the fear of speaking the target language affected the participants' behaviour, motivation and self-confidence as can be seen by certain observed behaviours (e.g. speaking quietly, speaking with their hands covering their mouth, observing others and hesitation in practicing speaking). In addition, through their learning diaries and interviews, the participants reported their stress, worries and concerns caused by their fear. Some factors are identified, which seem to contribute to their fear, including lack of confidence in their speaking quality, unrealistic beliefs (e.g. accurate pronunciation and standard fluency), negative identity (e.g. others are better than me: everyone knows I cannot speak properly), the presence of peers and the instructor. Obviously, some factors reported at the initial stages continued to affect their learning, such as the presence of peers and the instructor. Meanwhile, the participants' abilities and self-confidence were challenged by speaking tasks.

In terms of listening and speaking difficulties, the data suggest that the participants encountered various problems, including fast audio speed causing problems in identifying linking sounds, the number of unrecognised words in authentic text, much time and effort spent using help functions, repeated rejection of their responses by computers without knowing how to self-correct errors, not being able to change intonation or pronunciation, and so on. The factors contributing to the difficulties mainly related to choices of software level, low tolerance of ambiguity, unrealistic learning beliefs (e.g. expecting to understand entire content), lack of strategies or the ability to compare these differences between their speech and the model, and to correct their own errors. Obviously, the reported confusion and doubts about

listening and speaking seemed to discourage them from carrying out the language tasks. Their self-confidence was also negatively affected due to self-doubt and lack of strategies to effectively tackle the problems and challenges.

To sum up, the emerging problems and challenges suggest a complex and struggling learning process that the participants experienced as they constantly dealt with various tasks that related to technical procedures, managing learning processes and learning language skills. This study has identified similar findings as Lam's (2000) study. Namely, there is a cyclical relationship among the learners' self-confidence, beliefs, attitudes, motivation and strategy use, which seemed to be intertwined and mutually affected when the various problems and challenges occurred (Lam, 2000). It would be too simplistic to assume language learning would successfully happen with a well-designed interface in multimedia environments without considering the learner factors and the impact on interaction with computers or others. As shown, the learning process often challenged the participants' language and technical abilities, learning beliefs, perseverance, self-confidence, strategy use, identity, and so on. During their interaction with the computers, the participants constantly responded to various decision-making demands which involved negotiating meaning with computers (e.g. finding out the software standard). They also reconstructed/proceeded with learning processes during self-directed learning sessions through solving various problems (Vygotsky, 1962), such as how to operate functions, arrange software and learning pace or assess their progress, and improve speaking and listening skills.

Consequently, the problems and challenges identified in this study suggest there is

significant evidence that echoes the concerns reported in previous research. The learners did encounter various difficulties due to low self-confidence or lack of pre-requisite abilities (e.g. technical skills, metacognitive knowledge) when self-directing their learning in multimedia environments (Sheerin, 1997; Wenden, 1991, 2001).

However, the discussion should not end here. From a sociocultural perspective, how the interaction with resources, the multimedia environments, provides mediation to cultivate the capacities of self-directed learners' needs should be further explored. Therefore, in Chapter 7, how the participants strive to cope with the problems and challenges described in this chapter will be explored and, questions and issues raised in this chapter will be examined in greater depth.

## **Chapter 7**

### **COPING WITH PROBLEMS AND CHALLENGES**

#### **7.1 Introduction**

This chapter focuses on how participants coped with the challenges discussed in Chapter 6. The coping strategies and the changes in self-confidence and motivation are explored. The previous two chapters have demonstrated the participants' attitudes and impressions and how their learning progressed in multimedia environments, including changes in their self-confidence and motivation. In Chapter 5, I investigate participants' impressions of and attitudes towards, language learning software and multimedia functions. In Chapter 6, the emerging problems and challenges in multimedia environments demonstrate the complex learning conditions that are affected by various factors. This chapter aims to reveal how the participants coped with the problems and challenges mentioned in Chapter 6. Table 7.1 provides an overview of the findings.

#### **7.2 Coping with technical problems**

Various factors that triggered anxiety, frustration and self-doubt regarding the technical problems were discussed in Chapter 6, and will be further analysed in this chapter. These include the quality of software and hardware (e.g. compatibility of computers, sound card), learners' experience and technical skills, linguistic abilities and affective status. It seems that these problems were particularly anxiety-provoking when initially the participants were not familiar with the software, hardware and other settings (e.g. peers, activities, learning patterns...etc.). They felt intimidated and expressed their doubts about the faults, which appeared to negatively affect their self-confidence. Besides this, the time 'wasted' on solving these problems was their main concern. Some felt disappointed as they 'expected to learn more'.

While looking into how low-achievers coped with the challenges of technical problems in multimedia environments, generally speaking, the participants gradually began to demonstrate a relatively positive attitude toward the technical problems. Despite the recurrence of technical problems (e.g. installation, sudden break down, malfunctions) throughout two semesters, they tended to treat technical problems as less problematic and believed that the resultant pressure and anxiety was “a phase” they experienced when they were not prepared either technically or psychologically at the earlier stage. Certain factors were involved here, which will be discussed in the following three sections.

### **7.2.1 General set-up**

In terms of problems with the general set-up, the participants seemed to be more tolerant toward these, especially when they realised the cause might be the quality of hardware or software. Furthermore, according to the observation field notes, by the end of the first semester, there were fewer requests for technical assistance, and fewer complaints or self-doubts, compared with the beginning. Though problems with the software or hardware were still reported during the two semesters, they seemed to learn how to deal with them efficiently by, for example, changing software or moving to different computers without wasting time.

Furthermore, an incident that happened in the third session of the first semester provided more evidence to support the above finding. Due to the availability of other university resources, all the participants had the opportunity to change to a different computer lab which they claimed had better sound quality. Interestingly, this change seemed to bring a relief. For instance, coincidentally, S1, S2 and S4 reported the same incident in their learning diaries. They considered that recording became easier

as they did not need to cover their mouths. Besides, they also felt satisfied, as it proved that the poor sound quality of their previous recordings was not their fault. Thus, this incident is evidence of how technical problems that are outside their control can affect the students' learning behaviour and self-confidence when they are not familiar with the hardware and software.

In addition, a certain degree of familiarity and assurance that was acquired after several sessions helped the students to cope with technical problems. They became involved in language learning tasks comparatively quickly in each session as the setting up procedures became less time-consuming. For instance, S8 and S9 claimed that their familiarity with the software and functions saved time. The experience of using the same software many times helped them become more familiar with operating it. Such self-confidence in managing technical aspects seemed crucial to nurturing their self-confidence and preparing them to tackle language tasks.

One of the reasons for such a change seems to be that, after fully exploring a variety of software and functions, their accumulated skills and the familiarity with the software gave the participants the knowledge and feeling of competence to deal with problems. More importantly, instead of feeling controlled by the software and frustrated, gaining the ability to control the software empowered the learners and fostered their motivation to meet the challenges posed by the new software they used later. For example, S4 tried new software for two consecutive sessions and experienced some difficulties due to "not knowing how to use it initially". In the next session, she then emphasised that, because she was familiar with the format, which is similar to that of the software she had used previously, she could 'control it smoothly',

which is indicative of her growing self-confidence in dealing with the technical aspects of new software.

In brief, the above data show that experience and familiarity with multimedia software and environments helped released the pressure and anxiety caused by technical problems with the initial set-up. Through a process of exploration over a period of time, the feature of control benefited learners and provided opportunities for them. In particular, for the low-achieving participants, such simple success is crucial, as being able to control the situations empowered them and then fostered their self-confidence and motivation to continuing learning. In addition, the discussion with peers was influential in sustaining their motivation, as will be demonstrated later in this chapter.

### **7.2.2 Dealing with record and role-play functions**

Regarding the participants' attempts at coping with the problems of doing the tasks involved in record and role-play functions, a variety of ways to deal with these were identified. Among the problems analysed in Chapter 6, one is the unpredictable criteria used by the speech recognition system (SRS) and the difficulty with self-correction. In terms of sorting out the criteria used by the SRS, some participants reported that they discovered 'tricks' to manage SRS during the second semester. Much time was spent on exploring and experimenting in order to understand the main cause of the failure to meet the standards required by the SRS. However, this process and the success in finding a solution through problem-solving seemed essential, as it provided them with a sense of achievement. Despite the fact that some may not be able to accurately self-correct the utterance, the outcome gave them the direction for

improvement. The following excerpts show how some participants perceived the process and outcomes of discovering a solution and the “techniques” used in coping with role-play function at the second semester:

***S7: I am happy because I can manage the machine better now.***

*When I kept failing to use the role-play function properly, I just told myself not to get mad. That's it! It has been many weeks since I started (using multimedia). I am very happy because I can manage the machine better now. I have more confidence and felt the sense of achievement!(S7, Learning diaries: 13/03/04)*

***S8: I used the role-play...every time...I could identify the stressed words.***

*Now I used the role-play function to practice speaking every time. I would like to take the opportunity to sharpen my speaking skills. In the CNN news, though the broadcaster spoke really fast, I could identify the stressed words she emphasised as long as I paid close attention. This way, I could understand it clearly. (S8, Learning diaries: 20/03/04)*

***S9: For role-play, I found a small technique...I made it!!***

*For role-play, I found a small technique, which was to imitate the intonation and do it slowly. Then, when it's my turn to play, I have to wait for a second and then say it. It helped the computer capture my voice better. In addition, I had to say the same linking sound as the model soundtrack or I would fail to pass it. So I just copied how it said, and I made it!!(S9, learning diaries: 13/03/04)*

Interestingly, some participants reported their findings with much surprise, as they found that the criteria used by the SRS were different from their earlier assumptions. Originally, what they considered crucial for succeeding in the role-play activity was accuracy of pronunciation. Instead, after trial and error, they realised that the system criteria seemed to put more emphasis on intonation and linking sounds than on pronunciation, particularly as a basic requirement. To explore the process in-depth, the following case study (S1) provides insight into how the participants explored and discovered the criteria used by the SRS and eventually mastered the use of the role-play function.

Like the other participants, S1 experienced a long and difficult struggle in finding a solution for meeting the standards by the SRS. She continuously made various attempts at finding out the criteria used by the SRS throughout two semesters. The data from her learning diaries and interview show that she often reported a frustration

with the role-play function because she did not know how to meet the requirements of the SRS. As can be seen, from the five excerpts below, S1 experimented with various strategies and reflected on them in the different sessions as follows:

S1's Statements	Commentary
<p><b>A</b></p> <p><i>It seems Live is very demanding regarding speaking. Though I have adjusted the standard to the lowest, I still cannot pass the challenge. Now my favourite function is recording as I can clearly hear my voice. The one I dislike is role-play because it is extremely hard to speak (like the original). No matter what I said, it won't let me pass. (S1, Learning diaries: 11/11/03)</i></p>	<p>Identify the difficulty of not being able to comprehend the requirements of SRS.</p>
<p><b>B</b></p> <p><i>I used to the Live software today. In the beginning, I roughly understood the meaning. But I still had to listen to it three or four times to totally catch the content. Then I used recording to practice speaking and pronunciation. This time I also used role-play. At first, I kept failing to pass it. I guess it might be because my intonation was not right. If my intonation is more or less similar to it, it still let me pass even if my pronunciation was wrong. However, I found that there was some sounds linked together. That's why I couldn't distinguish it clearly or I could not understand what he said. This is what I still need to improve. (S1, Learning diaries: 25/11/03)</i></p>	<p>Repeat listening to the text ⬇</p> <p>Record to practice pronunciation ⬇</p> <p>Role-play to adjust intonation &amp; identify problems (linking sound) ⬇</p> <p>Set goals</p>
<p><b>C</b></p> <p><i>When I practiced role-playing this time, surprisingly, there was no one single sentence (I said) that could pass in one go. I had to say almost every sentence many times (to pass it). This really upset me! Then I kept trying and trying because I felt very strange. But one time after another, I kept listening to the original and imitating it. I just could not speak the correct sound. Then I got furious and decided to change to play recording. I tried it again till the end of the session and I passed!! I was confused and doubted why I kept failing. Finally I realised it was because of the linking sound. I kept failing to pronounce the linking sound. And strangely, there happened to be many (of them) this time. I was super mad! I definitely had to practice harder next time. (S1, Learning diaries: 02/12/03)</i></p>	<p>Try role-play but failed ⬇</p> <p>Monitor, repeat listening &amp; imitate, comparing with the original sound track (cannot say the correct sound) ⬇</p> <p>Change to record to practice ⬇</p> <p>Self-monitor &amp; identify problems (lack linking sound) ⬇</p> <p>Set goals for next session</p>
<p><b>D</b></p> <p><i>Although there are still some difficulties for me, the role-play is absolutely a fun stuff. I hope I can raise the threshold, like S5. And I want to use role-play every time. With this way, I will know which part I need to improve with my pronunciation. And I truly wish I could immediately speak the linking sound next time. (S1, Learning diaries: 02/03/04)</i></p>	<p>Change attitudes &amp; confirm the value of role-play (correct pronunciation) ⬇</p> <p>Identify problems (speak linking sound quickly) ⬇</p> <p>observe peers (i.e. S5) ⬇</p> <p>Set goals (raise standard) for role-playing next session</p>
<p><b>E</b></p> <p><i>I still use record and role-play. I felt a sense of achievement because I adjusted the threshold to higher today!!... With an easier dialogue, I finished it without any errors. (S1, Learning diaries: 15/03/04)</i></p>	<p>Self-monitor (achieve in using record and role-play) ⬇</p> <p>Confirmation the success in role-playing without errors)</p>

This suggests S1 went through a complex process to comprehend the criteria and meet the requirements of the SRS, which I interpreted/categorised as **two stages**. Although it looked as if it ought to be straightforward, such as process took S1 much time and effort to make sense of **the first stage** of what was required to use the role-play function. However, such a simple success when she had overcome these challenges brought her a sense of achievement. At the first stage, the solutions to identify the criteria of SRS and to pronounce an acceptable sound seemed to emerge one by one. To meet the requirement of the SRS, she realised that it was necessary to pay a lot of attention to three elements of her speaking output, including pronunciation, intonation and linking sounds.

In addition, in coping with **the second stage**, when she focussed on self-correcting her speech, S1 applied a series of *cognitive, metacognitive* and *social strategies* to cope with the role-play function. In terms of *cognitive strategies*, she lowered the standard, recorded to practice her pronunciation, repeated listening or recording the main text, compared with the model and monitored her own speech, and imitated the correct sound. In terms of *metacognitive strategies*, she set short-term goals, self-evaluated, identified problems and used the strategies whenever she needed them. Finally, she applied *social/affective strategies* as she confirmed the success and encouraged herself after tackling more difficult tasks.

Overall, the process of solving the technical problems showed dramatic changes not just because of the effective use of strategies but also because of an enhanced self-confidence. In the interview, S1 recalled the changes during the coping process that led to her increased self-confidence in controlling her learning, as she said, "I also learnt to find different ways to solve problems":

***S1: I also learnt to find different ways to solve problems***

*I did not know how to pass the role-play at first. I thought it was my pronunciation problems. But when I saw S8 pass it without any problems at all, I was shocked and told myself "ok, no matter what it takes, I have to keep madly speaking." I knew I had to keep speaking and speaking. Then I learnt that the intonation was the point. Once the intonation was correct, I passed. I also learnt to find different ways to solve problems. It is fun as well! (S1, Interview 4: 20/03/05)*

As the above comment shows, S1 used a social/affective strategy observing other peers, which seemed to stimulate her motivation and determination to keep searching for a solution. Meanwhile, seeing how others (i.e. S8) succeeded encouraged S1 to make more effort. Thus, it implies that the influence of peers at this stage seemed to have a positive impact on the learners to continue learning and not to give up while tackling the technical problems.

**Coping with problems of capturing sound**

In addition, to make sure the computer software can properly capture sound, it was found that the 'timing', 'volume' and 'pace' of speaking are crucial. Data show that, in various instances, some participants seemed to be more aware of this than others, suggesting that they applied self-monitoring and self-evaluation strategies which led them to concentrate on particular on certain points, such as when to speed up or slow down their speaking speed, when to wait for a short pause before their turn to speak, and when they needed to speak louder. Meanwhile, they showed more effective strategy use by adjusting their speech to match the timing needed to capture sound, some participants also realised that they needed to increase their speaking speed to finish the sentences quickly so that all they had to say could be recorded within the given time. These 'unwritten rules' were not taught but formulated by repeated 'trial and error' on the part of the students throughout the two semesters. Thus, being able to discover the rules was encouraging for the participants, and demonstrated their ability to construct knowledge through interacting with the resources in the

environment. Developing these rules through exploration and repetitive experiments appeared to be crucial for the learners as they became familiar with multimedia environments, which enhanced their self-confidence controlling the learning processes.

### **Using social strategies to solve technical problems**

To solve technical problems, in addition to the self-exploratory process described above, the participants used social strategies. One of these was seeking support from peers, which was beneficial in many ways. During debriefings, they not only shared their problems, solutions or specific instructions for the use of particular functions, but also provided emotional support, such as comfort, sympathy, compliments or encouragement. On many occasions, they searched for companionship in particular and identified themselves as a member belonging to the team that “fights together hoping to make progress in English”. The sense of belonging to a group often encouraged them to persist in solving problems. More importantly, the process of sharing frustration with peers alleviated their sense of failure and anxiety.

Two sets of data from debriefs illustrate how the participants applied *social strategies* and benefited through human-human interaction. Such ‘collective scaffolding’ (Donato, 1994; Vygotsky, 1978) played a crucial role in helping the learners construct a clearer understanding of the challenges they encountered and develop their abilities to handle technical problems. It is noteworthy that the two data sets show two different groups of learners shared their thoughts, advice and opinions when dealing with various problems at different time of the course. In set 1, the main issues the three participants discussed relate to solutions to do with recording (e.g. accent,

recording time, speaking speed) and different ways of using recording. They described the learning process and problems, gave emotional support and comfort to each other, and finally generated ideas or suggestions.

### Set 1

Excerpts	Commentary
<i>S9: One of my biggest problems was I could not record my voice today. I failed many times. I just could not make it!</i>	S9 mentioned her technical problem with recording
<i>S10: Really? I finally made it to record (the sound) today. But my problems were that I felt my accent was not as good (as the original), and I could not catch up with its speed.</i>	S10 had different problems (i.e. accent) for the same function. She identified that the speed was her concern.
<i>S9: Really? I could not record it at all!! Though it gave me some time, the time just ran out before I finished. I knew I was too slow.</i>	S9 again showed her frustration. Same as S10, timing is a problem. S9 then blamed herself.
<i>S10: Maybe. But the comedy series were all very fast like that.</i>	S10 echoed S9's concern and comforted her by sharing information about the software.
<i>S9: I tried to use the slow down function and imitated the way it spoke. Then I recorded it with the speed exactly the same as it said. But time for recording was not changed.</i>	S9 described her attempts to deal with the limited time for recording.
<i>S10: So you have to speed up!</i>	S10 then provided some advice.
<i>S9: You are right. I need to speed up. What about you, S2?</i>	S9 appreciated the advice and invited S2 to join in the discussion.
<i>S2: Well, I just madly recorded my voice today!</i>	S2 shared her experience.
<i>S10: Right. Me too. You must have heard me speaking.</i>	S10 shared the same way of learning and asked for comments on her concerns of making her heard in class.
<i>S2: Yes. But I heard something but not clearly. I just crazily kept recording and recording. I knew I did not learn much about the story, but I just focused on that paragraph.</i>	S2 explained the strategies she used including auditory & selective attention.
<i>S9: Did you want to learn the accent?</i>	S9 discussed her underlying purpose.
<i>S2: Exactly! So I crazily recorded.</i>	S2 felt encouraged when others showed understanding of her purpose.
<i>S9/S10: That's a good idea!</i>	S9 and S10 show confirmation of S2's learning approaches.

(Excerpts from debriefings: 28/10/03)

From the data above, it is clear that the learners supported each other through sharing problems and advice. For instance, S10 provided her experience of using the record function, which involved paying attention to the speed. She also showed her

sympathy by attributing this problem to the nature of the software, not to S9's ability to use it. In addition, S2 seemed to be encouraged when S9 and S10 showed interest and agreed with the purpose behind her learning method.

In addition, the following set of excerpts in Set 2 show how S3, S5 and S8 applied social/affective strategies to obtain emotional support when they encountered technical problems. Contrary to the focus of set 1, they did not actually find solutions to the problems. However, the responses from their peers who had encountered similar obstacles lessened their anxieties or pressure and it seemed comforting for each of them to realise that others also had similar problems and frustrations.

## Set 2

Excerpts	Commentary
<i>S3: I listened to the comedy X and I read three or four of the dialogues in that series. I did not do much because it was weird when I installed it. Then some functions were broken today, such as dictionary and role-play. When I tried to click on them, they suddenly broke down. It's very annoying! Did it happen to you as well?</i>	S3 described the technical problems she came across and asked whether others had similar problems.
<i>S5: Yes. Me too!</i>	S5 had the same problems.
<i>S3: So I could only read the article and the listening test.</i>	S3 complained that the practice she did was limited.
<i>S5: I watched a film today. You know what I found? I found one way is to show the subtitles below the film. But the problem happened when I switch the subtitles from Chinese to English. Because the word order is different between them, it was a little confusing!</i>	S5 shared her excitement and problems using subtitles while using the subtitles function while watching films.
<i>S8: I studied comedy today. I had the same bad luck as S3. It was very annoying! Some functions were not available. When I pressed the buttons, it said 'errors' and jumped to the main frame. So I could not do the speaking practice. I just could do the listening test and watch the video. ...</i>	S8 joined in the discussion and shared her frustrations. Because of technical problems, she could only do limited practice. (Same as S3)

(Excerpts from debriefings: 16/12/03)

As can be seen, the discussion appeared to be negative on the surface as they all had different concerns regarding the technical problems, such as the installation breaking down or malfunctioning, which led to the inevitable consequence of limited practice.

However, such a process provided them with some way of releasing negative feelings. For instance, according to the participants, “complaining and scolding the software and hardware” together with others was fun, which made problems less stressful for them. Thus, these two sets of data reveal how social strategies are employed to generate various ideas in solving technical problems through human-human interaction.

In brief, the above two sections, 7.1.1 and 7.1.2, illustrate the process of coping with the technical problems. In addition, the students used a series of cognitive, metacognitive and social/affective strategies in tackling different learning tasks. For these low achieving participants, the process of finding a solution to the problems with the general set-up and use of role-play and record functions was not straightforward and involved repetitive self-exploration, experiments to test their own assumptions, and interaction with peers, the instructor and computers.

### **7.2.3 Alternative ways of coping with technical problems**

In some cases, when technical problems related to the general set-up or the use of functions could not be solved properly, alternative ways of adapting to the difficulties were found. More specifically, despite a failure installing software or using role-play, some participants still reported their desire to continue learning. They apparently bore their goals (e.g. improving speaking) in mind and were determined to reach them through applying a series of strategies, i.e. their strategy planning and their actual coping with the technical problems. In addition, it was noted that they reported such resolution and showed much awareness of their control at the later stage of the second semester, as stated above. This suggests that the skill and familiarity they developed

with the software and settings enhanced their self-confidence and metacognitive strategies, such as planning and resourcing which in turn encouraged the participants to persevere in trying to reach their goals.

### **Two cases: S8 and S4**

The examples of S8 and S4 give an insight into how they applied various methods to reduce any negative impact from the technical problems as far as possible and to reach their goals.

#### **Case 1: S8**

Firstly, S8 reflected on her struggles and the difficulties of being unable to install software successfully (e.g. "I tried three computers") in two consecutive sessions in the second semester. Instead of waiting or complaining, she applied a series of *cognitive and metacognitive strategies* to keep practicing English as effectively as possible to compensate for the time wasted on the installation. As her goal was to improve speaking and the available material was a printed magazine, she modified her habit of using the printed magazine to suit her needs. Interestingly, instead of reading it quietly, she practiced speaking by used the magazine in the same ways as she did multimedia software, such as quickly browsing, referencing (e.g. checking the definition of keywords), repeatedly reading out the text (similar to record) and playing different roles with different intonation (similar to role-play). In debriefings, she described how she dealt with the failure of installation while making an effort to meet her learning needs without giving up. She consistently reported the same incident and the same frustration again in the learning diaries. She pinpointed the fact that she purposely employed certain methods that she used in multimedia environments to tackle learning tasks with printed materials. In other words, despite the technical

problems, she insisted on using the methods that she considered effective when practicing her speaking. As such, her experience of strategy use with multimedia and the awareness of her set goals, stimulated her determination and, to a certain extent, reduced the negative impact of the technical problems. Eventually, this became a powerful force that intrinsically strengthened her will to keep learning, as she said, “I must harvest today!”:

**S8: I must harvest today!**

*I wasted most of my time on installing today. I don't think I learnt much...After continuously failing to install it on three computers, I gave up because I spent so much time on each installation. I didn't want to waste time anymore ~. So, instead, I kept reading the Live Magazine, Feb. (printed) version. I quickly browsed the content to understand the main ideas and checked the words I didn't know. With the conversation, I read out the content, just like the way I used to role-play with the multimedia. And then I practiced speaking. The feeling for today's (session) is like ---> thriving to survive in a difficult condition. While watching others happily use computers, I only had a magazine to accompany me..... But for the sake of practicing English, I must have harvest today! The magazine is kind of multimedia as well! (S8, Learning diaries: 11/03/04)*

In addition, as the data indicates, the presence of peers also provided S8 with the strength to persist so that she did not give up easily. Despite her difficulties, after such an experience, S8 seemed to become aware of how to manage the technical problems and to learn effectively. For instance, she planned in advance for the time when the same technical problems might happen again, which shows how *metacognitive strategies* were applied to control her learning. The evidence can be seen from the next session. Though she had no problems with installation and appreciated the learning process, she realised the importance of preparing an “extra magazine” to learn effectively, as she stated, “It is time-consuming if installing software takes too long. Next time, I have to prepare an extra magazine in case I need it”. In brief, S8's case showed different factors were involved. That is, familiarity with the software functions and learning patterns in multimedia environments and the use of different strategies, cultivated over time, which enhanced her self-confidence. In addition, the presence of peers and awareness of the goal she had set herself

motivated her to persist despite the difficulties caused when technical problems could not be solved (see Appendix F, 7.2.3/a, for further data).

## **Case 2: S4**

Furthermore, S4's case demonstrates another instance of dealing with different technical problems. Instead of having the problems with installation, S4 encountered a technical problem which prevented her from using the function she had often used previously. This was an obstacle for S4 as she often reported using it and found it very useful in correcting her speaking output. According to data from self-observation, she indicated several functions that were not available that seemed to affect her learning, particularly speaking, as she could neither record nor role-play. She explained how she dealt with these problems and tried alternatives (e.g. read out the text) to practice speaking as much as she could. She wrote:

***S4: ... I did not know how to use it. Then I just worked hard in reading out the article. I was listening to a programme talking about a festival in Taiwan... there are so many functions that did not work. I could barely record anything. The role-play is also weird! I was frustrated because the role-play did not seem to work properly. It jumped to the next sentence before I finished. There was a bit problem with it. I wanted to record but I did not know how to use it. Then I just worked hard in reading out the article. (S4, Self-observation: 16/05/04)***

Like S8, as her goal was to improve speaking, she flexibly adapted to these technical problems by changing the methods she usually used. She claimed the way she dealt with the problems was to keep speaking, such as reading aloud and playing different roles. Similar to S8, she persisted in trying to reach her goal by ignoring technical problems, as she said "I would try other ways if the computer could not interact with me" (see Appendix F, 7.2.3/b, for further data).

To sum up, as the data show, to some extent the participants appeared to learn how to manage technical problems. Meanwhile, with a strong awareness of their goals, the participants showed much motivation in flexibly applying various strategies that they believed to be effective in helping them reach their goals, and self-confidence in controlling their learning. Eventually at the later stage, without being hindered by these problems, they gradually learnt to be in control and to reach their goals. The presence of peers also played an important role in providing motivation to continue learning. Finally, the goals they set seemed to guide them regardless of the technical problems they confronted.

### **7.3 Coping with obstacles to managing learning**

#### **7.3.1 Managing software**

Some of the awareness and thinking devoted to planning and choosing software is identified. Throughout the two semesters, a series of processes were reported which benefitted the participants in achieving such an outcome. First, their exploration of, and familiarity with various levels or contents of software during the first semester helped them recognise the advantageous features provided by multimedia learning environments and the options they could choose, in terms of the level of content, requirement of the learning tasks and application of various functions. Second, frustration when using inappropriate software seemed to urge them to take practical steps and reconsider their learning needs and software level while selecting what was suitable for them. Initially, they were tempted by many software choices. However, in addition to fun and interest, the participants seemed to use more appropriate/sensible standard when they self-assessed their learning needs, their proficiency level, efficiency and their goals. Lastly, evidence shows that some

learners set targets for themselves and adjusted these according to their changing needs, abilities and goals. Particularly at the later stage in the second semester, some trends emerged showing that the participants who used intermediate level software changed to use advanced levels when they felt they were prepared to “upgrade”. To demonstrate the above, data from three participants shows the complex process of how they developed such awareness and thoughts in selecting appropriate software.

### **Three case studies: S1, S2 and S4**

#### **Case 1: S1**

S1's case reveals that the process of exploration led to frustration and the need to re-think the choice of software but, nevertheless, was instrumental in stimulating her interest and intrinsic motivation to continue learning. As mentioned in Chapter 6, in the first seven sessions, S1 reported her constant and random changes in software without giving much thought to its appropriateness. Choosing software far beyond her abilities caused much difficulty, anxiety and self-doubt. However, it also helped her recognise the discrepancies between her proficiency and the level of software she choose, and the problems this caused. Providing her with control over her choice of software seemed to intrinsically motivate her to persist in dealing with various problems she confronted, as she said “I had more interest in listening to it when I could catch up with what it says”. In her view, the more understandable and ‘easier’ content engaged her learning and also reinforced her perseverance in dealing with fears and worries caused by technical problems (e.g. cannot hear recorded voice) and linguistic difficulties (e.g. cannot pronounce correctly). While interviewing S1 at the end of the first semester, she reflected on her appreciation of these changes gained from the process and interaction with multimedia environments, as she stated:

***S1: Because I could understand it, I feel like listening to it a few more times. I firstly used to try Caroline (Comedy). It was very hard because the humour was too difficult to laugh at. Besides, it was so fast that I could not catch what it said. I was frustrated while using the comedy. After using Live, I think it is quite good. At least, it is much simpler. Because I could understand it, I feel like listening to it a few more times. Also it was very practical with some interesting topics, such as house rental, asking for directions. I never got tired of them. (S1, Interview 2: 16/12/03)***

Thus, the difficulties appeared to raise her awareness to monitor her own needs. At the end of second semester, she further confirmed the advantages of being able to select the software level that best met her needs. She gained more confidence (e.g. “I could understand it”) and was more motivated to learn the contents (e.g. “I feel like listening to it a few more times”).

## **Case 2: S2**

Similarly, S2 changed her approach and chose the same series of intermediate level software as S1 for a slightly different reason. She discovered that choosing practical and useful contents motivated her to continue learning. As discussed in Chapter 6, she chose a comedy series initially and encountered many difficulties in comprehending the content of the advanced level software. Her strong emotional reaction (e.g. “furious” and “felt like hitting the computer”) to poor test results (i.e. “nine mistakes out of ten questions”) shows that inappropriate software might cause frustration and negatively affect learners’ willingness to learn. Such frustration at an early stage was commonly reported and shows that selecting software can initially be a daunting task. However, S2 reported a change of attitude after selecting the software she considered “practical and fun and easier” which met her needs:

***S2: I was very glad I changed to learn this...I could write almost every word (correctly). I chose to use LIVE Interactive English today. This is the first time I tried new stuff. I was very glad I changed to learn this because I felt that the contents were mostly daily-life conversations, which were more practical and fun. ...It is amazing that I could write almost every word (correctly). Yeh!! I was super happy. Although the words were awfully easy and they were just prepositions, I was still very happy about the results. YA..... ^\_^ (S2, Learning dairies: 28/11/03).***

As shown above, strong but positive emotion expressed through the symbols and statements, and the success she gained from simple tasks brought her a great sense of achievement. Testing results seemed to reinforce her confidence, though she knew the tasks were “awfully easy”. According to the first interview, S2’s great concerns seemed to be lack of motivation and interest in learning English, caused by the failure she had previously experienced in class. Success in doing such tasks is crucial for low achievers, like S2, to build up their confidence and maintain their motivation.

### **Case 3: S4**

Likewise, S4 had similar ideas about the criteria for choosing software. She regarded choosing “simpler” software with content that could be applied in context to daily lives, was beneficial at the initial stage. The data from learning diaries showed that she explored advanced level software initially but discovered through exploring various kinds of software, that these varied in nature. She seemed to be aware of what she needed and started to plan by setting goals early in the first semester. In her learning diaries in the first semester, she pinpointed the difference (e.g. vocabulary and speed) by comparing two sets of software she used. Later in the interviews, she indicated a frustration which triggered her motivation to change her learning approach and reconsider more carefully how to develop her proficiency to meet her goals step by step.

Thus, while exploring software in multimedia environments, the problems and challenges appeared to raise the participants’ awareness of their learning needs and urge them to search for alternatives when selecting software that met their needs. And using software of a ‘lower’ (intermediate) level was considered as an aid to “build a foundation” and cultivate self-confidence.

Interestingly however, it is noted the selection of software depended on their changing needs, abilities and goals at different stages. In other words, during the second semester, the participants seemed to be able to change to software of different levels according to their needs. Based on their previous experience and knowledge about the software they explored or shared with others, the evidence shows that the participants took full advantage of what the multimedia environments offered and selected software to meet their needs at different stages. A compelling example that some participants reported, as part of their plans, is that they attempted to meet the challenge of the advanced software, such as comedies and news in the second semester, which had been considered a demanding choice in the first semester. Thus, they seemed to be more aware of their needs as they knew when they were ready for more demanding software. Being able to judge how and when to change the software suggests they were able to use metacognitive strategies, such as self-monitoring, planning and self-evaluation (see Appendix F, 7.3.1/a, for further data).

In brief, from the above analysis, the participants reflected on their choice of software, of a lower level and with more practical contents, which illustrated their various reasons, beliefs and intentions. Through learning to choose appropriate software, some learners believed that experiencing success could motivate them to continue learning; some regarded it as a way to build up their confidence; some showed clear goals and further ambitions, since they treated this stage as a 'stepping stone'. As such, through selecting suitable software, the multimedia environments appeared to engage the learners in situations where they had to exercise different metacognitive strategies, such as self-monitoring and planning in order to manage learning software.

### 7.3.2 Adjusting learning pace

Regarding managing learning pace, I explore the participants' experiences of dealing with the challenges mentioned in Chapter 6, including how frequently they used the software and adjusted the learning procedure in each learning session to make better use of their time. In fact, the problems of adjusting learning pace were not seriously considered initially when the participants were still exploring different software and functions. Without a goal and without pressure, they contended that they randomly changed software during every session and seemed to lack strategies to control their learning pace. As a result, their views regarding the inefficiency of their learning, such as "time goes very quickly and I did not know what I have learnt", and "I am worried I would fool around" emerged, and led to a state of anxiety and self-doubt.

However, the data reveals that, until the end of the first semester, the participants reflected on their awareness of the problems (i.e. inefficiency and limited progress) and need to take action to adjust the learning pace. On the one hand, they appreciated that their motivation was stimulated through a process of controlling pace in multimedia environments; but they were also aware that they did not do it well and that more effort was needed such as "set a goal", "improve it" and "make some change". The following reflections from the focus groups and individual interviews show the change in attitudes and raised awareness:

*S1: I believe I still can make progress in multimedia environments though the progress is just a little and slow. But I learnt very ineffectively. I know I should follow a plan while learning, which helps me to check the learning effect. Wanting to learn is the most important thing. Multimedia makes us want to learn more (comparing with the conventional environments). With willingness, we will learn it and make progress.*

*S3: I like this way to learn with my own pace. I used it whatever I liked. So far, I did not do it well and did not learn much, maybe because I used new software every time; or maybe because of my part-time job. I did not spend enough time to review it. So I forget what I learnt very easily. I hope I can improve it next semester.*

*S6: I could not always finish one CD in one session. Then I changed the software next time. I did not remember what I have learnt. This way did not work. I have to make some change.*

*S8: Usually I will think what I have to learn when I get the CD-ROM. But now I roughly know what I want to learn. My goal is to practice speaking. I should focus on this part whenever I use the software*

(Focus group 1: 20/12/03)

As shown above, the participants reflected on the problems and they strove to make improvements. Among the strategies they employed to control the learning pace, one was to set goals and plan the duration of software use. It was found that, generally at the end of the semester or at the beginning of the second semester, some participants reported that they had arranged the frequency of software use in a regular pattern. More specifically, they attempted to use the same software consecutively for more than one session, which they considered as an effective method. In their views, as they slowed down the pace, their comprehension improved in the lessons, which in turn helped them master the learning contents and experience a sense of achievement. For instance, in S1's case, her problems forced her to adjust her approach so that she used the same series consistently. She used the same software for two weeks as she considered this as an organised way to learn. Her confidence was manifested when I interviewed her regarding her coping strategies. She commented, "Slowly, I found my way":

*S1: Slowly, I found my way now.*

*I used to change software every time. It was fun. But I found it was not very useful. And I usually could not finish studying one CD-ROM each time. It seemed not so organized when I absorbed different things every week. So later I decided to use the same one. I kept changing different things before. But now I usually use the program for about two weeks to finish it. Slowly, I found my way now. I chose the part I like to start with. Everyone has his or her own style. Not everyone can do it the same way used in class. (S1, Interview 2: 19/12/03)*

Coincidentally, in her learning diaries, she reflected on the same plan and the positive results from it. She completed all the lessons on the same CD in two sessions and emphasised that finishing one CD gave her "a real sense of achievement". In addition, as she tackled challenges by raising the threshold, she was very satisfied with the learning outcome and further confirmed her strategy for adjusting software use (see

Appendix F, 7.3.2/a, for further data). For low achievers like S1, completing a CD-ROM and mastering the learning contents are crucial to enhancing self-confidence, as it proves to them that they are capable of planning, self-monitoring, adjusting strategies and achieving their goals. In addition, through developing her own style, which she was unable to do in a conventional class, it was noted that she knew what she needed and took full control of the learning contents and pace.

Like S1, S3 also applied a similar strategy in that she set a goal for the second semester, which made for a profound change. It was noticeable that her exploring stage was longer than the others as it lasted one semester and caused great confusion (see also Chapter 6). This issue was brought up during the interview at the end of the first semester. The interview and questions seemed to help her to critically consider her learning problems “changing software every time” but “not learning as much as expected”. Accordingly, at the end of the interview, she recognised that there was a need to set a goal, as she emphasised:

*S3: I hope I could set a goal and achieve it through it is just a small goal. I hope I could set a goal and achieve it though it is just a small goal. With the goal, I would know what I am learning. My goal is hoping to stick to the same software for the next few sessions, like we just discussed, to see whether I could learn something. (S3, Interview 2: 19/12/03)*

Surprisingly, such a “small goal” actually led to an astonishing transformation in S3 during the second semester. Evidence from her learning diaries shows the pattern of software use was relatively stable in the second semester. She not only followed her plan by using the same software consecutively for five sessions, but also adopted other strategies to facilitate her learning, such as reviewing previous lessons at the beginning of the current lesson, using the same notebook to note down the key points, practicing small chunks one at a time and so on.

Consistently, similar evidence was identified in the third interview when she reflected back regarding her overall changes, including goals, autonomy, attitudes and self-confidence:

*The researcher: What do you think of the difference between this and the previous semesters, in terms of your learning attitudes and learning methods?*

*S3: Well, I had much curiosity in the first semester. Because I was new to it, I would surely be more curious. This term, I knew more about how to use them. Then I planned what I want to study. I firstly used Live. Then I changed to use CNN. I know I slowly made it. (S3, Interview 3: 20/05/08)*

Thus, this detailed analysis of S3 and S1's experience demonstrates how the impact of goal-setting in adjusting software use can affect learners' attitudes. Unlike the sense of loss previously experienced, they had discovered clear goals and took actions to achieve these. In addition to mastering learning contents, using software in a stable manner benefits learners by improving learning efficiency. More specifically, because of familiarity, it saved time and helped the learners build up learning patterns that suited the needs of each individual. Also, instead of being distracted by exploring new software, they were more engaged with the language learning tasks.

### **Adjusting learning procedures**

In addition to adjusting the pace of software use, another strategy the participants employed to control pace was arranging certain learning procedures, at a certain time, to achieve the best outcome. Firstly, some participants tended to do particular tasks at the beginning of each session for the purpose of consolidating and 'warming up'. For instance, S3 considered reviewing the previous lessons and notes as an effective method that could "deepen the impression" of the knowledge she learnt.

Secondly, some participants considered choosing what they were interested in as an effective warm-up activity, which provided them with something to look forward to

and motivated them to learn. They emphasised that they would start with the parts that they liked, such as videos, films, commercials or MTV. However, for different purposes, some participants attempted to use the same tasks as a “reward” as they planned to do at particular times during the sessions. In their view, when they were not able to concentrate on the learning tasks, “taking a break” could enhance efficiency. It is noted that they appeared to bear these goals in mind when they arranged the tasks for various purposes. They regarded this as an alternative to enhance their learning outcomes. For instance, S5 claimed she still did the dictation tests to check her progress afterwards, and S8 said she would turn off the captions to test her listening comprehension, which implies they were flexibly applying different ways to learn in multimedia environments with the goals they had identified guiding them (see Appendix F, 7.3.2/b, for further data).

### **7.3.3 Self-assessing progress**

As mentioned in Chapter 6, initially it was very difficult for the participants to justify their progress, as shown by the confusion they reported regarding the vague, unstable or sometimes contradictory feedback from the software. According to the discussion in the focus groups, their over-reliance on teachers and tests may have contributed to their lack of self-confidence, as they thought that “Teachers are tools of evaluation” or “there are tests to tell you how well you learn.”, which means teachers used to be the ones who assessed their learning outcomes in class. While learning in a self-directed multimedia environment, apparently they were not prepared nor had the confidence to assess their progress. This is consistent with Wenden (1991, 2001) who considered a lack of self-confidence in the ability to take responsibility for one’s own learning can affect a learners’ willingness to do so.

Additionally, the methods they initially adopted for assessing their progress was limited (e.g. how many words they remembered) and mostly test-oriented. These appeared to be inappropriate as they were aware of the importance of self-assessment while learning in self-directed multimedia environments. For instance, S4 pointed out that tests cannot meet her needs as there was progress that the tests cannot fully assess in multimedia environments; S5 showed her different attitudes towards assessment between the multimedia and conventional classes, as she identified the importance for learners to take responsibility for their own learning and use their “own way” to assess progress, as they said:

**S4: ... tests cannot evaluate certain progress I have made.**

*There is pressure as long as there are tests. If the teacher does not check the result, I won't mind doing tests mainly because I am curious about whether I have made progress after using multimedia. But I guess the progress won't be very obvious. I mean tests cannot evaluate certain progress I have made. (S4, Interview 2: 19/12/03)*

**S5:...with multimedia, you have to use your own way to evaluate...**

*In class, I think only through tests, they can evaluate what we have learnt. You won't think whether you have made progress or not because there are tests to tell you how well you learn. If I pass the tests, that means I have absorbed something. That was done. But with multimedia, you have to use your own way to evaluate what you have learnt. (S5, Interview 3: 17/05/04)*

### **Redefining progress and applying multiple methods to assess progress**

Additionally, instead of merely relying on testing, the data indicates that, from the progress they reported, they seemed to redefine it in a more diversified, on-going, process-oriented approach. They applied multiple methods with various criteria, which appeared to be much more elaborated than their initial approach. More importantly, their assessment constantly involved the use of a variety of *metacognitive strategies*, such as planning, self-monitoring, evaluating, adjusting learning goals, etc.

Firstly, ‘the feedback from the software’ was still one of the criteria used to measure their progress. Comparatively however, the participants seemed to be able to evaluate

their quality of interaction and interpret their responses more flexibly when they assessed their own choices according to their individual needs. For instance, S4 considered her speaking fluency was improved due to 'being stopped less frequently' while role-playing. Regardless of her initial concerns about pronunciation, she recognised her progress by comparison with her previous performance. In addition, after raising the threshold, she responded to negative feedback in a constructive way, which helped her to monitor her progress and adjust her learning:

*S4: I did not feel frustrated, as I know I was not ready.*

*S4: In the two semesters, I think I have improved my speaking, and its more fluent now.*

*The researcher: How do you know you made such progress?*

*S4: When I speak (to the computer), it will pop up some comments telling me, like "It is not right", if I speak incorrectly. Well, comparatively, I do not get such comments as often as I did before. Sometimes, I would try to raise the threshold a bit higher. But I could not pass it. I did not feel frustrated, as I know I was not ready. I will simply click on "pass" and move on. (S4, Interview 3: 20/05/04)*

Like S4, S7 also identified her progress in speaking, through the feedback from software. The response from the computers was confusing and frustrating initially as she did not know how to deal with the time allowed for recording (i.e. she was not able to finish speaking the sentences). In contrast to S4 who failed to pass the higher threshold, S7 succeeded without being stopped. The positive responses from the computer confirmed her continuous efforts and reinforced her confidence in setting further goals, as shown in the following statements:

*S7: It's been such a long time...but eventually there is some progress.*

*S7: I finally made a little bit of progress. I used microphone to role-play today. But it was amazing as I spoke only once and passed it without any repeating. Ha! Ha! I am very pleased ^o^. (S7, Learning diaries: 21/10/03)*

*S7: Today I was very excited because I raised the threshold to the intermediate level. And surprisingly, I passed it !! I am--- TRUELY--- happy...^++++^ It has been a long time and I felt somewhat discouraged. It is so tough, but eventually, there is some progress....I found that if I continuously practice speaking, slowly I am able to raise the standard to be higher and higher! (S7, Learning diaries: 18/11/03)*

As shown, 'raising the threshold' served as an indication of improvement and their further goals. Similarly, S1 reported success using the role-play function, as she

confirmed through the interaction with computers. In her views, 'Being able to finish role-playing a whole dialogue without being stopped' (to repeat the text) and 'adjusted the threshold higher' represented her progress, which brought her a sense of achievement.

In addition, some participants confirmed their progress through 'applying a combination of criteria'. For instance, S6 was very concerned about issues of progress and learning efficiency at the end of the semester. She developed clear goals and had a strong motivation at the beginning of second semester, emphasising that her attitude toward multimedia had changed and had become more serious after exploring the multimedia software in the first semester.

***S6: There is a goal for me to learn in this semester.***

*Different from the last semester where I often wandered around and tried different stuff without knowing how on earth it could help me, now there is a goal for me to learn in this semester. Whenever I come, there is an aim. I would think something like 'what I definitely had to see, or what I had to learn'. It is not like the last semester. I did not notice the change at first. But then I found that 'Wait! I seem to want myself to know and learn more with multimedia'. Then I decided to devote myself to it. I guess, by doing so, I would know what I have learned if I accumulate the knowledge twice a week. (S6, Interview 3: 20/05/04)*

During the second semester, she kept reflecting on her progress in listening and reading skills throughout her diaries and interviews. S6 used a combination of methods to assess her progress, such as the score results through testing her own criteria of comprehension and how she tackled the audio of advanced software (i.e. comedies). Finally she confirmed her success by saying, "I was very happy because I made progress. Yes!" (see Appendix F, 7.3.3/a, for further data).

Another criteria some participants applied to assess their progress was 'the selection of certain functions or software'. Some participants judged their progress by noting that they used help functions (e.g. translation, dictionary, repetition, etc.) 'less

frequently'. In their view, not using them regularly was considered an improvement in the later stages, though they particularly appreciated the help functions in the earlier stages as these helped them more easily comprehend the text. In addition, having the courage to use certain demanding functions, such as role-play, was considered progress. For many participants, managing role-play requires a degree of self-confidence and ability, as to produce an acceptable utterance demands both listening and speaking skills, such as imitating intonation and proper pronunciation. The data shows that some participants reported being frustrated with this initially but used speaking functions without fear eventually, which they considered an achievement. Furthermore, being able to catch up with the speed of advanced software' and comprehending it, was considered as progress. Some participants set it as a goal that they would try to achieve in the later stage, as it required courage, abilities and skills which they were hesitant in trying initially.

### **The progress related to learning in a conventional class**

In addition, the participants considered certain changes related to learning in a conventional class as progress. One of these is a feeling of motivation and a positive attitude towards a belief in their ability to learn while listening to the target language in class. Their attitudes were apparently less resistant towards the lectures, peers and the instructors, as shown by their willingness to listen to, or guess what others said. Some reflected that their comprehension of teachers' lectures was improved and they seemed to be able to concentrate on listening to others in class. It was particularly encouraging for them when they compared this positive change with their previous negative learning attitudes. For instance, S2 reported an improvement regarding her learning in conventional classes. In her view, the major change was that she was

more 'willing to try to understand what others are talking about' (in English) in class. Through various remarks from her email message (below), she vividly reported on her progress and her amazement regarding the significant change she had brought about in herself:

***S2: I tend to be more concentrated on listening to others speaking English***

*After learning multimedia, in terms of learning English, it seemed that I did not learn much faster nor did I learn any skills. >"<. But I felt that, comparatively, I tend to be more concentrated on listening to others speaking English because I am willing to try to understand what others are talking about (though I still don't understand them). And I won't be resistant to this language that much. For instance, last week, at first I was frightened by the new English teacher because she had spoken only English, except for four Chinese words, since she came into the classroom. But I STILL tried hard to listen to every sentence. Though I only understood a little bit, I was super-excited whenever I understood one sentence! Then I kept telling S1 (sitting next to me) I UNDERSTAND WHAT THE TEACHER SAID. This is just too amazing!!^~^." (S2, Learning diaries: 18/11/03)*

Later in the interview, she reflected on her change of attitude and further interpreted these: she indicated that her faith in coping with listening difficulties appeared to contribute to a 'good cycle' that led to positive thinking and more self-confidence, as she said "...I am still learning...there is still space to be improved".

S1, in addition, asserted that the progress she made was in having less fear of the class and the teachers and more willingness to understand the lesson. This helped her deal with the main concern she had since high school, which was 'escaping' from the English class. S4 identified an improvement in her listening had and considered that understanding what the teachers said had contributed to her improved concentration and persistence in class, which motivated her to guess and enhanced her positive attitude toward the target language. In particular, the participants considered 'positive attitudes during the learning process in conventional classes' as progress. Such progress should not be limited to the learning outcomes (products) themselves but also to the impact of the students' attitudes towards their learning in both multimedia environments and conventional classrooms, such as more concentration on listening

to others, less fear of speaking English, more motivation to learn English, and so on. To sum up, obviously, the participants experienced change and the need to develop different means of evaluating their progress in multimedia environments. Before starting this research project, most participants appeared to apply a limited range of methods to measure their progress. They mostly relied on tests and teachers to assess their progress. Meeting the course requirements and doing tests used to be the major means of evaluating how well they learnt in class, though they still felt under pressure when their performance was compared with others' (see Chapter 6). However, the data shows that the participants gradually developed an awareness of the need for self-assessment and identified their progress as multifaceted and process-oriented.

#### **7.4 Coping with difficulties in language learning**

This section focuses on how the participants coped with the challenges of learning listening and speaking skills in multimedia environments. While self-studying in multimedia environments, the participants confronted various language learning problems, especially learning listening and speaking. As mentioned in Chapter 6, several reasons seemed to contribute to the difficulties, including *affective factors* (fear, anxiety, low self-confidence for the target language, negative learning beliefs and perfection for the utterance, and difficulty imitating a foreign accent or intonation), *limited language abilities* (e.g. limited vocabulary and lack of sensitivity to identify or produce phonological elements), and *ineffective strategy use* (e.g. selecting inappropriate software, much time spent on checking meanings for every unknown word without guessing). Therefore, in this section, the themes will be discussed at the same time to investigate the process of coping with language learning problems.

### 7.4.1 Overcoming fear

In terms of coping with the fear of speaking English, most participants seemed to be relatively more relaxed at the end of the first semester. This could be seen by their body language, for example, most of them did not cover their mouths while recording, and occasionally some participants still observed others, but not as often as at the earlier stage. Many reasons seemed to contribute to this. Firstly, the 'atmosphere' changed and became more open to speaking practice. As the group dynamic was relatively friendly and supportive, most participants showed their enthusiasm for group discussion, which seemed to motivate them when dealing with speaking and listening tasks (see Appendix F, 7.4.1/a, for further data).

Secondly, fear of speaking caused by the presence of peers seemed less threatening. The strategy some reported was to observe other participants who 'dare to speak or sing loudly'. For some participants, like S3 and S5 who felt intimidated about speaking, there was a much longer 'observation period' before they had the courage to do speaking practice. They tended to observe others frequently and avoided using any speaking-related functions. However, their concerns about not speaking well or being laughed at seemed to gradually reduce as soon as they realised that others (e.g. S12 sang loudly in a funny voice and S8 spoke loudly) dared to speak, sing, or 'make fools of themselves' without any negative feedback. It also encouraged them to be more willing to use the speaking functions, as shown by the following statements coincidentally given by some participants. For example, S7 was too shy to talk to the machine using role-play initially. However, she was encouraged when one student dared to sing.

Similarly, S4 gave a similar reason. She felt fearless about speaking up when she found others dared to do so. In addition, the awareness of learning goals and the self-confidence from controlling the learning process made her less concerned about how others judged her, as she said “I guess I learnt to compare with myself”:

***S4: when I saw everyone else dared to speak up loudly, I became brave... I was scared of speaking poorly because it was shameful. Although everyone was studying their own materials, I still worried about losing face if others heard my poor English. Then when I saw everyone else dared to speak up loudly, I became brave enough to do so as well. I guess I learnt to compare (the outcome) with myself. (S4, Interview 4: 02/04/2005)***

As can be seen, the influence of peers seemed to be multifaceted throughout this research. It played an important role in encouraging those participants, who were self-conscious at first, to speak up at the later stage. Such a change may indicate that the threat from peers was reduced and the modelling of peers served as a strong force to strengthen their willingness to speak.

Thirdly, the self-confidence generated from much practice helped the participants become more used to the target language and less worried about their output. Some participants indicated that their progress and sense of achievement encouraged them to speak up. For instance, S3 indicated she had gained much confidence from “practicing frequently”, which helped to reduce her fear of speaking since she believed that she was “slowly making progress” and that she “can improve her English”. She also felt that “often touching English” gave her chances to practice.

***S3: I don't feel very afraid of speaking English now because I listen to English more often. I guess I can understand it more. I would listen to dialogues or articles in advance. In this way, I can be involved with the situation more easily. Also, because of practicing frequently, comparatively I would dare to speak.....In the past, I would not even like to touch English at all because I could never learn it well no matter how hard I tried. It made me feel annoyed! It's different now. I felt that, because I'm slowly making progress, I believe I can improve my English to be much better. (S3, Interview 3: 20/05/04)***

#### 7.4.2 Tackling listening and speaking problems

This section will explore how the participants used multimedia functions and strategies in coping with speaking and listening problems. It is noteworthy that certain software functions were reported to be particularly helpful when coping with listening or speaking difficulties. The one they regularly reported was '*repeat*', as it appeared to benefit the low achieving learners mainly in two ways. One of the advantages was that the repeated listening provided plenty of opportunities to be immersed in the phonological elements that they once felt unfamiliar with or resistant to, such as accent, intonation, linking sounds or sentence stress. Some participants indicated they were "more used to the English intonation if they listened to it more often". In terms of semantic difficulties, because the repeat function slowed down and/or vary the speed, they could comprehend the contents and look into the meaning of unknown words so that the texts they heard were not "big chunks".

In addition, the sense of self-confidence from repetition of listening helped them to lessen their fears and anxieties due to not being able to catch the fast audio speed. As they said, 'Listening to the content as many times as needed' seemed to be crucial, especially in the first semester when initially confronted by fast speech. In their view, "touching and listening to English regularly" helped them become familiar with the target language. Being able to understand the contents helped them build up their confidence and motivation to continue the tasks. Interestingly, some participants reflected on the fact that the speed seemed to 'become slower' after they repeated the same contents several times or came back to the same materials after tackling the advanced software. In fact, the audio speed is the same. Nevertheless, I suspect that because of the change in attitude or self-confidence, the learners seemed to find the

same tasks easier and the speed slower. This is consistent with previous studies that pinpoint that it is very common for inefficient learners who want to be able to repeat a listening activity (Buck, 2001).

In addition to the *repeat* function, data showed that some participants became flexible in adopting alternative strategies to cope with the problems, according to their different needs. For instance, S2 attributed her progress to the use of *repeat* and *record* functions. Especially, repeated listening provided her with “more chances to touch English”, which in turn reduced her fear of the target language. She emphasised that she had “more feeling for it”, which helped her to guess, even when there were unknown words. This progress in listening enhanced her self-confidence and her fear was reduced. As she said,

*S2: I think I have improved my listening as I can understand more and I won't be stuck because of one or two unknown words. I won't be so worried if I cannot understand something. I can guess.*

*The instructor: How do these changes happen?*

*S2: It's maybe because I used to be very scared (of English). I used to feel very unfamiliar with English, so I became afraid of it. Now I do not think so negatively. And if I guess, I can probably guess it correctly. Perhaps, I have more confidence and I won't be so scared of it. It might be because the multimedia gives me more of a chance to touch English, especially listening. In listening, I made much progress. Because I repeat the listening and I practice every week, I have more feeling for it. It helps me to guess more easily. (S2, Interview 3: 20/05/04)*

Furthermore, in the interview, S2 repeated the importance of gaining a feeling for the target language and contended that the *record* function influenced her learning in multimedia environments to a great extent, as it engaged her in constant speaking practices. Compared with her limited involvement in conventional classes (e.g. sleeping or daydreaming) (see Chapter 4), the record function encouraged her to become actively involved in speaking activities, which reversed the situation as it helped nurture her sensitivity to English. As such, this in turn enhanced her self-confidence in trying to guess the parts she didn't know while listening.

Likewise, S6 shared the same attitude as S2 in applying the *repeat* function to overcome the fast audio speed. She indicated that she “kept playing and playing it” till she understood it. Furthermore, she applied other strategies at the same time, including doing tests and paying much attention to a particular text, to confirm her comprehension. As she said:

*S6: I used Caroline comedy more smoothly today. I spent most of the time listening to the dialogues. Comparing with the first few sessions, I could catch its speed now. I also used the testing part. I got 82 in listening, which was better than the score (70) last time. I was very happy because I made progress. Yes!*

*S6: I just kept playing and playing it till I understood it. And I must pay much attention to listen to it for several times. Repeat is the function that I felt very helpful in improving my listening. (S6, Follow-up interview: 08/03/04)*

S9, similarly, adopted the *repeat* function for solving listening problems. Instead of repeating whole dialogues, she chose to focus on “the particular parts for several times”. In addition to *intensive and selective listening strategies*, she applied *post-task questions* to clarify her comprehension. S4 also indicated that she used other strategies to solve listening problems. One was to divide the long passage into several shorter portions to make it more interesting and less confusing. Another strategy she used was to pay special attention to ‘the pre-reading questions’ to obtain background ideas and to predict the main ideas.

However, the use of the *repeat* function is not static. In other words, the extent of reliance on the *repeat* function changed when the learners became more competent, independent and confident. The data shows that, some participants were aware that the frequency with which they used the *repeat* was reduced in the second semester, which they regarded as “progress”. This implies that they were able to adjust the use of *help* functions, such as *repeat*, according to their changing needs. For instance, S4 was satisfied when she realised that she did not have to rely on the *repeat* function as

much as before. She contended the main strategy she used to tackle the advanced software, CNN news, was “listening to it a few more times”. Apparently, she was able to identify the different ways she used the *repeat* function at different times; one is ‘the times she pressed repeat was reduced’; and the other is how much she understood and how quickly when she repeated the same content, as she said:

*S4: The way I dealt with CNN is to listen to it a few times. I found the times I did this became fewer because I did not keep pressing repeat. I can understand more now. In the past, I could not understand much even when I repeated many times. (S4, Self-observation:06/05/04)*

Secondly, to tackle the vocabulary problems in listening and speaking tasks, some participants considered the *dictionary function* to be beneficial for different purposes. For instance, S3 regarded the *dictionary* function as a convenient and effective tool in learning and remembering the vocabulary efficiently. As she stated:

*S3:With a click on the word, it quickly gives the definition, an example, and sometimes phrases. It also reads the words to me, which helps me to remember. Also now I have a habit that I feel I like to read it out whenever I see unknown words, as I think it is easier to remember it this way. It also helps me to understand the text or dialogues. (S3, Interview 3: 20/05/04)*

Likewise, S4 used *dictionary* to help with her pronunciation and memorizing the unknown words. However, unlike S3, S4 showed a strong sense of purpose, i.e. to “speak fluently” and she incorporated an extensive range of strategies accordingly, such as reading, guessing, repeating and role-playing. S4 was determined to practice speaking: she ignored technical problems and forced herself to read the text several times, which demonstrated the extent to which she had developed as an autonomous learner, able to take responsibility for her learning as she claimed “Speaking fluently is important for me”. As she said:

*S4: I was very frustrated. I planned to read the article. But there were a lot of words that I could not speak well. I could not pronounce them. Besides, I forgot them quickly after I said them.... So many functions were dead today! Then all I could do was to work hard to read articles out loud. To deal with an article, I usually click on the dictionary to check the words I don't know. If I could not catch it after I listened to it, I just repeated reading it loudly over and over until I could say it fluently. I grew with a habit of reading through the dialogue. I want to read fluently! Though this dialogue has only one character, I still asked myself to practice speaking all the contents. Speaking fluently is important for me. (S4, Self-observation: 12/04/04)*

In brief, as the data show, the participants were able to use software functions to reach their goals. In addition, through using *cognitive* and *metacognitive* strategies, the data show that the participants were able to employ various functions, such as *role-play* and *repeat*, to cope with listening or speaking problems and build up their confidence during the learning processes (see Appendix F,7.4.2/a, for further data) .

However, speaking the target language with standard intonation, pronunciation or elision (linking sounds) was still a challenging task. Although some effort and progress was reported in learning the phonological elements after two semesters of practicing, the speaking tasks with strict criteria, such as *role-play functions*, were still so demanding that some participants decided to avoid them, compromised and invented their own methods to practice speaking skills, or focussed on other skills. To summarise, they became well-informed about the resources they could use in multimedia environments when they became more familiar with the software or functions, as can be seen from the multiple methods they employed.

## **7.5 Summary and discussion**

This chapter has addressed the question of how the participants coped with problems and challenges and the impact on their individual traits. As mentioned earlier, a variety of initial perceptions (see Chapter 5) and emerging problems and challenges (see Chapter 6) in relation to self-directed multimedia environments have resulted in the need to examine how low-achieving learners respond to all kinds of demands over time. Through investigating the interaction and coping processes, Chapter 7 has identified various patterns and trends among the three major themes, regarding how the participants dealt with technical problems, obstacles to managing learning and difficulties in carrying out language learning tasks, as showed in Table 7.1. I will

discuss and summarise the findings in the following sections.

The data suggest the learning processes at this stage involved a process of constructing and reconstructing meanings within multimedia environments as the participants not only reported developed methods and strategies for dealing with different problems and challenges but also experienced certain changes of individual traits. Firstly, to cope with the technical problems (e.g. set-up, using demanding functions), various factors seemed to be critical, including the experience gained from time spent exploring and experimenting to exploring and experimenting, from features of control, scaffolding from peers and the instructor, and reflective activities. More specifically, continuous exploration of the environment and negotiation of meaning with self and others, and continuous use of techniques and experience accumulated through trial and error over time, helped the learners not only master operating the software but also gain much self-confidence. The process of problem solving, exploring, making mistakes, acquiring the techniques and becoming familiar with software functions in multimedia environments appeared to be essential to empower the participants as they became capable of control over the learning situations. Accordingly, these successful experiences led to positive attitudes and belief in their ability to learn effectively (Jones, *et al.*, 1987). The process of exploring software functions, and developing capabilities and self-confidence in technical control can be referred to as a mediated experience (Vygotsky, 1981) as the multimedia environment allows the learners to test their assumptions and find the limits of their own abilities during human-computer interaction. Conversely, such findings may challenge what previous research suggests regarding the importance of giving learners guidance in using the multimedia functions which suit the learners'

**Table 7.1 Overview of Chapter 7: Coping with the Problems and Challenges**

	Sub-problems	Coping strategies	Factors
7.2 Coping with technical problems	7.2.1 General set-up	* Keep exploring, became experienced and master control of problems	<ol style="list-style-type: none"> <li>1. Accumulated skills, abilities and familiarity empowered the learners to control the software and hardware</li> <li>2. discussion (with peers in debriefings)</li> <li>3. set goals</li> <li>4. presence of peers (observing others to stimulate/ maintain motivation)</li> </ol>
	7.2.2 Record and role-play functions	<ul style="list-style-type: none"> <li>* Find the requirement for SRS: intonation, linking sound and pronunciation</li> <li>* Cope with sound capturing: pay attention to the timing, volume and pace of speaking. (self-monitoring, self-evaluation)</li> <li>* Use social/affective strategies (e.g. self-talk, self-encouraging, sharing experience with peers)</li> </ul>	
	7.2.3 Alternative ways (when the technical problems cannot be solved)	<ul style="list-style-type: none"> <li>* Use same strategies as in multimedia (repeat speaking /role-play)</li> <li>* Plan and set goals (bring printed magazines to save time)</li> <li>* keep speaking when malfunctioning</li> </ul>	
7.3 Coping with obstacles to managing software, learning pace and self-assessment	7.3.1 Managing software	<ul style="list-style-type: none"> <li>* Develop awareness of needs and select suitable software</li> <li>* Explore software, self-assess proficiency level and learning needs, make plans. (e.g. Selecting easier software first then tackle advanced software later)</li> <li>* Judging efficiency and set goals to plan the use of software</li> </ul>	<ol style="list-style-type: none"> <li>1. Experimenting and exploring process (knowing what to choose to suit their styles or needs; learning by mistakes)</li> <li>2. Discussion with peers and the instructor (during the focus group, interview and debriefings)</li> <li>3. Developing metacognitive strategies (e.g. set goals) through reflective activities (interview, debriefings, learning diaries, software reservation form)</li> <li>4. Supportive atmosphere and changed learning beliefs</li> </ol>
	7.3.2 Adjusting learning pace	* Make plans and arrange tasks at the beginning/ middle/ end of sessions for different purposes	
	7.3.3 Self-assessing progress	<ul style="list-style-type: none"> <li>* Redefine progress with process-oriented, multiple and ongoing approaches</li> <li>* Develop multiple methods (feedback from software/use of different functions or software/ progress in conventional class)</li> <li>* Change attitudes (positive/confident) to confirm the progress</li> </ul>	
7.4 Coping with language learning difficulties	7.4.1 Overcoming fear (of speaking or the target language)	* Observe peers, discussing with peers during debriefings, frequent practice, repeating to gain more self-confidence and reduce fear	<ol style="list-style-type: none"> <li>1. Supportive atmosphere</li> <li>2. Changed learning beliefs and attitudes</li> <li>3. more self-confidence from much speaking and listening practice</li> <li>4. Presence of peers</li> <li>5. Familiarity with software functions</li> <li>6. Develop metacognitive knowledge (using different strategies according to task requirement)</li> </ol>
	7.4.2 Tackling listening and speaking ( intonation, linking words) problems	* Apply appropriate functions and strategies (cognitive and metacognitive strategies) to cope with different language learning problems (e.g. repeat, slow down, dictionary)	

level of proficiency (Hegelheimer & Tower, 2004). This study indicates that the experience of developing their knowledge of exploring software functions is crucial in building up the learners' self-confidence in controlling their own learning.

In addition, support from peer interaction and reflected activities (e.g. writing diaries and debriefings) enhanced the use of various *social strategies* (e.g. self-talk & sharing solutions with peers) and *metacognitive strategies* (e.g. setting goals and plans) in dealing with different technical problems. Strong evidence can be seen in the alternative techniques (e.g. using similar ways to practice speaking or preparing printed magazines) some participants used when the technical problems could not be resolved. Their determination in striving to learn as much as others regardless of the technical problems show their positive attitudes, self-determination and self-regulation. Instead of competitiveness, the presence of peers had a positive impact on the participants' changing attitudes, motivation and strategy use by stimulating perseverance, clear goals, and self-determination in the coping process.

Secondly, to cope with obstacles in managing software, learning pace and self-assessment, the participants reported the various ways of using metacognitive and social/affective strategies. They demonstrated much awareness regarding self-monitoring learning needs, individual learning patterns, learning goals and plans, which were crucial elements of autonomous learning in self-directed multimedia environments (Garrison, 1997). Furthermore, the data provide further evidence of various strategies the participants used to manage their learning, such as setting goals and making plans (e.g. when to learn particular software), developing stable learning patterns, adjusting procedures in each session, and redefining progress in a multiple,

process-orientated and on-going approach. Their sophisticated use of strategies shows that they seemed to discover their own rules in self-directed their learning (Morrow, *et al.*, 1993) and became self-disciplined self-confident and goal-oriented when encountering problems (Taylor, 1995), which is further evidence of the extent to which the participants became autonomous learners at this stage.

The factors that led to the changes are multifaceted and seem to simultaneously contribute to the enhancement of strategy use and changed attitudes. It was found that accumulating experience through constant exploration (e.g. of different software) and learning from errors over time, interaction with peers and the instructors in various ways in a supportive atmosphere, and the reflective activities, were all helpful. The combination of the above factors involved in the human-human and human-computer interaction seemed to break the vicious circle they reported earlier in Chapter 6 or in their previous experience. In addition, scaffolding from multimedia features, their peers, the instructor or activities (e.g. emotional and technical support) during the learning processes played crucial roles in helping them reduce their frustration and self-doubts, raise learning awareness, adjust learning beliefs and encourage strategy use. In turn, through the participants' positive attitudes and confidence in terms of arranging their use of software, adjustment of learning pace and self-assessment of progress, their self-confidence, motivation and strategy use were promoted.

Thirdly, the data suggest that what the participants employed to deal with language learning difficulties involved a combination of methods and strategies. In terms of coping with fear of speaking, the participants reported use of cognitive, metacognitive (e.g. set learning goals) and social strategies, including observing peers who dared to

speaking, gaining emotional support from peers during debriefings, and frequently practicing speaking to reduce fear and gain self-confidence. Many factors helped encourage motivation and reduce anxiety when they attempted to practice speaking. These include the supportive atmosphere, peer interaction and promoted self-confidence, positive learning beliefs (e.g. comparing with self not others), and improvement in their ability to control the software functions. Thus, the coping process above demonstrated the learners' changed role due to their developed abilities and self-confidence which apparently equipped them to take control of their learning in their new role (Stevick, 1976; Voller, 1997). Apparently, the impact of peers at this stage became a strong force in mediating learning when the learners were empowered during the self-directed learning process.

In terms of coping with the listening and speaking problems, these factors involved applying particular functions to meet different task requirements. The data suggest that familiarity with the tasks and software functions through exploring various functions contributed to their flexibility in adjusting or planning the use of functions in dealing with listening and speaking problems. The task knowledge (Wenden, 2001) and the flexible use of software functions not only demonstrate the participants' developed strategies, self-confidence and intrinsic motivation, but also imply the importance of sufficient time given to learners to explore multimedia environments with scaffolding from others and supportive atmosphere in the environment. Obviously, the technical abilities and the strategies in managing learning were crucial.

To summarise, the discussion of coping with problems and challenges suggests self-directed multimedia environments provide optimal conditions for the participants to

experiment explore, negotiate meaning, discover rules, develop familiarity with software functions and tasks and accumulate technical skills, experience of managing learning, and self-confidence in speaking. The factors involved include various kinds of experience accumulated over time, a supportive atmosphere, the presence and scaffolding from peers, reflective activities, and so on. Unlike the previous findings in Chapter 6, that suggest the impact of peers and the instructor on the learners is negative, this chapter discovered a strong positive effect particularly from social interaction with peers in coping with challenges and problems. Such a changing impact of certain factors has been reported in the previous two chapters, which illustrates the complex influence of peers and the instructor, as well as the importance of taking into account changing conditions, such as group dynamics, individual learning beliefs, attitudes and the level of self-confidence. More importantly, the processes of managing learning encouraged the learners to negotiate meaning with selves, computer software, peers and the instructor, which suggests the dynamic nature of interaction in self-directed multimedia learning environments is a complex social practice.

## **Chapter 8**

### **THE IMPACT OF THE MULTIMEDIA LEARNING EXPERIENCE**

#### **8.1 Introduction**

This chapter will investigate the impact of the multimedia learning experience on the wider context, including English and non-English learning context. To gain an overall retrospective view, interviews three and four were conducted respectively at the end of the course and ten months after the course. For the purpose of triangulation, data from other sources is used including the first and second interviews, questionnaires on self-confidence and observation. Through analysing thick data collected mainly from participants S1 to S6 at different stages, several themes were found, which provide a clear picture of the trend in changes and their impact on the participants. As such, the following sections discuss the impact on, (1) general attitudes towards learning English; (2) learning in a conventional English class; (3) learning in specialised subjects; and (4) other contexts (on attitudes toward self-studying English, using English in a social context and setting plans). An overview table of the findings is provided at the end of chapter.

#### **8.2 Impact on general attitudes toward learning English**

##### **8.2.1 Perceptions, beliefs, self-confidence and intrinsic motivation**

According to the data in Chapter 7, it can be seen that the changes in the participants' attitudes toward English were ongoing throughout the two-semester self-directed multimedia course. In the third interview, the participants provided further opinions regarding how the overall learning process affected attitudes toward learning English. Three main themes were then identified. Firstly, the participants were fairly receptive to the target language. Instead of resistance, avoidance or alienation, they considered that they had now become more familiar with it. In their view, one of the reasons for

this is that learning English regularly cultivates a sensitivity to the target language and some emphasised that they had more “feelings or sense” for English after the two semesters. Another important reason is that, due to the abundance of listening and speaking practice, they were immersed in learning environments with real-life learning contents (e.g. house rental dialogues) and practical tasks (e.g. role-play). Their familiarity with the target language gradually reduced their fear of listening or speaking English. As a result, feeling less fearful, those who previously resisted English changed and considered that English was “not as annoying as before”. The following excerpts show examples of changed attitudes toward English:

**Less fear & resistance, more familiarity & acceptance toward English**

*S3: Learning English is more like a habit for me now.*

*S4: In the past, I just found English very annoying because I would not learn it well no matter how hard I tried. Now I found I'm braver listening to and guessing the English I hear.*

*S5: I used to feel like escaping from English. It's better now. I used to be extremely resistant to English...But with multimedia, if I find the words very funny or familiar, I will want to memorize them.*

*S9: I felt the multimedia let me gain more chances to touch English outside of English class. It let me make learning English a habit. I feel very used to it when I listen to English. Thus, I won't reject it. I used to feel English listening is very difficult. In high school, the teacher ordered weekly English newspapers and gave listening tests. I always did very badly. So for me, English listening seems to be very difficult...now I feel I can relax and learn. When I see words I can use in my daily life, I would want to memorize them. Now I am willing to recite words not for tests but because I like to. (Excerpts from Interview 3)*

In the fourth interviews, similar views and further explanations about these were added. After the course finished, the learners still felt impressed by how the learning process and the interaction with computers particularly due to the use of certain functions (e.g. repeat) helped them become more used to English. For instance, S1 indicated that the repeating process in the multimedia environment helped her to become familiar with English. S6 considered that regular listening had helped her become more sensitive to the intonation (see Appendix F, 8.2.1/a, for further data).

As shown above, to some extent, the barrier between the participants and the target language was lessened, as they constantly accessed it and became more familiar with it. However, it is noteworthy that in the first interviews they claimed they had also spent much time on learning English in school in the past though the results were different. When being asked to explain what caused these differences, their replies revealed some interesting views. Among the factors they considered, two were essential: the fun and practicality of the learning materials and the process of interactivity attracted them and stimulated their intrinsic motivation to learn. Learning content which could be applied to their daily life context and being involved with the learning process and interaction obviously sustained their interest. In addition, learning in a relaxed environment may have contributed to the learning outcome. The evidence can be seen in the comments by S5 and S9 who mentioned above, for example, that they were intrinsically motivated to memorise words, not for tests but for their own interest.

Secondly, the data suggest that the participants showed more self-confidence in improving their learning of the target language. Instead of hopelessness, frustration or failure, they believed it was possible for them to make progress in English, especially in speaking, listening and reading. As far as self-perceived progress was concerned, for instance, some recognised that they made more progress in understanding simple dialogues (e.g. S2), had more self-confidence in speaking (e.g. S3), found it easier to read advanced articles and speak fluently (e.g. S6), and so on. In addition, they demonstrated confidence in controlling the process of self-directed learning. The process of discovering methods or using strategies to tackle various language and non-language obstacles in multimedia environments (e.g. adjusting learning pace,

managing software and functions, self-assessing progress and developing learning patterns to reach their goals) gave them a positive belief in their ability to control their learning. Thus, without feeling hopeless, as reported in the first interviews, they considered making progress in learning English was feasible through “several routes”. These findings suggest that the participants had gradually become ‘strategic learners’ who were able to be self-determined and to self-monitor their learning process. The sense of achievement they experienced through the process in turn nurtured their self-confidence (Jones *et al.*, 1987) in that the participants were convinced that there were “hopes” of improving English:

### **Being confident in knowing some ways to improve English**

**S1:** *Multimedia let me find my own ways to learn. When I found problems, I learnt from the errors. I know how to learn English so that I won't resist it. (Interview 4)*

**S2:** *In the past, I would be very worried while listening to English because I did not learn anything in class. Now I am less worried because I'm learning and there is space for improvement. In the past, I had no chances to learn at all! My progress was almost zero. I felt that it was hopeless. It was like there was no hope for my (improving) my English. And I did not feel I was totally deserted anymore. (Interview 3)*

**S3:** *In the past, I would never volunteer and not even like to touch English at all! I just felt I could never be able to learn it well no matter how hard I tried. It made me feel annoyed! It's different now. Because I am making progress slowly, I believe I can improve my English more. (Interview 3)*

**S4:** *There is progress with my pronunciation. Keeping on speaking and speaking slowly builds up my self-confidence as I'm facing a machine and it does not give me any pressure... The resources are important. Multimedia lets me practice in a relatively authentic environment, which helps me build up my self-confidence and lets me know what I want. (Interview 4)*

**S5:** *Now I feel I can surely use my own ways to increase my English ability to a certain level. I believe I read it through my own ways. There are several routes to reach the same goal. Using multimedia is definitely one of them. I won't think it is impossible. (Interview 4)*

This finding is further echoed by their reflections in the fourth interview. When they recalled their impressions of the multimedia project, they contended that they had experienced a series of failures and successes, and that there was a genuine difference between the two semesters. In particular, in the first semester, they seemed to be in the process of exploring the environment, familiarising themselves with the software

or building up their self-confidence. During the second semester, they seemed to be more in control of their learning, including setting goals and coping with difficulties. It is noteworthy that the process of exploring and developing individual learning patterns was regarded as rewarding when the participants were aware of their changes and growth. Thus, instead of a sense of hopelessness or failure from exams, their achievement through self-assessed progress in multimedia environments reinforced their positive beliefs about and self-confidence towards learning English.

It is noteworthy that peers were regarded as a strong force which enhanced their learning. During the fourth interview, the participants emphasised the impact of peers as a crucial factor which led to a positive learning experience in various respects, one being that the peers provided *scaffolding* that reduced their resistance to and fear of English. Although some participants (e.g. S1, S2, S3, S4 and S5) contended that initially, the presence of peers was a major source of pressure that inhibited their willingness to speak, after a period of observation time, they seemed to be encouraged by those who dared to practice speaking. Some attributed such a change to a sense of security, self-confidence and identity fostered by similar backgrounds, features and goals shared with others, such as low-level of English abilities and dislike of the English language. Furthermore, among the reflective activities, the debriefings at the end of session helped reduced competitiveness and anxiety, produced a friendly group dynamic and nurtured interest in participating in and contributing to the discussion. For instance, S5 discovered that sharing similar goals (e.g. 'take it as another chance to alter our fate') with other low-achievers built up her confidence and that sharing advice with each other helped overcome her fear of speaking and changed her attitude from resistant to positive (see Appendix F, 8.2.1/b, for further data).

In addition, positive feedback and encouragement from peers influenced her self-perceived proficiency and helped her build up a positive identity in the group and nurtured courage and self-confidence, particularly in learning speaking. S5 vividly described how others showed their sympathy towards her when positively commenting on her speaking. Her self-concept seemed to change, as she said, “maybe what I said is not too bad” and “I am not as bad as I imagine”:

*S5: In the past, I always thought that how I speak is rubbish. But during discussion, I told S8 that she speaks very well. And she told me how I speak is quite good. I said, “Really?” Though I felt my English was rubbish, others did not think so when they heard me. Since then, I just told myself, “maybe what I speak is not too bad” and I am not as bad as I imagine. (Interview 4)*

Thirdly, the participants developed an intrinsic motivation toward learning English when they experienced enjoyment through the multimedia environments. It was very different from what they experienced in the past, as some participants mentioned they mainly studied English for extrinsic reasons (i.e. teachers, exams, degrees or future jobs). Instead of viewing English as a “trouble” that they escaped from, their attitudes changed dramatically. For instance, S3 remarked on how she would learn English for herself, not for the teacher; S4, S5 and S9 were willing to spend extra time learning English which they thought was interesting and which made them want to learn. One of the reasons, they asserted, was that multimedia provided “fun”, “entertainment” and “lively channels” so that they were frequently willing to spend extra time learning from it. The other reason was the element of *control* provided to the learners so that they could select the content they felt interested them. The following statements demonstrate the intrinsic motivation the participants developed for learning English:

### **Increased interest and intrinsic motivation to learn English**

*S3: I touch English regularly. It is different from before when the teacher forced me to learn. Now I want to learn it for myself. Though there was still a teacher (during multimedia sessions), I had more chances to touch English. It becomes like a habit now, not like the curiosity I felt it was at the beginning.... (Interview 3)*

*S4: I used to think English was a trouble. Now I feel like spending extra nights to learn English with multimedia as it is not tiring at all. In fact, it is fun to learn with multimedia as I get to choose what I am interested in. (Interview 3)*

*S5: I used to feel like escaping from English. It's better now. In the past, I always wanted to learn English, but purely for realistic reasons, such as jobs. Now it is kind of for fun and entertainment, to learn something interesting from multimedia. It's such a fun! (laugh) (Interview 3)*

*S9: The biggest influence of multimedia on me is that it is changing my attitudes toward English. I know that learning English can be interesting. Multimedia gives me a fun and lively channel that makes me want to learn. (Interview 3)*

In brief, changes in general attitudes toward learning English have been shown in this analysis, including positive, self-confident and not afraid, interested and not resistant, to learning English. The experience of self-directing learning in multimedia environments apparently contributed to changes in various aspects of individual traits at different stages during the learning process. More importantly, it implies that the learners needed time to experience, adjust to and construct the processes of overcoming complex tasks through interacting with software, peers, the instructor and themselves.

#### **8.2.2 Contrasting statements from interviews**

To further demonstrate the participants' changes in attitudes, self-confidence, motivation and strategy use over time, the following excerpts from interviews 1 and 3 present a consistency in the participants' self-perceptions of their changes throughout two semesters of learning. As can be seen in Table 8.1, among the themes mentioned in interview1, their attitudes towards learning English were mainly passive (e.g. only studied when there are exams), unpleasant (e.g. poor test results or pressure from

**Table 8.1 Changes in general attitudes toward learning English**

	Excerpts from interview 1	Excerpts from interview 3
S1	<i>I never studied (English) unless there were exams to take. I am usually quite lazy. I used to listen to an audio CD of a magazine...when teachers asked me to do it... Then in front of the whole class, the teacher just humiliated me by saying that, "It is very easy and how come you still can't answer it?" Immediately, I was terribly nervous and frightened. It was so embarrassing that I cried.</i>	<i>I improved my listening. I still don't like English but I do it and I know how to improve my English. I have more self-confidence such as when the teacher corrected the mistakes I wrote on board, I did not feel hurt anymore...My face skin is thicker (laugh). I have become more confident now. I just feel my English is not the worst in class.</i>
S2	<i>I gave up (English) in high school because I did not think I could make any progress no matter how I tried.... Sometimes I hope to stay away from English as much as I possibly can.... Maybe I just resisted learning English....</i>	<i>I used to be more scared of English. ... Now I feel that it was not serious and I believe I am able to guess main points if I try. Maybe because I have more self-confidence now, I have become less scared of it ... Because of multimedia, I have more time to touch English and I improved my listening ability as well.</i>
S3	<i>... the worse my grade was, the less I felt like studying it. But I still had to study it, which was terrible!...I feel English is very important for my future... And my English is so poor that I really want to diligently learn it well... I often felt quite frustrated. Whenever I built up my confidence, I got upset again after I knew the results of exams. <b>There were no ways to make it!</b></i>	<i>(In the past) I just felt I could never be able to it well no matter how I tried. It made me feel annoyed! It's different now. <b>Because I am making progress slowly, I believe I can improve my English better...</b> I touch English regularly. Different from before when the teacher forced me to learn, I want to learn it for myself.</i>
S4	<i>I think everyone else's English is very good, not like mine. <b>There was no way I could make it...</b> I have not built up the confidence for learning English because I always felt very frustrated. I did not know how I could improve my English...What I did is just being against learning it. <b>Often I was very lazy studying English</b> though I know English is very important for my future. I have high motivation to do it but I don't think I have the power to persist with it.</i>	<i>I feel very interested in learning English through multimedia. It gives me many chances of speaking... I used to think English was a trouble. <b>Now I feel like spending extra nights learning English with multimedia is not tiring at all.</b> In fact, it is fun to learn with multimedia as I get to choose what I am interested in. (S4 actually subscribed to a multimedia magazine and studied it throughout the two semesters)</i>
S5	<i>But I never listened to any English, mainly because <b>I forgot it as soon as I finished it.</b> Besides, I had not found any interests from listening to English articles. <b>It was not fun</b> though I understood a little bit of it...It seems that English will be applied to everything in the future. Since it is so important, I could not let it be like that anymore.</i>	<i>I used to feel like escaping from English. It's better now. I always wanted to learn English, but purely for realistic reasons, such as jobs. <b>Now it is kind of for fun and entertainment,</b> to learn something interesting from multimedia. It's such fun! ...When I treated it like homework, I would write down the words, review them but forget them quickly. But with multimedia, if I find the words fun or familiar, I will want to memorize them.</i>
S6	<i>I usually tried to find the solutions by myself. But I was not very sure about the answers. Therefore, some notions, such as some grammar rules, have been very confusing for me for a long time. <b>The more I felt that, the less confidence I have for my English ability....</b> I always thought others' English was very good and they could understand teachers very well. But I could not do it. My listening skills were very poor. I could not fluently put ideas together</i>	<i><b>My speaking is improved and I can speak English more relaxingly</b> (she could not speak fluently at the first semester).... At the second semester, I started trying and imitating how the two teachers spoke in class. It was not natural at first ... Then after practicing a few times, I found that I could do it more easily when I lowered down the volume and said it gently... Feeling I want to learn more and know more about English</i>

teachers) and hopeless (e.g. there is no way I can make it), though most of them showed extrinsic motivation as they considered learning English was definitely crucial in affecting their future job opportunities. Referring to Chapter 4, due to a lack of self-confidence (e.g. others in class are better than me) and interest (e.g. I hope to stay away from English as possible as I could), there seemed to be struggles, reluctance and frustration when they recognised the importance of improving English abilities, as they felt there was no hope of achieving this.

Comparatively however, the data from interview 3 indicated an obvious change, to a more positive attitude, more self-confidence and intrinsic motivation in learning the target language. Some participants claimed that they responded much more positively, with more assurance to the same situations. A compelling example was the case of S1, who emphasised that she did not feel as humiliated as before, when her teacher corrected her errors in front of the class. It is possible that the teaching approach might not be the same as the previous teacher adopted. However, S1 was clearly aware of her changes, especially in her improved identity, as she asserted she was “not the worst in class”. She also attributed the difference to her increased self-confidence (e.g. “my face skin is thicker now”). When facing errors in public, she seemed to be more positive as she did not think negatively or blame herself for her English ability. Similarly, some participants (e.g. S2 and S3) showed increased self-confidence which they believed was because they often “touch” English by listening to it regularly in multimedia environments. Some (e.g. S4, S5 and S6) were aware of having more interest in learning English, and felt that they did not consider it as a trouble and avoid it, which had previously affected their willingness to memorise words.

### 8.2.3 Questionnaire results

To further triangulate the data, results from questionnaires (see Appendix C1&C2) conducted at the end of the course reveals how the participants perceived their confidence level in learning English before and after the multimedia self-study course. According to the questions, the participants responded in two sections of eight items that focussed on identifying their confidence level (i.e. from 1, the least, to 5, the most) in four skills (i.e. reading, writing, listening and speaking) at two stages, the beginning of the course and the end of the course. The results provide interesting findings. Firstly, as expected, the participants (S1~S6) perceived more change of self-confidence in reading, speaking and listening than in writing.

Secondly, some perceived increased self-confidence in reading, though the impact on reading skills was not always discussed in their learning diaries or interviews. This may imply that much listening and speaking practice also engaged the learners in reading activities (e.g. to role-play they needed to read the text, guess the word definition and the main ideas of the text). Therefore, the results further indicate that the learning processes in self-directed multimedia learning environments may also benefit learners by improving other skills (e.g. reading) that may not be the main focus of the practice.

In addition, among the participants interviewed, S1, S2, S4, S5 and S6 all claimed they had increased confidence in speaking and listening, which is consistent with their assertions during the study. However, surprisingly, S3 reported little change in confidence level than the actual data (e.g. interviews and learning diaries) show, and what she reported previously is not consistent with her questionnaire responses. Her

confidence level in speaking and listening varied little though she previously reflected on her great fear of speaking and difficulty in comprehending fast audio. S3's case shows inconsistencies between her low self-confidence which she reported previously (at the beginning of the course) and her developed state of self-confidence she described later (at the end of the course). More importantly, the results imply that using multiple instruments, such as interviews and learning diaries, and using them at various stages in a chronological study, is crucial to record various changes over time, as learners' memories are affected by various factors (i.e. learning experience), and therefore change over time. Through the use of a variety of instruments, the present study has captured and presented the complex and dynamic nature of individual traits, such as learners' attitudes, learning beliefs, strategy use, self-confidence and motivation, during the learning process.

### **8.3 Impact on learning in a conventional English class**

Although the settings and teaching/learning approaches in a conventional class are very different from those of the multimedia environments, the participants reflected that the experience of learning in self-directed multimedia environments had a profound impact on various aspects of learning in a conventional class.

#### **8.3.1 Listening**

Firstly, according to the data, one of the predominant impacts seems be related to comprehending lectures in the English class. In their views, the main changes were that they became less anxious, worried or panicky when they heard English in class. They seemed to be more relaxed and confident in comprehending what the teacher taught in class. The data indicate two reasons that contribute to the changes. One is the positive belief that they were able to understand the essence of the lesson if they

tried. Some participants contended that they seemed to “comprehend it better (than before)” and they were “braver at guessing”. Instead of passively waiting for the teacher to translate the lessons into their native language, some participants would take an active approach, by trying to guess first.

Such changes appeared to benefit the low-achieving participants in class. In the past, understanding the teachers’ English was a tremendous obstacle and caused a lot of pressure. For instance, some participants vividly described what they heard in class as an “unknown” or “unidentified humming” sound. Their concerns not only indicated the feeling of loss but also the fear (e.g. being afraid of being called to answer questions) they suffered from not being able to understand the teachers. Thus, being more assured in comprehending the English in class was a great relief and reduced their anxieties. Importantly, due to more involvement in class, they reported that they had more willingness to concentrate on lectures and make efforts to learn, especially when they had more faith in understanding the lecture in class.

From the data, the factors affecting their self-confidence in listening comprehension are identified. The positive beliefs and successful experiences they had with multimedia appeared to be crucial to this as they believed they could achieve and understand the general ideas of what the teacher said. As shown in the following data, some participants (e.g. S2, S4 & S10) showed much confidence in understanding the lectures. Their self-confidence affected their performance in class, which also encouraged their attempts to concentrate on the lectures.

### More confidence and strategy use to guess English in class

*S2: In the past I would be very worried while listening to English because I did not learn anything in class. Now I am less worried because I'm learning and there is room for improvement.*

*S4: Unlike before, I have more confidence, especially when listening to what the teacher says. My mind used to wander all the time during class because I understood nothing at all and being scared of being called to answer questions. Now I know I have to try to catch the key words...*

*S6: When I listen, I pay much attention to the intonation and I also become more aware of how I speak...In class, I can catch keywords now. Even though I am not very sure about the details, I still can roughly understand what it says.*

*S9: In the past, I did not even want to guess what the teacher said because no matter how hard I tried, I wouldn't understand it. This semester, I tried very hard to listen and guess the meaning. (As the researcher observed her in class, S9 concentrated on the lecture by nodding her head often and showing her understanding and interest even when the teacher spoke English all the time.)*

*S10: I used to listen to every detail carefully. Then I would understand the full sentence before moving on to the next one. I did not tackle the big picture. I learnt to catch the general ideas after I practiced with multimedia. Even with the different accents from different teachers in class, I would attempt to listen. Only when I continue to understand the context, can I guess the meaning of unknown words if I pronounce the words differently. (Interview 3)*

Another reason the participants identified was their use of strategies to help/improve listening comprehension in class. As mentioned above, the participants were aware of employing listening strategies to help them cope with their listening tasks, such as guessing the teachers' main ideas and keeping on listening without stopping for a few unknown words. More importantly, they seemed to identify particular methods that helped them listen effectively, which they regularly practiced in the multimedia environment. For instance, as S6, S9 and S10 indicated, they tended to pay *selective attention* while listening to the lecture, such as focusing on the teachers' intonation or keywords and ignoring some unknown words. As can be seen, the process they applied, such as tolerating the ambiguity of unknown words, accent or pronunciation, suggests that they applied their experience, strategies and self-confidence accumulated in multimedia environments to deal with the listening tasks in conventional classes.

Furthermore, it was discovered that being able to understand the lecture was essential in building up their identity. Instead of feeling 'lost', 'ignored' or 'deserted', some considered that they felt more competent especially when they were aware that their listening comprehension was improved, as understanding teachers was "not as difficult as before". Therefore, instead of viewing their status in English class negatively, as "hopeless" or 'the worst', they considered their English ability was "not too bad" or "not too much different from others". Thus, in a broader sense, for these less successful students, improved comprehension brought them the hope of bridging the gap between the class community and those who used not to be involved (due to their being perceived as incompetent learners).

### **8.3.2 Speaking**

Another impact of multimedia learning is related to the participants' speaking performance in class. Some participants reported more self-confidence and willingness to participate in speaking activities, which indicates a great contrast with the passive attitudes (e.g. never volunteered even when they knew the answers) that were evident in the first interview. Regardless of the fact that the chances of speaking in front of the whole class seemed limited in an English classroom some participants reported their attempts to speak in front of class and showed an improvement in their self-confidence through the action of seeking challenges. Meanwhile they attributed these attempts to the listening and speaking practice they had had in multimedia environments which reinforced their speaking skills and self-confidence.

For example, S3 reported her success when she stated she had voluntarily spoken in class in the second semester. Her view was that, the learning process in multimedia

environments cultivated abilities which affected her attitudes and performance in a conventional class. Among the processes S3 experienced in multimedia environments, ‘overcoming fear of speaking’ appeared to greatly affect her learning in a conventional classroom. It is noteworthy that her attitude towards speaking altered dramatically, showing a great change from her attitude before starting this study. Compared with her reluctance to speak up in class in the first interview (e.g. “I wouldn’t voluntarily answer any questions because I didn’t dare, even if I knew the answer”) and her self-consciousness and fear of speaking in multimedia environments in the first semester (e.g. I have a strong fear for speaking. Everyone knows I can’t speak), this represents a breakthrough. At the end of the project, she contended that she was willing to volunteer to speak up in class, as she considered “as long as I have prepared for it, I will want to try it”. The action of volunteering in class further represented her willingness to and her self-confidence in seeking challenges (see Appendix F, 8.3.2/a, for further data).

The most obvious factors contributing to this appeared to be the abundant practice S3 had had in speaking and listening, and the progress she achieved in the multimedia environment, which fostered her self-confidence and encouraged her to speak up in class. Meanwhile, compared with her statements at the first interview, the vicious cycle seems to be broken. Obviously, her motivation was changed from extrinsic (e.g. “the teacher forced me to learn” to intrinsic (e.g. “I continuously feel like learning it”). The following statement indicates that she had developed a positive cycle of effective strategy use, self-confidence and motivation by the end of the self-study project:

*S3: In the past, it was painful because English is very important and I must study it. But there were no ways to learn it well. Now, as there is progress and I continuously feel like learning it, comparatively, I study it more willingly. (S3, Interview 3: 20/05/04)*

Instead of feeling distressed because she still needed to study English for the future even though she could not find ways to make progress, she emphasised multimedia definitely provided a “way” to learn and that she would “study it with more willingness”. S3’s participation in class demonstrated that her positive learning beliefs, self-confidence and motivation cultivated in a multimedia environment, can also be transferred to in-class learning, as she stated at the last interview: “What I learnt from multimedia is that I am not that scared of speaking English anymore. I think it is the environment that gave me the courage”.

In addition, S6 identified that the learning experience in multimedia environments had positively affected her confidence in speaking voluntarily in class. In the first interview, she indicated a lack of confidence in speaking, as she said that “I would be so scared if I have said something in front of others. I might say something stupid and the others would not understand me”. However, she said she “slowly adjusted to it” and her fear of speaking seemed to have “gradually disappeared”. More importantly, she gained confidence and attributed this to much practice in listening and speaking in multimedia environments. She described the changes in herself as follows:

*S6: I used to have little self-confidence especially when I had to talk in front of the whole class. I did not know what to say or where to put my hands. Now I just feel it is alright if I say something wrong. Even when the teacher calls my name and asks me to answer, I still want to give it a try even if I am not sure about the answer... The multimedia definitely helps me to gain self-confidence, especially after listening and speaking practice. (S6, Interview 4: 30/03/05)*

Interestingly, the progress S6 had made regarding her improved self-confidence in speaking is not consistent with the themes that she previously identified. Referring to Chapter 6, she appeared to show more interest in practicing reading and listening than in speaking. According to S6, due to her frustration with the role-play function, she did not report much practice in speaking in her learning diaries. However, throughout

the fourth interview, the impact of speaking practice in the self-directed multimedia project was constantly reported. The breakthrough she identified showed that she still managed to incorporate the strategies she learnt from the speaking practice from this project in coping with problems she encountered in conventional classes (e.g. by slowly imitating how the class teacher spoke and she eventually reported progress in overcoming her speaking difficulties).

#### **8.4 Impact on learning in non-English learning context**

This section explores how the participants perceived the impact of multimedia learning experience on learning in a non-English learning context after the two-semester self-study course had finished. The findings show the participants generally felt that the learning experience in multimedia environments was rewarding, and that it also affected various aspects of how they studied their majors (e.g. nursing and occupational therapy) and managed their university studies.

##### **8.4.1 Learning specialised subjects**

Through analysing the interview data, it was found that they appeared to show positive attitudes and determination and transfer or modify learning strategies or problem-solving processes experienced within multimedia environments, by adapting them to various learning tasks in their specialised subjects. The problems they encountered while studying the specialised subjects varied, such as comprehending the English terms in lectures when they were mixed up with specialised terminology, and reading English textbooks. They often caused a lot of difficulty so that many students simply chose to check the meaning of most words or rely on the translated versions of textbooks. In addition, specialised terms can be a serious concern as

students who cannot understand such terms usually find them an obstacle to comprehending the exam questions or the lecture delivered in class.

To deal with the problems they faced in the specialised subjects, some participants reported that they transferred what they had learnt from the multimedia experience. For example, S1 found it difficult to understand the lectures due to the English terms frequently used in class when she transferred her major to Occupational Therapy in her sophomore year. She felt frustrated when she discovered that her English level was much lower than others in the new class. In addition, because of her poor test results, she was at risk of failing the course, which might delay her graduation and increase the financial burden on her family.

*S1: I cried whenever I called my mum and told her I did rubbish with the test. Though she comforted me and said I could repeat the course and delay graduation for a year, I feel guilty because I kept spending the money. I told myself my situation cannot be rotten like this anymore. (S1, Interview 4: 20/03/05)*

However, when the problems emerged, she struggled initially and then, to avoid being failed, became determined to cope with them by applying a series of strategies, including recording, repeating listening, taking notes and reading terms out loud. After that, she recalled that she felt proud of herself having achieved a positive outcome. Meanwhile, she discovered she was familiar with the coping process and emphasised that the method of “keeping on repeating listening” was crucial to enhancing her self-confidence as she had more control of the learning situation. Eventually the same method helped her improve her listening comprehension in class, as she said, “I feel more confident afterwards....I feel that what the teacher says becomes easier for me. It was chaos at first.” She stated:

*S1: I made up my mind. Like I learnt in multimedia, I recorded (the lecture) and went back to listen to it. At first, I asked others about the terms all the time, such as flexion, extension....etc. Then I cannot bear with it and decide to record it. I spent three days and*

*kept listening to the recording. And I took notes and read the terms out. I feel more confident afterwards. I guess I am very familiar with the process, keeping on repeating listening. From then, I feel what the teacher says becomes easier for me. It was chaos at first, but I must deal with it. (S1, Interview 4: 20/03/05)*

As can be seen, the experience of problem-solving in a multimedia environment in this project was crucial for S1. Incorporating the processes previously experienced appeared to improve her self-confidence and strengthen her motivation to cope with different problems.

While S1 asserted that the *repetition strategy* gave her self-confidence, S3 emphasised that the *auditory strategy*, the habit of “reading out loudly”, helped her remember specialised terms more easily. In addition, in her view, her sensitivity in understanding the target language and her motivation (e.g. “I have more interest in learning English and more willingness to touch it”) were also key factors, which helped her to pay more attention to what the specialised English teacher said in class. She thought this made her “different from other friends”: different in that where she considered herself a less competent member one year ago in class (Referring to Chapter 6), now she considered her *social identity* to be more positive:

*S3: Now I still have a habit of reading English out loudly, especially the special terms. When I studied Pharmacology, the teacher warned us that the terms of medication were difficult to remember. Then I found the method of reading them out really impressed me and helped me to memorize them more easily. I think after the second semester, I got used to read English loudly. ...The other thing which makes me different from my friends is that I would pay much attention to listen to English if I hear any. I think I have more interest in learning English and more willingness to touch it. (S3, Interview 4: 20/03/05)*

Similar to S1 and S3, S2 also applied *auditory strategies* in that she read out loud to remember the words. S2’s willingness to learn more English demonstrates her interest and motivation, which helped her to tackle her specialised subjects. She showed a positive attitude toward English as she thought the lecture in English was acceptable for her. She tried her best to guess what the teacher said in class. In addition, her positive attitudes towards English seemed to encourage her use of

*browsing and guessing strategies* while reading the textbooks or handouts in English without depending too much on translated versions, which required a certain amount of self-confidence (Oxford, 1996). Instead of being resistant to English as before, she was willing to seek challenges by reading the original textbooks in English first, not the translated ones, and by not trying to translate all the text but guess the gist of it:

*S2: I told myself to try to read the original textbook in English, not the Chinese version. Now I would want to learn more English in class. Chinese has become a tool to assist me understand the English. I sometimes give myself some challenges. For example, during the test, I will try not to read Chinese first but English, to see whether I can understand those. Or I would try not to translate them when I read the handouts and browse through it. Unless there are some words that are important, I will then check the definition (S2, Interview 4: 20/03/05).*

Likewise, S6's case reveals that the experiences and strategies learnt in multimedia environments nurtured positive beliefs in her specialised studies. She showed her self-confidence in understanding the English textbooks as she believed that she could "gradually cope with it". Particularly, like S1, she emphasised that the learning process was similar, comparing it with multimedia environments. Thus, the experience gave her self-confidence and motivation to cope with the problems, as she said "it is the feeling that I have gone through the similar process before...I know where to start tackling them", she wrote:

*S6: I can understand the textbook better now. Except for the terms, I feel the statements are not hard so that I can gradually cope with it. It is actually very difficult to understand the Chinese version because the translation is very strange. I feel more confident when I can understand the English version better than the Chinese one. .. To some extent, I have a similar feeling as when I dealt with my subjects. What I mean it is the feeling that I have gone through a similar process before. So when I face the problems now, I know where to start tackling them. Then I can get involved in the situation quickly. (S6, Interview 4: 20/03/05)*

Finally, similar to S1 and S6 who recalled the similar problem-solving process, S5 clearly specified the learning procedures she transferred from the learning experience in multimedia environments to the new learning context. It is noteworthy that, like S2, S5 was aware of her attitude as the most important factor leading to the changes. Instead of being resistant to learning English, she showed more interest and actively

applied the different listening and reading skills strategies that she had learnt in multimedia environments, such as *browsing* and *guessing* the main ideas, to tackle the specialised terms in nursing. She then showed her self-confidence by comparing this to her previous approach and saying “Comparatively, I know better about how to catch the main points of an article”. She stated:

*S5: I learn to apply the structure of English in my study now. The vocabulary is very different as it relates to nursing. But I learnt to use the methods I learnt in the multimedia environment. In the past, I would immediately say: “Wow! There is no way I can understand it”. Now it’s alright. If I read an article, I may browse through it quickly and guess the outline of it. Then I know the direction to check and which words I must check or which ones I can simply ignore. Comparatively, I know better about how to catch the main points of an article. I used to check every unknown word I read in the past, which was extremely exhausting! (S5, Interview 4: 20/03/05)*

*The researcher: How do you know this method?*

*S5: When I practiced listening with multimedia, I also read a lot. I found that as long as I know some key words I can guess the meaning correctly.*

To sum up, the above cases reveal how the impact of the multimedia learning experience affected the participants’ attitudes and strategies in dealing with problems and challenges while studying specialised subjects. The data show that the students were aware of the learning process, strategy use and positive attitudes they transferred from the previous multimedia learning experience. Referring to how they coped with various challenges in multimedia environments (see Chapter 7), there appeared to be a consistency between the methods they applied and their previous learning from the study (See Appendix F, 8.4.1, for further data).

#### **8.4.2 Beyond learning English: managing university study**

The impact of the multimedia learning experience apparently affected the participants’ learning in broader ways. Firstly, the experience of *resourcing* and *planning* inspired the learners to deal with different problems with perseverance and to pursue answers for to questions. For instance, S1 indicated that “finding methods to solve problems is something I learnt from multimedia”. She not only applied the

methods to learning English with multimedia, but also applied it to her subject, *occupational therapy*. Eventually in the fourth interview, she indicated that she was aware that its applicability is not limited to learning English. Thus, she asserted the importance of proper attitudes and determination in making an effort to search for answers and related it to the purpose of university study, as she said, “that is what a university student should be like”.

*S1: I learn to deal with problems and plan while facing problems. Just like multimedia, I record and listen to it! Or I will try to guess some words. At least, when the teacher said a long sentence mixed with Chinese and English, I would guess the meaning of some words. For my study, I have to figure out the answers till I truly understand them if there are problems. I suppose that is what a university student should be like. (S1, Interview 4: 20/03/05)*

As stated above, the process of critical thinking, searching for solutions and overcoming problems gave her the strategies she needed to use and a strong sense of self-confidence in solving problems. S1 further emphasised that she “liked using different resources in multimedia”, which shows a significant influence of the study that she participated in:

*S1: Finding methods to solve problems for each subject is something I learn from multimedia. I have to think which way is suitable for me. Then I look for different ways. For example, I did poorly with the test on the subject, 'Human Development'. Then I interchangeably referred to books from the library, in both English and Chinese, for a few more times. Then I understood it finally. It's like using different resources in multimedia. If I don't understand English I can check the Chinese translation. Then I will watch it with English subtitles and repeat listening to it again. Then I simply think, 'yes'! That's it! Through the process, I've got it! (S1, Interview 4: 20/03/05)*

Indeed, the major influence of the multimedia learning experience appeared to be the development of positive attitudes towards learning and self-confidence in dealing with problems. In particular, for example, S6's reflection indicates the profound impact of the multimedia learning experience on her learning attitudes and learning methods, which she even considered more rewarding than the impact on learning English. Being a *reflective learner* throughout the project, the process of making decisions,

finding solutions and setting goals helped her to become independent and confident. This met her personal goal of what a “university student” should be like, as she stated:

*S6: The reflective process helps me realise that the process of learning in multimedia environments actually helped a lot with other school subjects. Unlike high school, we need to make decisions and find solutions. Being a university student means being independent. The experience is really helpful. Writing out the goals was very helpful. During the project, because I had written my targets, I would know what I needed to do first and second. It's the same with doing other things. Only if I write things down, I will know what I am thinking. (S6, Interview 4: 20/03/05)*

More importantly, she indicated that the impact of the multimedia learning experience was crucial in that it changed the ways she thinks and behaves, which she could apply to other subjects. The profound changes she revealed were not merely the methods of dealing with language tasks but her attitude towards dealing with difficulties she encountered in both university study and her life. In this post-study/4th interview one year after the project finished, she became aware of the in-depth influence of her past experience, which actually led to her personal growth.

*S6: The influence of the learning experience with multimedia is great for me both in my studies and the growth of my personality, and changes my thinking in many ways. There was nothing memorable during high school. Regarding my growth in my freshman year, I felt very happy for myself....I learnt different viewpoints to understand learning English. Also, after learning this subject, I may use this method to learn other subjects. For example, during the project, I learnt how to plan my learning while using multimedia. Now I apply the same patterns to other subjects, not just studying multimedia but other common subjects. It really changed my attitudes and learning methods. I did not notice that until I reflected back later on. (S6, Interview 4: 20/03/05)*

Thus, as illustrated, the process of multimedia learning indeed led to some positive impacts on learning in specialised subject areas. This suggests that the multimedia experience, by focusing on the process of learning and giving the learners space and the resources to tackle their individual problems, has clear benefits beyond the immediate context of the study. Indeed, what the evidence shows is not just the impact of strategy use, self-confidence, and motivation in studying the subjects in which they used to feel less confident; but also the nurturing of more general, positive qualities, such as responsibility and independence, which should be invaluable for their university study and future career.

## **8.5 Impact on other contexts**

This section targets the long-term impact on the participants' attitudes toward continuing to learn English, using English in social contexts and setting future goals.

### **8.5.1 Continuing to learn English**

Firstly, regarding the willingness to continue to learn English, generally most of the participants reported interest in continuing to learn English after end of the two-semester project. Apart from S1 who contended that although she would not resist learning English (if using multimedia) and that she still disliked English, they all showed varying degrees of interest in learning English and took all kinds of opportunities to "touch English" (meaning studying English) as often as they could.

The findings suggest that various actions they took to continue self-studying English using different resources demonstrated their determination to continue the interest they had developed. For instance, S2 would study English by borrowing English books from the library and S4 still subscribed to and studied a magazine similar to the one she had used in this project (*Live*). In particular, S6 regularly watches movies at the audio-visual centre in the library, using the methods she learnt from the multimedia environments to advance her English. To improve her listening she intentionally watches the same movie repeatedly and turns off the subtitles to check her comprehension. In S5's case, instead of being resistant to English as before, she showed a receptive attitude in two respects, one was listening to English songs, which she never considered as an option before; the other was that she would occasionally read English news on the internet or browse some English books. S5's willingness to access English related materials illustrates her increased intrinsic motivation, as stated

in the following excerpt:

*S5: If I did not participate in this multimedia project, I would never have touched that kind of stuff. I would avoid reading anything in English. But now, at least, I will actively read some news on the internet or flip the English books whenever I see one. I don't think English is that annoying anymore. (S5, Interview 4: 20/03/05)*

S3's case is quite impressive in terms of her strong motivation and determination to continue learning English, which can be seen from the various efforts she made, e.g. spending time and paying fees to study extra formal lessons in a private language institute to learn academic vocabulary. During the interview, despite the extra time and fees spent on the TOEFL courses, she indicated that her intention behind such an action was "to learn more and see what it's like, not just for grades". Unlike others who mostly adopted a relaxed attitude toward learning English, S3 shows a genuine interest and intrinsic motivation to pursue further achievements for her own personal satisfaction (Deci & Ryan, 1985).

In addition, S3's other action which shows her interest in learning English is the constant discussion she has through e-mails and requests for advice regarding learning English. In her e-mails, she asked the researcher for advice about choosing suitable magazines. More importantly, from her e-mails, she shows her interest and determination to learn English by purposely organising time to read English magazines during the summer vacation, as she wrote:

(An e-mail letter to the researcher by S3)

*Dear Teacher*

*I was wondering whether you can recommend me some good English books or magazines. I subscribed to a series of magazines called Time for student. I finished them during the summer vacation as I did not have time to read them during term time. Now I am wondering whether I need to continue the subscription or change to other English magazines when the new semester starts. Therefore, I need your advice. Thank you ^^. (S3. E-mail: 31/07/05)*

After the researcher replied and suggested an English website, she explored the resources and identified parts of the resource available to her. Although she felt less motivated to continue without any help from the Chinese language, she contended that she now had the courage to read a website that has no Chinese at all.

**(An e-mail replied by S3)**

*Dear Teacher*

*I have seen the website that provides many English learning items, such as vocabulary, grammar, listening and tests. It is one of the best I've ever seen...As I was not familiar, I browsed it quickly and read the stuff I like. In fact, when I first saw this website, half of my interest was lost because it was full of English there. But I'm happy that I have the courage to read through it. Reading this English website does not seem to be that difficult for me anymore. (S3. E-mail: 02/08/05)*

In contrast to her negative attitudes toward learning English in class at the first interview (e.g. I was more passive...Now I am used to not understanding teachers in class), her extrinsic motivation (e.g. I feel English is very important for the future) and the sense of hopelessness she felt (e.g. I've been saying this sentence for many years!!), her action of continuing to learn English clearly shows the change of attitude and intrinsic motivation that has been stimulated in her.

In brief, from the data above, the participants have cultivated their interest in continuing to learn English after the course finished. With much intrinsic motivation, they selected various methods they were interested in to continue learning. They also made use of the resources they could obtain (e.g. from library, internet...etc) and the methods they learnt (e.g. switching the subtitles or listening to songs). More importantly, their attitudes toward English appeared to be more positive, and were very different from their negative statements at the first interview (see also Table 8.1).

### 8.5.2 Using English in social contexts

Regarding the impact on using English in a social context, the participants indicated that they became more interested and confident in using English for communication purposes in real-life contexts. Instead of the fear of speaking English to real people or foreigners, some participants reflected on their attempts and successful experiences. For instance, S4 reported the experience that she talked to foreign customers while working part-time at a bakery, which she never previously dare to do or from which she avoided before. Her motivation and self-confidence in using English can be seen in the fact that she was not afraid of forgetting words during conversations:

*S4: Now I felt that English was not that difficult anymore. When I did a part-time job at the bakery, Saint Mary's, in a hospital during the summer vacation, I would deliberately talk to foreigners who came to buy bread...sometimes I forgot how to say the words. Then I would still try to explain it in different ways. This would not happen in the past because I would run away from it. (S4, Interview 4: 20/03/05)*

With the same self-confidence, S6 attempted to use English when chatting with foreign friends through online chat rooms on MSN. She emphasised the fact that with her self-confidence she was not very worried about the mistakes she made. Compared with how anxious they were about listening to English or talking to foreigners initially, this was a significant achievement. Instead of fear, worry and anxiety, the participants learnt to use English as a valuable tool in communicating with others, which also shows their enhanced self-confidence. Thus, the finding suggests that the learning experience in self-directed multimedia environments not only reinforced positive attitudes toward English in academic contexts but also shows the potential influence on applying such experience to new and broader contexts.

### 8.5.3 Making plans

To a certain extent, the impact on the participants' self-confidence and motivation

towards English seemed to guide them in setting future goals. As some participants contended, it became more possible to achieve the goals that they once felt unfeasible. In the past, because of their low English proficiency, they would not consider any opportunities that required a high level of English proficiency, such as studying or working abroad. However, now they hope to reach their “dreams”, such as being a nurse abroad, pursuing further studies or joining a part-time work scheme abroad. Being realistic, they were still aware of the difficulties involved in reaching their goals and the great effort required to do so. Nonetheless, unlike before, they showed much more positive thinking and had more faith in their ability to tackle the challenges which lay in front of them. As they said:

### **Impact on making career plans**

- S1: I am still interested in improving my English because I want to join CIEE, working part-time in USA. I used to think my English was rubbish. So I thought that was just a dream. But I think my English is not too bad now as my listening is improved. Joining CIEE is my goal. I really, truly, sincerely want to go to America. My roommate has been there. And she said everything is huge in America. But the food is disgusting! (laugh) It is very hard as my sister failed the interview. Though I am a bit worried, I supposed I still have a chance to pass it.*
- S2: I struggled a lot when my family encouraged me to go to America. They told me to study graduate school and work there. The salary seems great and I have relatives there as well. I have given it a thought, to start preparing TOFEL, like others do. I know it would be a long way to go but I may try it.*
- S4: I know I need to improve my reading as I plan to be a nurse in Africa. I started to have this idea since I was freshman but I was not too sure about my English before. But now I know I need to keep improving my English and I have the confidence to achieve it.*
- S5: I would like to be a nurse abroad. Many of my senior schoolmates also plan to go. But I need to take some action from now on. To achieve that, English is very important. It won't be easy. But I know how to plan for it now.*

## **8.6 Summary and discussion**

The aim of this chapter is to answer the fourth research question, which asks how the participants perceived the impact of the multimedia learning experience. Data triangulated from four interviews across two academic years, questionnaires, and observations, demonstrate various changes of learners' individual traits over time.

Through constantly comparing and contrasting the data among different cases, general themes and variations emerged, and were categorised into four dimensions: the impact on (1) general attitudes toward and self-confidence in learning English, (2) learning English in a conventional classroom, (3) learning specialised subjects in university, and (4) continuing to learn English, using English in a social context and making plans, as summarised in Table 8.2.

First, regarding impact on the English learning context, instead of showing resistance, fear or avoidance, the participants demonstrated receptive attitudes toward the target language, more self-confidence in improving their language abilities, and enhanced interest in learning, and intrinsic motivation to learn, the target language. The data also suggest the main reasons for their changed attitudes, self-confidence and motivation varied.

One reason is that they benefited from familiarity with software functions due to regular practice using multimedia, especially in listening and speaking. Another reason is that the experience of using various methods in dealing with different tasks fostered their self-confidence. Yet another reason is that the discussion and interaction with peers who shared the same goals encouraged their intrinsic motivation and positive attitudes and sense of identity. More importantly, when the participants attributed their changed attitudes or progress to the amount of time they spent on learning English in this project, they also indicated their changed orientation seemed to be the main factor. For example, they contended that the main reason which attracted them to willingly devote themselves to the multimedia learning process was the fun factor from the interaction with software, and the authentic and practical learning content whereas in the past they had only studied for the purpose of

**Table 8.2 Overview of Chapter 8: The Impact of Multimedia Learning Experience**

	Changes	Reasons
8.2 Impact on the attitudes, self-confidence and motivation towards learning English (in general)	8.2.1 receptive attitudes to the target language -more self-confidence in improving the target language -there is hope to improve language abilities through different learning routes -increased interests and intrinsic motivation to learn the target language	<ul style="list-style-type: none"> <li>• Studying regularly enhanced familiarity with target language</li> <li>• Abundance of speaking and listening practice reduced fear of and resistance to English</li> <li>• Applying different methods and strategies to control over the learning processes increased self-confidence</li> <li>• Peers provided scaffolding (though they posed pressure previously).</li> <li>• The discussion, through debriefing, fostered shared goals and social motivation which encouraged learning motivation and self-confidence and positive self-identity.</li> </ul>
8.3 Impact on learning in conventional English class	8.3.1 Listening: -more relax and confidence in understanding the lecture -using strategies to improve comprehension in class  8.3.2 Speaking: -more willingness and confidence in participating speaking activities -seeking challenges by volunteer speaking in class	<ul style="list-style-type: none"> <li>• Positive thinking and believe in their abilities to understanding the lecture if they try.</li> <li>• Using strategies learnt in multimedia environments to help comprehending the lecture in class (e.g. guessing, paying attention to key words and tolerate unknown ones)</li> <li>• Much listening and speaking practice enhanced speaking skills and self-confidence</li> <li>• More in control in classroom learning process: Selecting and using appropriate strategies to tackle particular tasks efficiently</li> </ul>
8.4 Impact on learning specialised subjects and university study	8.4.1 Attitudes and strategy use: -more determination and self-confidence in solving problems -using strategies used previously (e.g. auditory strategy) -more receptive to the English spoken in class and willing to make effort to understand it 8.4.2 Beyond learning English: managing university study -showing determination and self-confidence in solving problems and pursuing knowledge as a learner	<ul style="list-style-type: none"> <li>• Experience and self-confidence of problem-solving in multimedia environments strengthens self-confidence and motivation in dealing problems in conventional classrooms.</li> <li>• Meet the task requirement of specialised subjects by using various strategies learnt in multimedia environments Knowing whether to start tackling problems (metacognitive knowledge)</li> <li>• Having confidence in understanding the specialist English in lectures and textbooks if keeps trying</li> <li>• Self-confidence in solving problems from successful experience</li> </ul>
8.5 Impact on other contexts	8.5.1 Continuing learning English: -willing to autonomously learn English using different resources (e.g. movie, song, books, internet, etc) 8.5.2 Using English in social context: - being motivated to use English in jobs or making friends, with less worries about making errors 8.5.3 Making plans: -starting to consider careers or further studies that required language proficiency	<ul style="list-style-type: none"> <li>• Increased motivation and reduced resistance to the target language</li> <li>• More self-confidence about abilities and positive self-identity (e.g. won't regard themselves as incompetent learners)</li> </ul>

passing exams. In addition, the data from interviews 1 and 3 further triangulated the learners' perceived impact of the multimedia learning experience on various contexts. By showing the contrast among the data learners provided at different stages, changes of attitudes, motivation and self-confidence were identified, which also indicates the importance of devoting sufficient time to the self-directed multimedia learning process in raising their awareness of their learning needs and goals. Meanwhile, from the researchers' point of view, investigating the various changes above at different stages throughout the two-year study provides in-depth understanding of the learning processes, which is regarded as a significant contribution to CALL research.

Secondly, in terms of the impact on learning in a conventional English class, in contrast to their previously reported negative attitudes, anxiety and lack of interest and self-confidence in class lectures, the data suggest the participants developed a more relaxed attitude toward and self-confidence in their ability to understand the lectures and used strategies learned and developed in multimedia environments to tackle listening tasks in class. In addition, the evidence indicates the learners showed more willingness, positive thinking and active involvement in speaking activities. As a result, changes in their performance in class were reported. They attributed their enhanced self-confidence and motivation to sufficient practice in listening and speaking. For instance, some participants voluntarily responded to the English teacher and spoke up in class, which they contended they would never have had the courage to do in the past. Furthermore, in addition to changes in speaking and listening performance, the participants demonstrated more self-confidence and strategy use in controlling their own learning in classroom learning contexts. For example, some participants indicated that they applied similar strategies that helped

them learn in multimedia environments which enhanced their learning efficiency in particular tasks in class, such as using audio strategies, by reading out new English words aloud to deepen their impression to the terms. This finding demonstrates the use of cognitive strategies and metacognitive knowledge as the participants seemed to be aware of the task requirement, the use of appropriate strategies and the expected outcomes (Wenden, 2001). The use of similar strategies in classrooms also suggests that the learners could transfer the strategies they learnt from self-directed multimedia environments to a new context. This study found evidence to support findings from previous research, that students can transfer learning strategies developed as a result of learner training to other situations (Ehrman *et al.*, 2003). Meanwhile this study suggests that successful experience in using strategies is crucial, as it appears to shape the beliefs and the self-confidence in their ability to use strategies effectively. This in turn encouraged the participants' to use similar strategies in other contexts (Jones, *et al.*, 1987).

However, the findings of this study also support the sociocultural view that language learning strategies are situated in a given context and under co-construction (Larsen-Freeman, 2001). It was found that the learners did not use exactly the same strategies but were able to adjust and adapt them to the requirements of a new context. In other words, the learners seemed to develop new strategies situated in different context. Nonetheless, the influence from the previous experience of success in strategy use cannot be overlooked as it contributed to their self-confidence in using these modified strategies in a new situation.

Thirdly, concerning the impact on their specialised subjects, the findings reveal that there is a positive and significant influence of the previous multimedia learning experience on their attitudes, self-confidence, motivation and strategy use in dealing with problems and challenges in the changed context. More specifically, the participants considered that the multimedia experience affected their learning in three respects: using strategies they applied previously to improve learning efficiency, showing receptive attitudes toward English used in class (e.g. more willingness and self-confidence in understanding the lectures), and applying *metacognitive knowledge* in tackling the learning tasks in the specialised subjects. Again, the findings showed that the students were able to adjust strategy use to meet the task requirements and to develop their own problem-solving procedures. For example, S1 and S6 considered the problem-solving processes inspired them to greater perseverance and determination in pursuing further knowledge in the university (similar to what they had done in the project) and becoming a more effective learner. This shows that the participants appreciated the self-directed multimedia learning experience, as it raised their learning awareness to become self-regulated learners who are able to self-determine and self-monitor their own learning processes in other learning contexts.

Lastly, the data suggest that the participants showed an intrinsic motivation and interest to continue studying the target language using resources that are available for them after the project ended (e.g. movies, books, internet news, magazines, etc). This again showed their changed attitudes toward the subjects they used to dislike, fear or be anxious about. In addition, they demonstrated more willingness and self-confidence in using the target language in a daily life context as they were less afraid of speaking or making mistakes while using the target language in the work place (e.g.

bakery) or on a social occasion (e.g. MSN). Furthermore, the impact of the multimedia learning experience affected how they made plans for future jobs or studies. The constraints of their limited language proficiency might still be a concern. However, they held more positive views and seemed to have more self-confidence in improving their proficiency. They showed their changed attitudes by modifying their plans, which included pursuing further study and careers abroad.

To summarise, the impact of the multimedia learning experience was examined in four respects. Generally, the participants showed positive attitudes, nurtured self-confidence and motivation towards learning English in general, in conventional English classrooms, in learning specialised subjects, in social and daily life context, and in pursuing further careers or studies. Thus, the above changes demonstrated that the participants perceived a positive impact from the self-directed multimedia learning experience on learners' self-confidence and attitudes, and willingness, keep learning English, using English in a social and daily life context, and making plans for their future career or studies.

In addition, this study also illustrated the importance of adopting a longitudinal, qualitative methodology to investigate the continuous changes of learning process and interaction in self-directed multimedia environments and its impact on the learners' individual traits over time. The data also suggest that the impact from the multimedia learning experience and reconstructed individual traits, such as enhanced motivation, self-confidence and strategy use, continuously influenced the learners' participation, learning or interaction in English and non-English learning contexts. The findings in turn shed light on sociocultural theories. Instead of viewing self-directed multimedia

learning as a process of gaining linguistic knowledge, interaction with computers or other participants involved the learners in complex learning processes of construction and co-construction of knowledge, skills, and various individual traits (e.g. attitudes, learning beliefs, motivation, self-confidence strategy use, identity, etc), which all potentially affected both the success of language learning and learning in a broader context.

## Chapter 9

### CONCLUSIONS

#### 9.1 Introduction

This is a study of self-directed multimedia language learning as a social practice, from a sociocultural perspective. In this way, multimedia language learning is intended to be studied as a socially constructed process by participants who are less successful language learners at university level attending a self-study group project in northern Taiwan. Therefore, the learning process is studied in light of the participants' actions, interactions with computers and others, and reflections on the context in which these exist. Issues such as participants' perceptions with regard to the context of multimedia environments, multimedia factors and other non-multimedia factors (e.g. peers, the instructor, individual traits, facilitating activities, etc.) are all considered. On a broader scale, this study also explored how the learners perceived the learning process and changes at different stages, and the implications for language learning and other non-language learning contexts. The ultimate goal of this thesis is to provide a contextual understanding of how the self-directed multimedia learning process as a social practice for self-study purposes is interpreted and constructed by the participants. To achieve such a goal, using multiple qualitative methods, the following four research questions are addressed:

- (1) How do less successful language learners initially perceive self-directed multimedia language learning environments and non-multimedia factors, and how does the perception affect learners' individual traits?
- (2) What are the problems and challenges less successful language learners may encounter in multimedia environments and how do they affect learners' individual traits?

- (3) How do less successful language learners cope with the problems and challenges they encounter in self-directed multimedia language learning environments, and what is the effect on learners' individual traits?
- (4) How do less successful language learners perceive the impact of the multimedia language learning experience on the English and the non-English learning context, in terms of motivation, self-confidence and strategy use?

This chapter offers a summary of the findings of the four research questions and a discussion of their implications for theory, pedagogy and research. I will first provide a brief summary of the findings of each of the four research questions and a discussion by revisiting some theories and issues mentioned in Chapter 2, the literature review. I will then discuss practical implications of this study. Following the implications I will offer directions for future study. In conclusion, I will provide a reflection on this study.

## **9.2 Summary of findings and discussion**

### **9.2.1 Initial perceptions**

The expected positive impressions of and attitudes toward multimedia features are reflected on frequently, and these seemingly enhanced the participants' intrinsic motivation and self-confidence to learn the target language. As predicted, the multimedia environments met their different learning needs (e.g. non-threatening interaction, interesting contents/materials). Some non-multimedia factors (e.g. peers and the instructor) had a two-fold effect on the participants' individual traits, which also affected their learning behaviours or willingness to do certain tasks. The analysis

of their perceptions and comparison with their previous learning experience in conventional classes, suggests learning beliefs and previous learning experience individuals brought to self-directed multimedia environments had a mostly positive and complex influence on their attitudes, motivation and self-confidence when they were actively constructing the learning process at the initial stage.

Previous research suggested the features of multimedia environments provide great potential for enhancing learners' intrinsic motivation and self-confidence (Pusack & Otto, 1997). This study found consistent findings at this initial stage as shown by the learners' positive perceptions of multimedia environments. More importantly, the various interpretations of the learning experience revealed individual learning needs or concerns (e.g. interaction, control of learning, fun and pleasure of learning contents, FL anxiety) of these less successful learners seemed to be catered for in self-directed multimedia environments at this stage, which in turn stimulated intrinsic motivation. This confirms previous research (Deci & Ryan, 1985, 1991; van Lier, 1996) that the learners' intrinsic motivation may respond to basic psychological needs (i.e. competence, relatedness and self-determination). Self-directed multimedia environments apparently provide such experience and opportunities to the participants who claimed they had not experienced these in conventional classes.

In addition, the learners' mixed attitudes toward factors such as peers and instructors influence signified a transition of changing roles and the learners' lack of ability, determination or self-confidence to take on new responsibilities at this stage. This issue has been highlighted in the literature regarding 'readiness' for the changing role,

power and responsibilities in self-directed learning (Gardner & Miller, 1999). It was found that non-multimedia factors (i.e. peers, instructors, discussion) at this stage indeed meet their needs by providing *scaffolding* and *extrinsic motivation* in continuing self-directed learning. The existence of both intrinsic motivation and extrinsic motivation shows they can work in concert (Deci & Ryan, 1985), as discussed in Chapter 2. The data suggest that extrinsic orientation (e.g. the presence of the instructor and peers) is crucial as it provided ‘a sense of community’ or ‘constraints’ (see Chapter 5) needed when learners have little or no confidence or determination in continuing learning. Thus, extrinsic motivation stimulated by social influences (e.g. peers) or authority figures (e.g. the instructor), fosters the development of self-regulation, internal control or self-confidence in a self-study environment. However, in some cases, the same factor was also a source of pressure for those who have had an unpleasant experience with peers or instructors, or a strong fear of them. As a result, I would suggest that research on self-directed multimedia learning should take an individual’s previous experience of learning English into account, as this would to some extent have an influence on his/her motivation to learn.

### **9.2.2 Emerging problems and challenges**

After the initial stage, three main aspects of problems and challenges emerged, including technical problems, obstacles in managing learning and difficulties in language learning tasks. These suggest that learning within self-directed multimedia language environments is a series of active and sometimes struggling processes which challenge the participants’ abilities, knowledge and self-confidence. Meanwhile, their difficulties, frustrations or struggles indicate the complex interaction between each

individual and the computer as well as between the participants, which also influenced the reconstruction of individual traits in multiple ways. As predicted in previous research the results reveal that three main multimedia features (i.e. multiple media, control, interactivity) (Pusack & Otto, 1997) caused difficulty, self-doubt and frustration of various kinds. As the learners attempted to adapt themselves to the learning tasks in self-directed environments, a lack of the prerequisite abilities or self-confidence demanded by various tasks actually placed constraints on their learning.

It is noteworthy that the negative impact on their motivation and self-confidence at this stage highlights the contrasts and changes identified at the initial stage (see Chapter 5). Such changes and difficulties demonstrate that there are multiple and interrelated issues involved, including software design, learners' technical experience, linguistic abilities, strategy use, affective status, identity, learning beliefs, awareness, FL anxiety, and so on. In addition, the findings suggest that the negative impact of non-multimedia factors (e.g. the presence of peers/ the instructor or discussion with peers) on the human-computer interaction seemed to be intensified at this stage. For example, the discussion with peers sometimes led to a sense of competitiveness, or even misled their learning decisions (e.g. choices of software). It was also found that interaction with computers simultaneously challenged the participants' linguistic knowledge, technical abilities and individual traits (e.g. identity, strategy use and self-confidence) and metacognitive knowledge (Wenden, 2001) that seem to be essential capacities in self-directed multimedia learning contexts. As a result, the emerging problems and challenges denote struggles and demands from the interaction with computers or other participants. This also shows the negative impact of the multiple

factors (e.g. peers, the control feature) mentioned previously on learners' motivation and self-confidence in learning particular tasks during the learning processes at this stage.

Issues regarding problems caused by multimedia features (Pusack & Otto, 1997) and learners' abilities required in self-directed learning (Little, 1989; Sheerin, 1997) have been documented. Likewise, this study has identified similar problems when the participants controlled software functions, interacted with computers, or used authentic materials, and so on. The findings illustrate that the challenges learners encountered during human-computer interaction in multimedia environments are far more complicated due to the simultaneous impact of multiple factors and a series of task demands on various aspects of learners' abilities.

Thus, this study further suggests the existence of *interplay* between the several difficulties in language learning processes. For example, when learners encountered technical problems with role-play functions, the factors of language ability and self-confidence in speaking appeared to be involved. Similarly, frustration with learning speaking skills (e.g. intonation) were often related to technical problems such as not being able to understand the threshold or the criteria (e.g. the timing) designed into the software. Such interplay also reflects a cyclical relationship consisting of the learners' self-confidence, beliefs, attitudes, motivation and strategy use, which are intertwined and mutually affected, when dealing with various problems and challenges (Lam, 2000). Such complexity of interaction within self-directed multimedia environments indicates that the learning processes the participants

encountered were not a simple or straightforward social practice. More importantly, the problems and challenges denote the complex and sometimes daunting experience the participants were involved with at this stage. The use of multimedia may not always guarantee success as it required the prerequisite abilities, knowledge, and self-confidence needed to meet the demands of the task. The learners' experience at this stage also draws our attention to issues regarding the possible threats or difficulties that multimedia features or facilitating factors (e.g. peers, instructors, discussion, etc.) might cause, as well as the risks when placing self-directed learners in problem-solving conditions that demand capacities, experience or self-confidence they do not seem have.

### **9.2.3 Coping with problems and challenges**

The process of coping with the problems and challenges indicated that the participants gradually developed a variety of methods and strategies, and strived to learn the target language by tackling the multiple demands of self-directed multimedia environments. The result also shows the participants employed a combination of cognitive, metacognitive and social strategies (O'Malley & Chamot, 1990) that they did not report at the earlier stages. The data suggest three main factors positively affect the processes of interaction with computers and other participants, including accumulated learning experience through exploring and solving problems over time, friendly group dynamic, technical and emotional support from peers through discussion. Meanwhile, the general trends in the coping processes at this stage demonstrated the learners' transformed individual traits (i.e. nurtured motivation, self-confidence and strategy use) and raised learning awareness. The participants showed that their adjusted goals

were relatively feasible (compared with the goals they set at the earlier stages) by using flexible learning strategies, organising learning patterns and self-assessing their progress with redefined criteria while tackling learning tasks.

In particular, the findings draw our attention to the breakthrough at this stage. Certain factors that seemed to have a negative impact and cause difficulties previously became less problematic at this stage. On the contrary, they seemed to provide *scaffolded help* (Wood *et al.*, 1976; Lantolf & Appel, 1994:41) (e.g. recruiting interest, simplifying tasks, controlling frustration, etc.) while solving problems in learning tasks, and enhance the student's motivation to reach further goals (e.g. tackling advanced software). Therefore, the same factors empowered them and helped them solve technical, management and language learning problems. For example, the discussion with and the presence of peers appeared to play a positive and crucial role in strengthening their motivation and self-confidence in the use of various strategies in dealing with all kinds of problems at this stage. The data suggest these changes are closely associated with factors in the project settings, such as sufficient time being given for exploration, social/emotional/technical support (e.g. from other participants to develop confidence in controlling the software), a supportive atmosphere and their accumulated experience. This helped build up familiarity with the learning environment (e.g. learning tasks and software functions) and abilities adjusting themselves to the task requirement. As a result, their enhanced individual traits (e.g. motivation, self-confidence, strategy use) and developed abilities empowered them in making use of multimedia features and non-multimedia factors.

Thus, the changing state of the learners' motivation, self-confidence, strategy use, beliefs, attitudes and identity, apparently showed the complex and dynamic interaction the learners involved in self-directed multimedia learning environment. The changes at this stage imply, again, a cyclical relationship (Lam, 2000) among changed individual traits and, in particular, a breaking of the previous vicious circle (Cheng, 1999) found in Chapter 6. The participants' learning attitudes appear to be subject to the learning traits they brought to this context. However, at the same time they actively participated in the construction and reconstruction of these traits through the learning and interaction they were involved in with computers or other learners. The length of time required for such processes of reconstructing individual traits, also confirms the value and contribution of the qualitative longitudinal approach the present study adopted in researching learning processes in CALL environments.

#### **9.2.4 Impact of self-directed multimedia language learning experience**

The multimedia learning experience appeared to have a profound impact on the participants in the learning context in this study and in other non-English learning contexts. In particular, the impact on attitudes toward learning English in general and in conventional classrooms was evident in their increased interest, willingness, faith and positive beliefs about learning the target language and improving their proficiency. Furthermore, it is found the learning experience was transferred in a variety of ways to a new context in their specialised subjects. For example, they reported they had more interest in and self-confidence about understanding specialised terms, and used similar strategies (e.g. audio/repeat) to deal with tests. The data suggest that their problem-solving processes and success experienced in this study fostered their

positive attitudes towards dealing with the difficulties they encountered in their specialised subjects. Furthermore, in a broader sense they considered such experience deeply affected them by changing their perception of themselves as *learners* in pursuing knowledge autonomously during their university study. Accordingly, their reconstructed individual traits (e.g. attitudes, beliefs, motivation, self-confidence and strategy use) were manifested not only in self-directed language learning but learning in the wider context.

In addition to the participations' own perceptions, data triangulated from various sources reveals subtle changes in their attitudes, motivation, self-confidence and strategy use over time. Data suggest the self-directed multimedia learning experience at different stages provided mediation, as demonstrated by the learners' gradual acquiring of independence and active control over the language learning processes. More importantly, they were aware of the changed orientation from extrinsic (e.g. only studying English for exams) to intrinsic motivation towards learning the target language, due to the effects of interaction, pleasure in the learning processes, and practicality of the contents in multimedia environments. Meanwhile, they emphasised the importance of the impact of non-multimedia factors (e.g. peers and instructor) in providing extrinsic motivation and various kinds of support to continue learning at different stages, or when they encountered problems.

It is noteworthy that the learners' perceived impact of the self-directed multimedia learning experience on various contexts may seem subjective. However, it shows how they judged themselves in terms of their '*inner perspective of achievement*': self-

knowledge, self-assessment and self-regulation (van Lier, 1996). Their nurtured sense of competence, success, self-determination and self-regulation reveals how the participants were able to assess their personal/inner achievement over a one-year period of self-directed multimedia learning. Having been able to do so, the participants' demonstrated their abilities in managing learning by reflecting on their learning problems, setting goals and assessing progress.

To summarise, after answering the four research questions, a picture of the learning processes at different stages is revealed. Firstly, the initial perceptions increased an understanding of how the learners' attitudes and impressions towards multimedia features and non-multimedia factors, and the multiple impact on their motivation and self-confidence. Secondly, the emerging problems and challenges as well as how the participants coped with them show the complex, struggling and rewarding interaction in which they were involved. Lastly, the learners' perceived impact of this study offers perspectives on how the multimedia learning experience affected the students in various contexts. Overall, this suggests a holistic perspective of the potential influence of the learning experience on the gradual reshaping of the learners' individual learning traits and their language learning.

As shown, learning processes involved in self-directed multimedia language environments is indeed not a simple social practice. The dynamics and complexity of interaction within self-directed multimedia environments indicates the learning processes the participants encountered were not straightforward because multiple factors were involved. Their learning may have been constrained by their previous

learning beliefs, attitudes, motivation, self-confidence, strategy use, linguistic knowledge and technical abilities, etc. This was interrelated to the changing state of individual traits, interaction with non-multimedia factors/ settings and dynamic learning conditions, and depended on how they constructed learning processes, developed their abilities and individual traits, or adopted multimedia features in interacting with computers.

### **9.2.5 Discussion**

When we scrutinise the participants' learning processes and the changes in individuals (e.g. motivation, self-confidence, strategy use, learning attitudes and beliefs) over time at different stages, this study has shown the dynamic interaction between the learners and computers and others (e.g. peers or the instructors). As mentioned in the literature review, viewing self-directed multimedia learning as merely an instructional tool may be limiting. As this study reveals, when self-directed multimedia learning is considered as a social practice, different perspectives regarding self-directed multimedia learning can be explored, such as multiple factors affecting interaction with computers or others when dealing with various learning task demands, or the changing impact of peers on learning processes at different stages. Such a perspective is valuable in research on self-directed multimedia learning, as it presented the dynamic nature of learning processes from multiple angles.

### **Self-directed multimedia language learning and the ZPD**

Vygotsky's sociocultural theories provide a framework to interpret the findings and the mediation the participants experienced having reached the ZPD. Before reaching

the ZPD, learners might not be ready to achieve a level where they are ready to enter the ZPD due to various reasons. In this study, for instance, some participants admitted that they were either not motivated to learn or did not learn well though they had opportunities to study using self-directed language learning materials (e.g. mp3 and magazines). They also indicated that various factors such as multimedia interactive functions and the presence of peers contributed to their motivation to reach the ZPD. When they experienced mediation from peers or the software, they apparently achieve a level to enter the ZPD at the same time. With scaffolding, they managed to acquire knowledge that was not available to them in the past.

Firstly, the *scaffolding* from the interaction with other participants appeared to be crucial to facilitate learning and promote motivation, self-confidence and strategy use during the process of coping with problems and challenges. From sociocultural perspectives, the discussion with peers provided a *mediated experience* in helping the participants to build their knowledge, and develop their abilities and the self-confidence they needed but which they previously lacked in controlling learning in self-directed multimedia environments. Such social interaction appears to enhance human-computer interaction, as gradually they were able to self-regulate their learning independently. This confirms Donato's assertion regarding the importance of group work/ discussion in giving opportunities of 'collective scaffolding' in exchanging linguistic artefacts, and considering 'learners themselves as a source of knowledge in a social context' (1994:51-52). Consistent with this view, as Swain (2000) suggests, dialogues as *mediator*, strategies of self-talk during interacting with computers or writing diaries, all helped the learners verbalise their learning process,

mediated the internalisation of external activities and helped them, metacognitively, to become aware of these (e.g. problems, needs, goals, assessment). Thus, through considering the learning process as a social practice, these insights from interaction with computers and other participants, as well as the dynamic impact on learners' individual changing traits at different stages of learning should provide useful information for researchers and educators about using multimedia environments for self-study purposes.

Secondly, the learners' overall learning processes in self-directed multimedia language learning environments appear to manifest Vygotsky's theories of mediation, the ZPD, scaffolding and self-regulation. In particular, the *four-stage model* (Tharp & Gallimore, 1988, cited from Harvard, 1997) helps us examine the learning processes by providing further interpretation of the self-directed multimedia learning experience (e.g. how the learners develop knowledge or acquire new skills through mediation) at the different stages and how that experience helped them reach the ZPD and become self-regulated learners.

In stage one, the participants showed limited understanding about the environments and the purposes of learning tasks (e.g. record or role-play). For instance, they initially perceived the control feature in multimedia environments as beneficial to stimulate their interest and self-confidence to learn. However, later they reported insufficient abilities in controlling learning processes (e.g. selecting software or operating functions) or a lack of awareness of learning purposes. As data showed that they were influenced by peers' selection of software, it suggests that they relied on

(capable) others (e.g. peers and instructor) to regulate their learning, and provide scaffolding or learning directions. As language is one of the most powerful artefacts, the dialogues, questioning and explanation during the reflective activities or the feedback from computers (e.g. trial and errors) were crucial in raising awareness of the learning process and the task requirements. According to the findings, initially the participants showed their need of 'other regulation', namely, support from or the presence of the instructor and peers, to enhance their motivation to continue their learning or during the problem-solving processes. Thus, interaction with others and computers were both essential in providing *scaffolded help* at this stage. Such (social) interaction familiarised the learners with abilities, skills and awareness, which supported them to become more responsible for the learning processes.

In stage two, with increased self-control or regulation, the learners gradually self-directed their multimedia learning. One feature of this stage that is also found in this study is the 'self-talk' the learners used in their diaries or during learning sessions (as they contended in the interviews) to guide what they should do to solve various problems, set further goals, or assess their progress. It is noteworthy that learning at this stage may not always be successful or pleasant. As the study suggests, the learners constantly encountered problems before they developed effective methods or strategies, and they still needed assistance/ support from peers, instructors or resources from environments (e.g. help functions) before reaching self-regulation.

In stage three, regarding their learning in the 2<sup>nd</sup> semester, the study found the learners seemed to study more independently without assistance or regulation from others.

They dealt with problems using their own methods and learning patterns flexibly, demonstrated metacognitive knowledge by meeting task requirements, set reasonable goals and accessed the resources (e.g. software functions, peers, the instructor) to reach their learning goals. However, in stage four, when the participants intended to improve their performance (e.g. tackle advanced software or more challenging tasks), they would again need the assistance/ support from human-human or human-computer interaction they previously experienced.

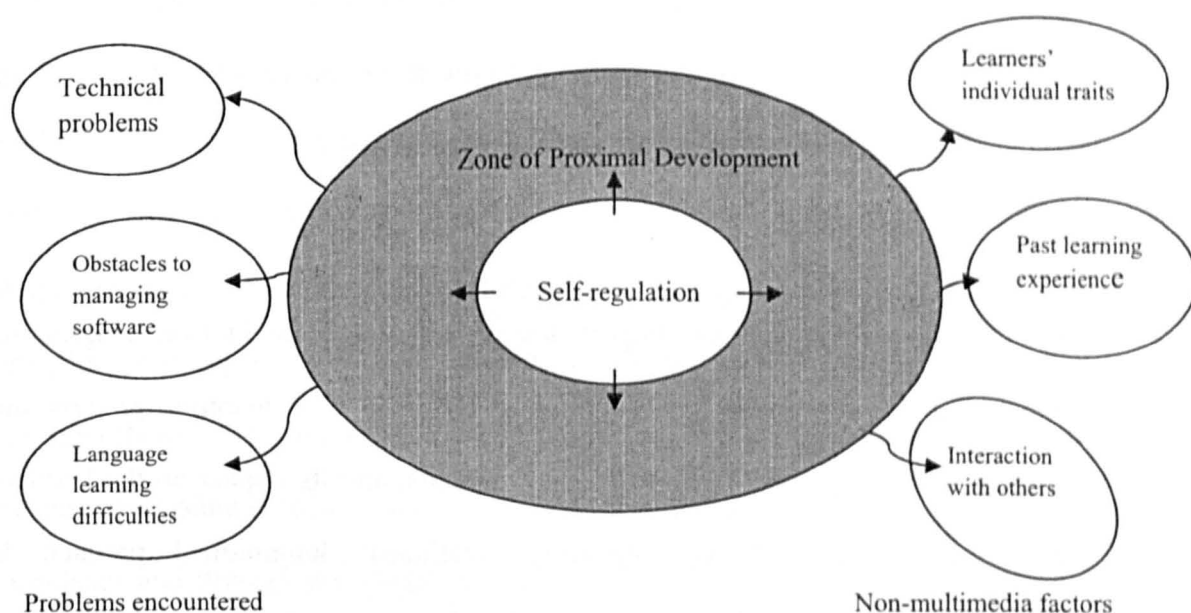
Thus, the concepts of the four-stage model (Tharp & Gallimore, 1988, cited in Harvard, 1997) illustrate the self-directed multimedia learning process, sequences and changes that the less successful learners were mediated to reach the ZPD and shift from other-regulation to self-regulation, through the use of language or multimedia features/resources (e.g. discussion, self-talk or interactive multimedia functions, etc.) as psychological tools. As shown, the ZPD is manifested throughout the processes in self-directed multimedia environments. More importantly, the findings revealed a more complex picture than the model presents, which shows that the learning process is not linear or straightforward. The participants constantly moved backwards and forwards, to and from the sources of scaffolding during their learning, especially when they encountered new challenges. In this way, this study has contributed more specific details to this model as it reflects the students' actual learning experience in self-directed multimedia environments.

Finally, this study has raised some issues regarding the complexity and dynamics before reaching the ZPD. It argues that the process of mediation learners needed to

reach the ZPD is complicated. The findings of the present research, for instance, suggest the interaction between the human-human and human-computer appeared to enforce a two-fold effect on learners, which did not guarantee *scaffolded help* but frustration, anxiety or doubts. However, various problems and challenges caused by multimedia and non-multimedia factors *may become* a form of *scaffolding* if they can direct learners to gain the abilities or knowledge through interaction with others or resources. Such problem-solving experience in a self-directed multimedia learning mode forced/ encouraged learners to actively seek support and solutions, to develop abilities and to adapt themselves to the learning processes. Therefore, as stated earlier, the learning process is not linear, as the participants were constantly “pushed” back and forth between these problems and self-regulation in the ZPD when they encountered problems or developed abilities during the process.

**Figure 9.1: Self-directed Multimedia Language Learning and the ZPD**

(Adapted from van Lier, 1996:190)



Adapting the interpretation of the ZPD from van Lier (1996), Figure 9.1 further illustrates the non-linear learning process and various problems/ factors identified, which may affect self-directed learners before they reach the ZPD. For example, in terms of managing software, although the learners showed positive attitudes toward choosing software initially, they encountered various difficulties, such as peer pressure or a lack of metacognitive strategies, low self-confidence, technical problems, etc. Thus, the interaction with peers at this time was not always positive. Such problems could 'push' them away from the ZPD due to a lack of abilities and they still needed to seek support from peers or the resource (e.g. subtitles). However, when they familiarised themselves with knowledge or skills, solving problems with managing software gave them a sense of achievement and control (e.g. tackling advanced software). Such processes then 'push' them to reach the ZPD and helped them become confident and self-regulated learners. The arrows in Figure 9.1 represent the dynamic nature of interaction between the learners and various factors during the self-directed learning process. The analysis above provided a contextual illustration of the concept of the ZPD, and how it can be manifested through the learning processes in self-directed multimedia environments.

This study also illustrated the importance of adopting a qualitative, longitudinal methodology to investigate the continuous changes in a learning process and interaction in self-directed multimedia environments, and its impact on the learners' individual traits over time. By employing a qualitative, longitudinal approach, the present study investigated self-directed multimedia language learning processes over time in particular: how the learners struggled with complex demands when they

seemed to lack the ability to deal with these at the exploring stages, how the challenges caused a severe impact on the learners' motivation and self-confidence and how the learners strived to cope with various problems over the learning processes. Through documenting the participants' struggles, confusion and self-doubts when interacting with computers and other participants, the findings also highlight the changing impact of certain factors (e.g. features of control, interactivity, the presence of peers/ instructor, etc.) on individual traits (e.g. beliefs, identity, motivation, self-confidence and strategy use). Without such an approach to research, a dynamic and in-depth understanding regarding self-directed learning processes in multimedia environments cannot be achieved. Therefore, this is what we would claim to be one of the main contributions of this study to the CALL research literature.

### **9.3 Pedagogical implication and issues**

From a pedagogic point of view, after investigating how less successful students learnt in self-directed multimedia environments, there are several practical implications. Schools and language teachers who intend to use multimedia CD-ROMs for self-study purposes with less successful learners should be fully informed of the findings of this study and be made aware of the dynamic and sometimes struggling learning processes their students might encounter in a self-directed mode. The importance of group dynamics and scaffolding from interaction with peers and the instructor should be considered in order to support learner's motivation, self-confidence and strategy use, which are found to be crucial to foster language learning and independence in self-directed multimedia environments. However, teachers should bear in mind the possible threats involved with the human-human and human-

computer interaction due to students' previous learning experience and beliefs, which may have a negative impact on learners' motivation or self-confidence to continue their learning.

Thus, the findings suggest certain precautions should be taken. To reduce the negative impact of the problems and challenges learners may encounter (e.g. technical, managing and language learning difficulties), instructors should provide a reflective, social and supportive curriculum, and give appropriate support at different stages. In particular, the following principles are important. When the learners are new to the multimedia environments, time and freedom to explore various software functions or programs, positive feedback should be given to encourage intrinsic motivation and to cultivate self-confidence and abilities in controlling the software. In addition, teachers should pay special attention to helping learners minimise frustrations, anxieties and confusion caused by technical problems, managing software selection, learning pace and self-assessment, and language learning difficulties through cooperative learning activities that involve interaction with peer groups.

In addition, some researchers (e.g. Hegelheimer & Tower, 2004) suggested that teachers should provide much guidance or information in terms of selecting appropriate software functions that are suitable for learners' proficiency, as they argued that lower proficiency students have misconceptions about using software options (e.g. "the more input the better"). However, consistent with the assertion of Tharp and Gallimore (1988, cited in Harvard, 1997), this study suggests giving 'just enough help' and allowing learners to explore functions are crucial to assist learners

to make the most of their own ZPD. In other words, the finding of the present study emphasised that allowing students to experiment with their assumptions, take the initiative to gain support (e.g. from computer resources or peers), and develop their own “tricks” or “unwritten rules” from trial and errors in a supportive atmosphere, proved to be beneficial to enhance intrinsic motivation, self-confidence and strategy use. Such exploring experience may be disruptive or constraining if they are given too much guidance in advance, or limited time, emotional support and freedom during the process.

Specifically, instructors should provide a non-threatening atmosphere, and encourage the development of independence and self-confidence in learners, for example by means of pre-learning activities, to share their thoughts and give positive feedback at the beginning of each session. Rather than being an authority which may adversely affect students’ self-confidence, instructors should play the roles of *resource*, *counsellor* and *guide* (Voller, 1997), and convince students that they are capable of controlling their learning process independently. Furthermore, different reflective activities can be organised to help them identify individual traits or learning problems (e.g. their learning beliefs, strategy use) at different stages. For instance, during learning sessions, teachers can provide students with worksheets containing goal-setting and self-assessment activities; after learning sessions, teachers can arrange debriefings, forums and writing learning diaries, and give encouragement when necessary. In addition, support groups are crucial to encourage an interactive and constructive, positive learning group dynamic. Employing these methods should minimise their frustrations from various problems at different stages and facilitate

learners' ability and strategy use to control learning processes in self-directed multimedia environments.

Students should take full advantage of the benefits a self-directed multimedia environment can offer, as well as recognise the potential problems and challenges they might confront. As the findings reveal, one of the important factors involved was the learners' previous learning beliefs and individual traits. Students should be open to the novelty of self-directed multimedia learning environments, have sensible learning expectations toward the learning goals, and be prepared for complex and dynamic interaction with computers or peers. To achieve this, students should actively engage with every opportunity of participating in self-directed learning activities and using learning resources, such as those offered as a part of a course by instructors (as noted above), as well as self-study programs offered by the faculty, self-access centres and learner support groups on campus.

In addition, as the research findings suggested, self-study learners may encounter frustrations caused by technical difficulties, managing software use and language learning problems, so that maintaining motivation becomes an issue. Recognising the importance of being open to interaction with peers and the reflective learning processes, they should consider learning together with friends and sharing their learning insights with others. To gain further support from peers and strengthen their motivation, it is vital for students to exchange their opinions with other learners, for instance, through writing learning journals and joining student forums. This should help them to raise their awareness of the learning process (e.g. strategy use, goals,

problems) to become an effectively reflective learners, and maintain their willingness and interest to continue learning in a self-directed multimedia environment.

Finally, to become autonomous self-directed language learners, students must understand the importance of sufficient patience and the length of time invested in multimedia environments before they can develop abilities to control the process. This should help learners build up their familiarity with, and self-confidence in using the software functions, develop *metacognitive knowledge* to manage software and assessment, and gain linguistic knowledge through trial and errors, and eventually reach the ZPD (Vygotsky, 1987) and develop as self-regulated language learners.

#### **9.4 Directions for future research**

From a methodological point of view, in order to have a more complete understanding of the learning process, the use of multiple qualitative methods (e.g. interviews, observation, learning diaries, debriefings, etc.) are considered in this study. In particular, the introspective, intensive interviews and learning diaries are regarded as important research techniques that allowed me to track continuous themes as well as specific factors during the learning process. Furthermore, the long-term research approach was crucial, as it enabled me to uncover the participants' interaction with computers and other participants, and capture the changing impact of factors, individual traits and learners' perception over a long period of time. This also makes this study valuable, as it contributes to the need for longitudinal research into the learning processes. It also reveals how learners construct their learning and interact

with multimedia environments and the non-multimedia factors involved in the field of CALL research. Consequently, this in turn suggests that research on ESL/EFL students using multimedia for self-study purposes should take a sociocultural stance and use qualitative approaches to investigate learners' interaction with multimedia resources as a social practice to gain in-depth perspectives. More importantly, while designing a study of the use of multimedia for self-directed learners, researchers should take into account the findings of the present research by focusing on several social factors (e.g. the impact of human-computer interaction and human-human interaction on self-directed language learning), to capture the complexity and essence of the learning processes.

Additionally, I will mention four directions for further research. Firstly, future research may study self-directed learning processes of students from other countries, as it is possible that students may adopt different approaches or respond with different attitudes depending on their previous learning experience and beliefs that may be influenced by different institutional and social contexts. Such studies may contribute to a more comprehensive picture of the learning process in multimedia environments due to the variations between human-computer and human-human interactions and impact on the reconstruction of individual traits.

Secondly, this research has shown complex interaction in how the learning processes are constructed among a group of learners who are less successful university students in this particular subject. Future research on self-directed multimedia language learning may consider examining the interaction among participants of different

language proficiencies. As indicated in this study, peers served multiple roles (e.g. competitors, companions, resources, counsellors, etc.) and caused an active, multifaceted and changing impact on the participants' motivation, self-confidence and strategy use in different stages. This study also suggests the less successful students appeared to be motivated intrinsically, extrinsically and socially to learn at different stages. In some circumstances in particular, interaction with peers was found to be influential in disturbing or facilitating the use of strategies in the learning processes within multimedia environments, which in turn affected the reconstruction of individual traits. In this regard, studies on mixed proficiency language learners can expand the understanding of dynamic learning processes and their impact on self-directed language learning. Meanwhile, this research direction may contribute to the exploration of the pedagogical implications, which are important, given that language institutions, educators and practitioners are often likely to encounter learners with mixed language proficiency in class or self-access centres, or self-study learners who are not necessarily all at the same level of proficiency.

Thirdly, future research on self-directed multimedia learning should address aspects of the relationship between the participants' learning in the English classroom and learning in multimedia environments. Due to the focus on learner perspectives, this study has not examined the perspectives of the instructors in conventional classrooms, but has noted the impact of this project on classroom learning from the participants' point of view, as many schools require low-achieving students to spend extra time self-studying through self-access centres as a compulsory component to gain extra practice or credits. Researching into self-directed multimedia language learning as a

remedial method for students can be beneficial by investigating how the self-directed multimedia learning experience affects students' learning in conventional classrooms, including eliciting the instructors' points of view, and scrutinising the influence on the participants' learning attitudes, motivation, self-confidence, strategy use and learning behaviours in a classroom context. In addition, the impact of teaching practice and teachers' expectations on learners' self-directed multimedia learning processes can be further explored. Therefore, by expanding the scope of the present study in future research projects and viewing learning as a social practice that learners apply to formal and informal learning contexts, we can develop our understanding of self-directed multimedia learning.

Fourthly, more research studies should be conducted to investigate the general benefits to the learners' views of the nature of learning. Specific attention should be given to how such experience affects the learners' role as students in different contexts. The present research has identified certain positive impacts of the self-directed multimedia learning experience on learners' attitudes, motivation and self-confidence in wider contexts. As discussed in Chapter 8.4 and 8.5, the participants perceived various benefits from problem-solving processes in the self-directed multimedia language learning project (e.g. their ways of dealing with learning problems, being autonomous and responsible learners in university study and positive in a social context and making career plans). Apparently, the benefit of such experience is for learning in general and reaches beyond the learning of English. The students' comments on the problems and difficulties they encountered and how they used strategies developed through the process could be useful in helping learners in

other contexts. Thus, more in-depth investigation of general benefits to the learners should be valuable, as it may provide practical implications and expand the applicability of self-directed multimedia learning, for instance to learners with special needs.

### **9.5 Reflections on this study**

To conclude the thesis, I would like to offer a reflection on conducting this research. First, as discussed earlier in the methodology chapter (Chapter 3), establishing a rapport with the participants was very important to this study. The on-going contact with the less successful learners over two years has allowed me to gain valuable insights into their needs, struggles, efforts, failures and successes, which also have made this study possible. Thus, regardless of the completion of this study, I continue to offer my assistance to the participants and keep in touch with them in various ways, such as e-mail or face-to-face contact, to share their thoughts regarding their language learning and university lives. More importantly, as a researcher and a language teacher, conducting this study helped raise my awareness of learners' needs and perspectives. I also regard such experiences as precious opportunities that allow me to listen to their thoughts sympathetically and remind me to pay more attention to students' true needs which lie beneath their sometimes unpleasant behaviours. The study itself also helped me realise that learning is a dynamically ongoing process which is situated in a social context. As a researcher, it encouraged me to become a learner, to keep an open mind and to learn from the students by revisiting what they reflected on and making sense of their language learning processes. Such experience is extraordinary for me as I continue to learn while being a researcher.

Second, this study is not without limitations. One such limitation is that the study does not use computer software to technically document the student's learning moves/function use in their learning sessions. In other words, except for their self-observation DV recordings, how the participants learn by clicking their mouse to use different functions or do different tasks was not investigated. As such, a detailed picture of how they progressed in the learning session is not recorded, and the picture we do have might not be entirely accurate. Although self-observation and learning diaries may have explained the learning processes, using software to record their actual moves would surely provide detailed and objective information on the interaction between human and computers. However, this may in turn increase the difficulty level of data analysis and interpretation, and place restrictions on the computer settings and location, and more importantly, may affect the learners' willingness to randomly explore the environments if they are aware of the fact their moves are being monitored.

In addition, this study has documented the learning processes by employing a series of interactive CD-ROM programs in various genres (e.g. news, movies, comedies, etc.), which the audio-visual centre of the library of the university provided. However, as the findings of the study suggest, the software design and task requirements were important factors that affected how the learners interact with the software. For instance, the participants reported problems of unpredictable feedback while using role-play functions and discrepancies between learners' expectation, and the task requirements were found to be one of the major reasons that caused the difficulties. Thus, using different software that with different tasks, requires different interactive

functions, may affect the learners' responses to the software learning tasks. Due to the availability of resources in the institution, the present study has considered such limitations and then adopted software that meets the feature description of multimedia environments defined by the literature as closely as possible. Nonetheless, such concerns should not be regarded as specific to the present study, as they may affect any studies that adopt particular software.

Lastly, this study did not gather data from standardised tests results or teachers' reports on students' progress, although this might have provided evidence of students' progress in terms of their 'outer achievement' (van Lier, 1996) as parts of the impact of self-directed multimedia language learning experience. There are a number of reasons why the researcher made this decision. As the nature of the study is to explore the learning processes and interaction involving less successful language learners, investigating the effectiveness of the self-directed multimedia experience is not the main focus. In fact, although conducting standardised tests was considered as a research strategy to promote the participants' extrinsic motivation, such an approach may also add a variable that may hinder the development of intrinsic motivation and self-confidence of low achievers. Therefore, considering the learning needs of these participants, test data is not appropriate for researching the learning processes of less successful students in self-directed learning mode. Adding such a factor appears to contradict the assumptions of this research and inhibit the low-achievers' willingness to participate in this study. Specifically, the choice of not using test data became clear after meeting the potential subjects. Some rejected this idea due to the pressure and anxiety it would cause them. Nonetheless, future research may consider gathering test

data with different participants or research settings (e.g. investigating self-directed learning as a compulsory component in formal language courses), as, for instance, giving students pre-, mid- and post course proficiency tests may offer further information about students' language proficiency or progress in their self-directed learning at different stages.

To summarise, the conclusion of this thesis does not end my concern for less successful learners and self-directed multimedia language learning. In fact, I realise that the importance of the issues will further encourage me to make more efforts to continue inquiry and research. It is hoped that the questions raised in this study will invite more investigation so that more understanding of multimedia learning processes can be developed and assist less successful students to become autonomous self-directed language learners.

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**Appendix A**  
**Informed Consent Form**  
(An English version translated from Mandarin Chinese)

Newcastle University  
School of Education, Communication and Language Sciences  
Informed Consent Document

**The Researcher:** Pei-Lun Kao ([Pei-Lun.Kao@ncl.ac.uk](mailto:Pei-Lun.Kao@ncl.ac.uk) or [peillunka@mail.cgu.edu.tw](mailto:peillunka@mail.cgu.edu.tw))

Title of the Research: Fostering foreign language learning among less successful learners: exploring the role of self-directed multimedia learning environments

This Informed Consent Form will explain what being a research subject in a project involves. It is important that you read this document carefully and then decide whether you agree to be a volunteer and participate in this project.

**Purpose:** The purposes of this research are as follows: I would like to examine the learning processes of self-directed multimedia language learning as well as investigate the impact on the learners.

**Duration:** The learning course lasts for two semesters on a weekly basis during term time. Each learning session lasts for 90 minutes. There will be four individual interviews which last for 30 minutes each, at the beginning, middle and end of the research project. Two 50-minute group interviews will be held at the end of each semester.

**Location/Time:** The course will be held at the Computer Lab 6 on 3<sup>rd</sup> floor of the Management Building at Chang Gung University. Participants are expected to attend the course at 6pm on Thursdays.

**Procedures:** Each participant will be asked to submit learning diaries through e-mail or on hand-written forms within two days after each learning session. Technical/learning assistance and a variety of software will be provided during each self-study session, when requested. A 10-minute debriefing, with a group of 3 students, will be randomly arranged at the end of each session to reflect/discuss how and what the participants learnt.

**Audio and video recording:** With your permission, I would like to audiotape debriefings and individual interviews as well as videotape the group interviews and observation. Participants will be able to validate the transcribed data for the purpose of appropriate interpretation and analysis. Participants' identity will be kept confidential and will not be revealed in the final manuscript.

I, (Subject's Signature) \_\_\_\_\_, (date)\_\_\_\_\_ understand what my participation involves. I have read and fully understand the consent form. Therefore, I agree to participate voluntarily in this research project.

## **Appendix B**

### **Sample Interview Questions**

(An English version translated from Mandarin Chinese)

#### **The First Interview**

1. How many years have you been studying English? Where did you study it (e.g. at school, at home, with private tutors, in language schools, etc.)?
2. Please describe your experience of learning English in secondary/high school in the past (e.g. what is the English class like? What impressed you in English class? How did you behave in class)? What were your English grades in school? What were the major difficulties of learning English in class?
3. What do you think about your English proficiency in terms of speaking, listening, reading, writing, etc.? Which one do you think you are confident with? Which do you need to improve?
4. What methods have you tried so far to self-study English?
5. Have you ever tried to use multimedia CD-ROMs to improve your English? What do you think about this way of learning English?
6. In English class, what did you think about English teachers and classmates when they spoke English? Have you ever volunteered giving answers in class? Is there anything you feel uncomfortable about in class?
7. Why do you want to participate in this project? What are your expectations for joining it (e.g. goals or plans)? What do you hope to gain from it?

#### **The Second/ Third Interview**

1. Please talk about how you feel about using multimedia CD-ROM in learning English so far? Is it different from what you expected? Why?
2. What are the things that you like or dislike about using the CD-ROM (e.g. content, functions, software choices etc.) or other settings (activities, other people, duration, etc.)? Is there anything which makes you feel uncomfortable, anxious or worried while joining this project?
3. Comparing with the learning experience in conventional class, what is different in terms of the methods of learning English?

4. Does this multimedia project make you feel like learning English? How and why?
5. Since you joined in this project, have you noticed any changes in terms of your attitudes, motivation, self-confidence or learning methods in studying English?
6. Can you describe how you usually study English in each learning session (e.g. procedures, patterns of functions, software arrangement, learning particular skills or tasks, etc.)? What software have you used so far? How do you arrange/ decide the use of software?
7. Which software functions did you like or dislike? When you used software functions, were there any problems? How do you solve them?
8. Apart from using software functions, what else do you do to help you learning (e.g. taking notes, reviewing, etc)?
9. In your opinions, have you made any progress so far in terms of language learning and other aspects? How do you judge it?
10. What do you think about self-studying in the presence of peers or the instructor, the discussion (debriefing), writing diaries, etc. How do they affect your learning (e.g. advantages and disadvantages)?




#### **The Fourth Interview**

1. Can you recall any parts of the process that impressed you during the self-study multimedia project? What do you learn from the learning process in the multimedia environments? What was important for you in the project? How and why?
2. What is the influence of learning experience with the multimedia on your study or other aspects, at present and at that time?
3. Are you still interested in learning English? Did continue studying English after the project finished? Will you consider using multimedia software to self-study English?
4. Overall, when you recall the experience and processes of joining the project, what was the major difference that the project had which affected you, considering your attitudes before and after the project?
5. What are your suggestions for those who plan to apply multimedia CD-ROMs for self-studying English?

## Appendix C1




### Questionnaire of Learners' Perceived Self-confidence Level

This questionnaire uses the following coding scheme




Not at all confident					Very confident
1	2	3	4	5	
					

Please think about how confident you were/are in English at the beginning/end of the course. Then circle one number on the scale, 1-5, provided below for each category. Thank you.

#### ✓ The beginning of course

					
1. <i>Reading</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5
2. <i>Writing</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5
3. <i>Listening</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5
4. <i>Speaking</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5

#### ✓ The end of course

					
1. <i>Reading</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5
2. <i>Writing</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5
3. <i>Listening</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5
4. <i>Speaking</i>					
a) in an academic context	1	2	3	4	5
b) in social/everyday contexts	1	2	3	4	5

(Adapted from Lai, 2003:332)

## Appendix C2

### Overview of Questionnaire Results

The participants' perceived confidence level at the beginning and end of course

		S1		S2		S3		S4		S5		S6	
		A	B	A	B	A	B	A	B	A	B	A	B
Reading	a) in academic context	3	4	2	3	3	3	2	4	2	4	3	4
	b) in social/everyday contexts	1	3	1	3	3	4	2	4	1	3	3	3
Writing	a) in academic context	3	3	1	2	2	2	1	2	2	3	3	3
	b) in social/everyday contexts	1	2	1	3	3	3	1	2	1	2	3	3
Listening	a) in academic context	1	4	2	2	2	3	2	4	2	3	2	3
	b) in social/everyday contexts	1	4	1	3	3	3	2	4	1	3	2	3
Speaking	a) in academic context	1	4	1	2	3	3	2	4	1	3	2	4
	b) in social/everyday contexts	1	4	1	2	3	4	2	4	1	3	2	4

1. A: The beginning of course B: The end of course
2. This questionnaire uses the following coding scheme:

Not at all confident				Very confident	
1	2	3	4	5	
☹		☺		☺	

## Appendix D

### Language Learning Strategies

Generic strategy classification	Representative strategies	Definitions
Metacognitive strategies	1. Selective attention 2. Planning 3. Monitoring 4. Evaluation	*Focusing on special aspects of learning tasks, as in planning to listen for key words or phrases. *Planning for the organization of either written or spoken discourse. *Reviewing attention to a task, comprehension of information that should be remembered, or production while it is occurring. *Checking comprehension after completion of a receptive language activity, or evaluation language production after it has taken place.
Cognitive strategies	1. Rehearsal 2. Organization 3. Inferencing 4. Summarizing 5. Deducing 6. Imagery 7. Transfer 8. Elaboration	* Repeating in the names of items or objects to be remembered. *Grouping and classifying words, terminology, or concepts according to their semantic or syntactic attributes. *Using information in text to guess meanings of new linguistic items, predict outcomes, or complete missing parts. *Intermittently synthesizing what one has heard to ensure the information has been retained. *Applying rules to the understanding of language. *Using visual images (either generated or actual) to understand and remember new verbal information. *Using known linguistic information to facilitate a new learning task. *Linking ideas contained in new information, or integrating new ideas with known information.
Social/affective strategies	1. Cooperation 2. Questioning for clarification 3. Self-talk	*Working with peers to solve a problem, pool information, check notes, or get feedback on a learning activity. *Eliciting from a teacher or peer additional explanation, rephrasing, or examples. *Using mental redirection of thinking to assure oneself that a learning activity will be successful or to reduce anxiety about a task.

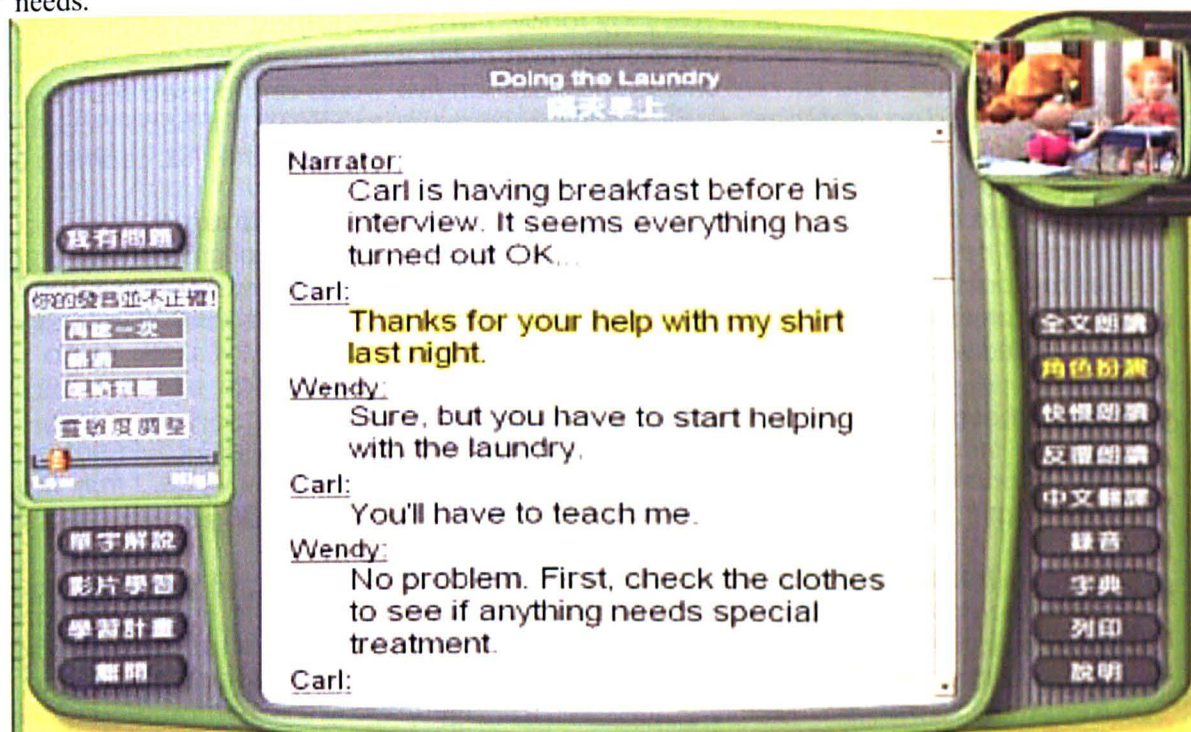
(Adapted from O'Malley *et al.* 1985:44, Cited in O'Malley & Chamot 1990: 46)

## Appendix E

### Screenshots of Software

Ready-made commercial CD-ROM Software mostly contains choices of help functions and interactive tasks, as shown, on both sides (e.g. read whole text, role-play, fast/slow audio text, repeat, Chinese translation, record, dictionary, etc.).

(A) Picture A is a screenshot of an interactive task/function, role-play. The dialogue box on the left illustrates the feedback from the SRS of the software when the highlighted sentence is not spoken properly. The comment is “Your pronunciation is not correct!” Then users have to choose one from the three options (i.e. try it again, skip it, read it to me) to move on. Optionally, the criteria can be adjusted on a scale from low to high, depending on users’ needs.



(B) Picture B shows a screenshot of listening tasks with various options (e.g. subtitles, speed, repeat, etc.) (Provided by the publisher, *Live ABC Interactive English*)



## Appendix F

### Additional Data

#### 6.2.2 Role-playing

- a) S2: I just hope I could truly, completely, and fluently read through them next, next and next time.**

Finally I tried the function of role-play today. I was lucky to pass most of the dialogue. But I also doubted whether or not the computer was broken. Because I failed the sentences that were all very simple and less than five words and passed the very long and demanding sentences easily. I don't know what to say... I just hope I could truly completely and fluently read through them next, next and next time. (S2, Learning Diary: 15/03/2004)

- b) S1: I have to change my intonation...for five times...Then I decided to skip it...**

I knew I had to change my intonation. I copied it exactly like the original. It just did not let me pass. I have no idea what the standard is. It really upset me. Sometimes, I just kept repeating it maybe for five times, which was my limit. Then I decided to skip it because I was really bored. (S1, Interview 3: 20/05/2004)

- S5: I truly thought what I said was rubbish. It was so hard!**

I have tried to learn its intonation and linking sound. But I failed, as I could not pick up (the intonation and linking sound). Especially when I replayed my voice, I truly thought that what I spoke was rubbish. It was so hard! (S5, Learning Diary 18/11/2003)

- c) S2: English intonation is extremely difficult for me to learn.**

Psychologically I still think there is an obstacle for me in that the English intonation is extremely difficult for me to learn. When I hear it, I think they (native speakers) speak very naturally and I felt it is natural to hear it. But when it is my turn to speak, it becomes very unnatural. It is very strange! It is like foreigners have their own ways of talking, while we don't have that kind of intonation in Chinese. (S2, Interview 3: 20/05/2004)

- S4:... still very hard to imitate the intonation.**

I was very used to the software, LIVE. However, I found it was still very hard to imitate the intonation. Was it because the intonation in Chinese is very flat and I was not used to the wavy intonation? (S4, Learning Diary 11: 09/03/2004)

- S12: I did not think saying those words really mattered...I felt frustrated! At last I had to give up...**

I felt great about the role-play because I could practice dialogues and speaking. But there were some flaws with the design. The computer was too demanding in that it asked me to say something like "Uh" or "Hum", some words with a strange tone. I did not think saying those words really mattered. It set me up because I had to say those words so many times. I felt so frustrated! At last I had to give up practicing those sentences. Maybe I have not got used to that kind of learning pattern. Besides, it was too hard for me. I don't think that's natural. (S12, Learning Diary: 14/10/03)

- S10: I was very upset about it!**

When I practice the conversation today, maybe because my pronunciation was not standard, the computer told me I was wrong after I raised the threshold only a bit higher. I was very upset about it!! (S10, Learning Diary: 18/11/03)

#### 6.3.1 Managing software

- a) S1: ...It took me so much time to comprehend a small part of the film.**

Today I used one of the comedy series ... I listened to each segment three times: once without subtitles, I played it again with English subtitles. Then I watched it again with

Chinese subtitles. It took me so much time to comprehend a small part of the film. Although those Caroline Comedy series are quite good, I could not catch the speaking speed immediately. Slowing down the speed did help a little bit, but I still did not understand those English subtitles that were much too hard for me. I guess I really have to improve my English abilities! ... (S1, Learning Diary: 15/10/03)

S1: I still could not understand what the Caroline (comedy) is talking about. I am quite disappointed because I heard that others could gradually catch what it said. But I still could not make it. ... (S1, Learning Diary: 28/10/03)

### 6.3.2 Adjusting learning pace

a) S1: *...It seemed not so organized when I absorbed different things every week...*

I used to change software every time. It was fun. But I found it was not very useful. And I usually could not finish studying one CD-ROM each time. It didn't seem so organized when I absorbed different things every week. (S1, Interview 2:16/12/03)

S3: *Keeping on changing software is more refreshing. But I did not know what I have learnt.*

I often used what I wanted to use, without repeating the same software and I did not take notes. Keeping on changing software is more refreshing. But I did not know what I have learnt. Maybe I did not learn much because I only listen to it once a week. (S3, Interview 2:16/12/03)

### 6.3.3 Self-assessing progress

a.) **Doubts about Efficiency**

S3: Compared to the "formal lessons", it helped to diminish some fear and pressure I felt. However, I doubt the learning effectiveness. Is it really helpful to learn English in a relaxing, happy-learning and non-stress environment? Hum...for me, maybe it is more helpful at the beginning. (S3, Learning Diary: 2/12/03)

S6: There is something I do worry about when learning in multimedia environments. I am often worried that I would play truant and waste time here. I guess I did not learn much as I did not use the time effectively. (S6, Interview 2: 16/12/03)

S12: My expectation and motivation are the same. But so far it seems I have made obvious progress maybe because I never used the same software at every session. I always felt like trying new stuff. (S12, Interview 2: 19/12/03)

### 6.4.1 Fear of speaking

a) S1: **I was very scared of speaking English. Then I decided to give up.**

...Originally, I would like to use recording, but I was very scared of speaking English. Then I decided to give up, but definitely, I will try it next time... However, I am truly afraid of English. Maybe I still could not overcome my **psychological obstacles**! When the instructor was near me, I felt very frightened at once. Though I knew the instructor was kind, I still could not overcome this feeling... (S1, learning diary: 15/10/03)

b) S5: **...I spoke super quietly...what I said was very bad...**

I was braver speaking this time though I did not speak more 'standard'... I tried the record function today. But I spoke super quietly. It was because I did not dare to speak. Besides, I felt what I said was very bad. ... (S5, Learning diary: 21/10/03)

**S5: I was worried that others might hear mine...**

In fact, when I was recording or role-playing, initially I assumed others were always concentrating on listening to their own stuff. But when I found I could actually hear others' voices, I was frightened because that means others could hear me speaking as well! I knew that happened only when you stop or read the text. But I was worried that others might hear mine. So I usually cover my mouth (while speaking). (S5, Interview 2: 16/12/03)

**c) S6: I will choose to study alone because I can speak a bit louder without being afraid of others.**

**The Researcher:** If you have choices, would you choose to study alone in the dorm or with others together?

**S6:** I will choose to study alone because I can speak a bit louder without being afraid of others.

**The Researcher:** How do others affect your learning?

**S6:** I always notice others and I feel others all speak very well. (S6, Learning diary: 09/12/03)

### 6.4.2 Difficulties with listening and speaking

**a) S3: What could I learn in 60-70 minutes?**

It was a bit of a rush. I didn't think the time was really enough. What could I learn in 60-70 minutes? I learnt English very slowly and forgot it quickly. (S3, Learning diary: 21/10/03)

**b) S2: ...English intonation is extremely difficult for me to learn.**

Psychologically I still think there is an obstacle for me with the English intonation which makes it extremely difficult for me to learn. When I hear it, I think they (native speakers) speak very naturally and I felt it is natural to hear it. But when it is my turn to speak it becomes very unnatural. It is very strange! It is like foreigners have their own ways of talking, while we don't have that kind of intonation in Chinese. (S2, Interview 3: 20/05/2004)

**S4: ... still very hard to imitate the intonation.**

I was very used to the software, LIVE. However, I found it was still very hard to imitate the intonation. Was it because the intonation in Chinese is very flat and I was not used to the wavy intonation? (S4, Learning Diary11: 09/03/2004)

### 7.2.3 Alternative ways to cope with technical problems

**a) S8: I am very angry!**

I tried three computers but I could not install it successfully. I am very angry! I am very angry! (She said it again in English). So what I did was read the (printed) magazine, Live Feb. version. When I read part of conversation, I followed it by repeating the conversation for a while and changing my intonation to play different roles. Ah!... (She sighed). This is my reflection today. (S8, Debriefings: 11/03/04)

**S8: Next time, I have to prepare an extra magazine in case I need it.**

Today I used the software, 'Theme-based Conversation'. I watched the movie first and paid attention to the pronunciation and intonation. Then I used the record function...Interacting with the computer is much more interesting than staring at the magazine alone!...It is fast and fun. And the test becomes less difficult, which gives me a sense of achievement^^. I hope I could learn efficiently like this. It is time-consuming if installing software takes too long. Next time, I have to prepare an extra magazine in case I need it. (S8, Learning diaries: 15/03/04)

**b) The Instructor:** What did you do with the problems you just mentioned?

**S4:** Well, if there were problems with certain functions, I just avoided using them temporarily. **Instead, I would try other ways if the computer could not interact with me.** For example, I read them out and played different characters each time. **My way to**

overcome it is by keeping on speaking. Anyway, as long as I can say something, that will do. (S4, Self-observation: 16/05/04)

### 7.3.1 Managing software

a) **S4: to learn English well, I should start with some basic and practical daily life conversations**

The goal I set to improve my listening is to understand what English teachers say and catch up with the speed. Another thing is to know more words about the objects we often use in daily life and the phrases to communicate with others. **I think, to learn English well, I should start with some basic and practical daily life conversations and, then gradually I should move on to some news reports with in-depth and difficult content.** (S4, Learning diaries: 25/11/2003)

**S4: I never thought I would understand it.**

I tried different kinds of software at the first semester. Sometimes, I felt frustrated because it was too fast. I did not know how to use all the functions at that time. So I tried them slowly...**Now I know which one I really need. I have my own learning sequence....I was glad I challenged CNN. It meant something to me. I never thought I would understand it.** (S4, Interview 3: 20/05/04)

### 7.3.2 Adjusting learning pace

a) **S1: I feel a real sense of achievement**

**I finally finished the Live CD today. I feel a real sense of achievement.** And the same as last time, I still use record and role-play. Besides, one special thing is that I raised the threshold to be higher!... **I also read out the whole article without any mistakes. Yes!** (S1, learning diaries: 15/03/04)

**S1: I feel a real sense of achievement**

Again I still used Live. But I studied a different topic (CD), going out for a meal. **Surprisingly, there were many words that I have studied earlier (in the previous CD). . I feel a real sense of achievement** that I had chances to review the words I know.... (S1, learning diaries: 22/03/04)

b) **S3: With multimedia, I never have fallen asleep maybe because there are frames and videos, which are not static, like holding pens and books. I can actually use it and play with it. Every time I always start by watching films that are more interesting** (S3, Interview 3: 20/05/04)

**S5: I used Live (Jan.) this time. ... this time I found I could gradually control my learning procedures.** Whenever I felt tired, I usually watched the movie or MTV. Then when I finished listening to it, I would start to try the dictation tests. I simply treated it as a way to memorize words. (S5, Learning diaries: 19/04/04)

**S8: I was choosing where to start watching at that time. It should be some part of the movie. I was giving myself a break and a rest for a while during the middle (of the learning session). I usually choose movie or MTV...etc. But I still learned while watching the movie. If I have watched it before, I will turn the captions off. After finishing the movie, I would go back to check the movie with the captions on.**

**The instructor:** How do you adjust your pace?

**S8: At first I usually think about how to allocate my time for that session.** Then I would arrange a break after studying for some time. Apart from movies, sometimes when I felt too tired to listen, I would do the test first. (S8, Self-observation: 19/04/04)

### 7.3.3 Self-assessing progress

- a) **S1:** I still use recording and role-playing. **I felt a sense of achievement** because I adjusted the threshold to higher today!!...With an easier dialogue, I finished it without any errors. (S1, Learning diaries: 15/03/04)
- S6:** I used the Caroline comedy more smoothly today. I spent most of the time listening to the dialogues. Compared to the first few sessions, I can catch its speed now. I also used the testing part. I got 82 in listening, which was better than the score (70) last time. I was very happy because **I made progress. Yes!**

### 7.4.1 Coping with fear

- a) **S10:** "Today I heard loads and loads of voices. Everyone was making a great effort to practice speaking. I like it because I feel myself as a member of a team. Because I feel myself as a member of team I really feel motivated to speak like others" (S10, Learning diaries: 09/03/04)
- S4:** We shared the same goal and made the effort together. I don't feel alone because everyone practices hard together. I felt lucky to belong to this group. (S4, Interview 2:19/12/03)
- b) **S7:** The funny thing today was, in debriefing, the boy said he would like to sing along with MTV but he was too shy. To be honest, we heard him clearly as soon as he started singing. He did not even know he sang very loudly. Ha! Ha! (S7, Learning diaries: 28/10/03)

### 7.4.2 Tackling listening and speaking problems

- a) **S1:** If I couldn't make it correctly, I just kept practicing. The computer is dead anyway. So I just kept speaking until I did it right... the intonation seemed very important while role-playing. If the intonation I spoke was wrong, it would say "Repeat it again!" **What I did was keep drilling and drilling.** At first, I couldn't make it. Now I can pass it if I adjust the threshold to the lowest. But with longer words, it is still difficult for me to pay attention to so many things. (S1, Interview 2: 19/12/03)
- **S2:** Today I still used Live. I was very used to this way of learning. **I kept using recording functions today.** I felt there had been a little tiny difference happening to the English that I spoke. At least I spoke much more fluently. **There was also some change with my intonation.** That gave me a little tiny sense of achievement....I guessed I had not learnt many skills or words, however, I felt I was more willing to pay attention to listening to others (speaking English) and I wanted to know what they were talking about... (S2, Learning diaries: 18/11/2003)
- S9:** For role-play, I found a small technique, **which was to imitate the intonation and slowly do it.** Then, when it's my turn to play, I have to stop for a second and then say it. In addition, I had to say the same linking sound as the model soundtrack or I would fail to pass it. So I just copy how it said, and I made it!! (S9, Learning diaries: 18/11/2003)

### 8.2.1 Perceptions, beliefs, self-confidence and intrinsic motivation

- a) **S1:** In the past, as soon as the teacher started to speak English, I would start "withdrawing". Then I did not want to listen or see the teacher. I just did my own business. I simply hated English! Now I still don't like English. But I would use multimedia if I have time to study English because it is fun. (Interview 4)
- S6:** I think because I listen to English often I get used to the intonation and easily comprehend it. ...The **environment is important.** Getting in touch with English regularly enhances the feeling for English and I don't feel unfamiliar with it anymore. **I become**

**more sensitive when I listen to English.** (Interview 4)

- b) **S5:** At first, I remember I did not like English at all and most of us seemed to be resistant to learning English but we seemed to take it as another chance that could alter our fate. Then gradually, through the discussion, we found our feelings seemed to be more or less the same. Gradually, we found our own ways and shared experiences throughout the two semesters. Because originally we all started from an extremely poor status, the experience we shared was more helpful and we helped each other grow. I found this is very helpful because you receive advice from people who were at about the same level with a similar experience. (Interview 4)

### 8.3.2 Speaking

- a) **S3:** With multimedia, I can understand the dialogues or articles more now. Usually I listen first so that I can get easily involved in it. Regarding speaking, because I kept practicing it, I am braver speaking now. In class, I will not dare to speak up if I have not prepared for it. But if the teacher announces the tasks in advance, **I will prepare for it. Then I will volunteer to answer during the class.**

**The researcher:** What would be different if you had not participated in this project?

- S3:** I would never volunteer and not even like to touch English at all! I just felt I could never be able to speak it well no matter how hard I tried. It made me feel annoyed! It's different now. **Because I am making progress slowly, I believe I can improve my English better.** (S3, Interview 3: 20/05/04)

**The researcher:** Can you describe more about the changes?

- S3:** Because I touch English regularly. It is different from before when the teacher forced me to learn. Now I want to learn it for myself. Though there is still a teacher, I have more chances to touch English. It becomes like a habit now, not like the curiosity I felt at the beginning....

### 8.4.1 Learning specialised subjects

#### Excepts about the impact on how they learnt    Commentary specialized subjects

- |    |   |  |
|----|---|--|
| S1 | <i>Like I learnt in multimedia, I recorded (the lecture) and went back to listen to it.... I guess I am very familiar with the process, keeping repeating listening. From then, I feel what the teacher says becomes easier for me.</i>   | The process of improving listening: recording, repeating listening and speaking.                           |
| S2 | <i>For example, during the test, I will try not to read Chinese first but English to see whether I can understand those. Or I would try not to translate them when I read the handouts and browse through it. Unless there are some words that are important, I will then check the definition.</i> | Guessing the meaning without relying on translation first. Browsing and checking only the important words. |
| S3 | <i>Now I still have the habit of reading out English loudly especially with some terms. It impressed me and helped me to memorize them easily..... One thing makes me different from my other friends is that I would pay much attention to listen to English if I hear any.</i>                    | Reading out loudly to remember words. Paying attention to English in class                                 |
| S4 | <i>The influence on my study now is that I will think what I</i>  | Taking control of learning, thinking   |

*really need when I study nursing subjects. For example, with the subject of Basic Nursing, the teacher would give us handouts that were usually too simple. Then I think my needs should lie in the textbook, not the handouts. So I read the textbook. Though it is all in English, I still choose to read it. I found the English is not that difficult and I don't resist to it.*

critically about what she needs, not resisting to English

S5 *The vocabulary is very different as they are related to nursing. But I learn to use the method I learnt in multimedia environments. In the past, I would directly say: "Wow! There is no way I can understand it". Now it will be alright. If I read an article, I may browse it quickly and guess the outline of it. Then I would know the direction to check and which words I must check or which ones I can simply ignore.*

Having faith in understanding the article. Catching the main points and ignoring unimportant words

S6 *To some extent, I have the similar feeling when I dealt with my subjects. What I mean it is the feeling that I have gone through the similar process before. So when I face the problems now, I know where to start tackling. Then I can get involved in the situation quickly.*

The process of solving problems and experience of controlling learning

## Appendix G

### A List of CD-ROM Software Used in the Study (shown in the following two pages)

CD-ROM Titles	Purposes and learning contents	Special features of software functions	Publishers and URL for the publisher's homepage
ABC Interactive English  (monthly magazine series)	Beginner level. It aims at building foundation of English and providing practical phrases or words used in daily conversations with various topics through films, 3D animation, games, commercials, songs, movie reviews, etc.	Role-play (with SRS), speech record, dictionary, slow down speed, subtitles, repeat, tests, tutorials, etc.	Live ABC  <a href="http://www.liveabc.com/site/Online_Store/info_magazine_content_abc.asp">http://www.liveabc.com/site/Online_Store/info_magazine_content_abc.asp</a>
Live Interaction English  (monthly magazine series)	Intermediate level. It provides lessons with various topics such as travel, cultural, sports, stories, news, poems through films through sit-com, commercials, songs, movie reviews, etc.	Role-play (with SRS), speech record, dictionary, slow down speed, subtitles, tests, tutorials, etc.	Live ABC  <a href="http://www.liveabc.com/site/Online_Store/info_magazine_content_live.asp">http://www.liveabc.com/site/Online_Store/info_magazine_content_live.asp</a>
CNN Interaction English  (monthly magazine series)	Advanced News English. For learners who plan to study abroad or communicate in English at work, including various topics (e.g. business, politics, science, entertainment) through news reports, interviews, etc.	Role-play (with SRS), speech record, dictionary, slow down audio speed, subtitles, tests, dictation practice, etc.	Live ABC  <a href="http://www.liveabc.com/site/Online_Store/info_magazine_content_cnn.asp">http://www.liveabc.com/site/Online_Store/info_magazine_content_cnn.asp</a>
Caroline in the City (Comedies series)	Advanced level. Daily conversations English with various themes in 10 CD-ROMs with interesting stories.	Same as above	Live ABC (copy right expired in 2005)
Live Interactive English Classroom  (topic-based series)	Intermediate level. 6 CD-ROM s contain six different topics (e.g. asking for directions, shopping, travelling, house rental, school life).	Same as above	Live ABC  <a href="http://www.liveabc.com">http://www.liveabc.com</a>
My life around the community  (picture dictionary)	Beginner level. It provides 500 words in 25 themes that learners encounter regularly in daily life (e.g. food, shopping, service, entertainment, etc.).	Listening while gap-filling words, dictation tests, definitions and word usages, pronunciation, etc.	Live ABC  <a href="http://www.liveabc.com/site/Online_Store/info_mylife_around.asp">http://www.liveabc.com/site/Online_Store/info_mylife_around.asp</a>

CD-ROM Titles	Purposes and learning contents	Special features of software functions	Publishers and URL for the publisher's homepage
What women want (Movie)	The movie themes involved expressions related to various topics or functional languages, such as giving compliments or comfort, discussing jobs, dating, etc.	Role-play (with SRS), record, dictionary, slow down audio speed, subtitles, repeat, etc.	Live ABC <a href="http://www.liveabc.com/site/Online_Store/info_man100.asp">http://www.liveabc.com/site/Online_Store/info_man100.asp</a>
Making presentation (‘English for office work’ series)	Authentic situations with practical dialogues involved various topics that learners can use in their office work (e.g. opening a Presentation, using Visual Aids, figures & Numbers, diagrams, making Comparisons, Q & A, etc.)	Read through the text (or select certain paragraphs), role-play (SRS with sound wave graphs of learners’ and the model’s), repeat, record, take notes, dictionary, dictionary, translation, etc. Learners can compare the difference and self-correct the errors.	Yuan-Liou Publishing Co., Ltd. 遠流出版社 <a href="http://www.ylib.com/search/ShowBook.asp?BookNo=CD038#">http://www.ylib.com/search/ShowBook.asp?BookNo=CD038#</a>
Public Speaking (‘English for office work’ series)	This CD-ROM provides 15 examples of public speech (e.g. giving a report at a company meeting) and four practical procedures to present a speech to ensure learners to confidently and clearly express opinions in public.	Same as above	Yuan-Liou Publishing Co., Ltd. 遠流出版社 <a href="http://www.ylib.com/search/ShowBook.asp?BookNo=CD031">http://www.ylib.com/search/ShowBook.asp?BookNo=CD031</a>
Telephone English (‘English for office work’ series)	This CD-ROM provided authentic telephone situations and solid course contents in three aspects: 1) Basic sentence patterns; 2) Basic telephone conversation (e.g. leaving a message); and 3) practical telephone conversation (e.g. greetings).	Same as above	Yuan-Liou Publishing Co., Ltd. 遠流出版社 <a href="http://www.ylib.com/search/ShowBook.asp?BookNo=CD039">http://www.ylib.com/search/ShowBook.asp?BookNo=CD039</a>

## Appendix H

### Publications and Conference Presentations

Pei-Lun Kao

#### (A) Publication

Kao, P. L. (2006). The impact of multimedia environments on self-confidence of low-achievers. *Annual Review of Education, Communication, and Language Sciences*, Volume 3, A3. (ISSN# 1743-159X)

Kao, P. L. (2005). How low-achievers use listening strategies in multimedia environments 北區英語教學中心, 英語學習電子報, e-Paper, 第三期 2005/10/31 發行.

#### (B) Conference Presentations

Kao, P. L. (2007). *Transformation of self-Confidence in multimedia environments*. The 2<sup>nd</sup> Newcastle Postgraduate Conference in Theoretical and Applied Linguistics, Newcastle, UK. June 25, 2007.

Kao, P. L. (2006). *Impact of multimedia environments on self-confidence of low achievers*. Paper accepted by The Pacific Association for Computer Assisted Language Learning (PacCALL) 3<sup>rd</sup> Annual Conference, Nanjing, China. November 16-19, 2006.

Kao, P. L. (2005). *The role of multimedia environments in helping low achievers with foreign language anxiety at university level*. The Use of New Technologies in Foreign Language Teaching (UNTELE), Compiègne, France. March 24-26, 2005.

Kao, P. L. (2004). *Multimedia environments and low achievers with foreign language anxiety*. The 13<sup>th</sup> Thirteenth International Symposium and Book Fair on English Teaching, Taipei, Taiwan, R.O.C. November 12-14, 2004.

Kao, P. L. (2004). *How multimedia environments help low achievers with foreign language anxiety*. The Second Asia TEFL International Conference, Seoul, Korea. November 5-7, 2004.

### Appendix I: Overview of Backgrounds of Participants S7 to S12

	S7	S8	S9	S10	S11	S12
Age	18	18	19	18	18	19
Starting age of learning English	10	13	11	10	13	12
Extra private lessons	Yes About school contents & conversations	Yes. About improving listening	Yes. About conversations	Yes About school contents	No	Yes. About school contents
Academic performance	55. Failed once in high school.	58	52 (Often near the boundary of failing )	53	58	45
Perceived proficiency in 4 skills	Listening & reading were alright. Speaking was poor.	Reading & writing were ok. Listening & speaking were below the average.	Reading was alright. Poor speaking and writing.	Listening & reading were ok. Writing & speaking were bad	Listening was not good. Reading was ok.	Reading & listening were difficult.
Previous learning experience in school	Can't understand if the audio speed is too fast.	Can't understand if the audio speed is too fast. Can't speak fluently as no enough vocab. Can't say an entire sentence.	Negative experience due to teacher's teaching approaches: textbooks, many tests & difficult grammar rules.	Can't understand if the audio speed is too fast. It is difficult to organise a full sentence.	Can't catch the main points or keep up with it if the audio speed is too fast.	Never improved listening in school .Scare of grammar. Endless tests and reciting words.
Learning attitudes or approaches in class	Passive. Unless teachers called, never answered Qs voluntarily for worrying about making errors.	Passive & shy. Won't answer teacher's Qs voluntarily. Lack environments to practice listening.	Feel bored for much time spent on doing tests. Very easy to forget what she just studied. Never understand grammar.	Feel bored as students drilled after teachers in class. Focus on grammar rules. Not useful.	Passive and shy. Had to go through answers in mind before answering as others might not understand what he said.	Passive. Won't answer teacher's Qs voluntarily. Worried about being called due to poor accent.
Learning attitudes or approaches in self-study	Passive. Listen to CD if there were tests.	Passive. Listening to CD when teachers asked. Reading novels.	'Touch' English often by listening to radio.	Passive. Listen to CD if teachers asked. Watching movie from TV.	Listening to English songs or watch NBA basketball games.	Passive and lazy. Watch movies to learn some English words.
Status of learning motivation	Extrinsic Motivation Only study English for exams.	Extrinsic motivation. Studying English is important for her future. Study English only for exams.	Extrinsic motivation. Studying English only for exams. English is important for future career.	Extrinsic motivation. Studying English for exams.	Extrinsic motivation. English is important for doing tests and future career.	No comments.
Status of self-confidence or anxiety symptoms	No self-confidence. Feel fear when speaking English	Need to improve self-confidence. Others are much better than her in class.	Can't remember words just studied. Always get poor test results even study hard.	Others are better than her.	Experienced 'mental block' in class as he could not respond properly even when he knew the answers.	No confidence. Poor memories & too lazy to remember words.
Expectation for this multimedia project	Hope to improve a lot of speaking and listening skills.	Hope to talk to foreigners fluently without fear.	Hope to learn practical things with daily-life content.	No comments	Hope to talk to foreigners without fear.	Hope to dare to chat with foreigners when travelling abroad.