AN EXPLORATION OF INTENDED, ENACTED AND EXPERIENCED TCSL E-LEARNING CURRICULUM IN A TAIWAN MASTER’S PROGRAM

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

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Declaration

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis/project is the result of work which has been carried out since the official commencement date of the approved research program; any editorial work, paid or unpaid, carried out by a third party is acknowledged; and, ethics procedures and guidelines have been followed.

Wen Hui Chang

16 March 2015
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ABSTRACT

This dissertation presents a case study focusing on the role of e-learning in a Master’s degree program for teaching Chinese as a second language (TCSL) in an institute in a university in Taiwan.

This study aimed to explore the relationship between e-learning education and TCSL curricula in Taiwan. An understanding of this relationship was first sought by exploring the existing literature and clarifying the meanings of e-learning more generally, investigating conceptual frameworks of curriculum, and then researching the developing role of e-learning firstly in CALL (computer-assisted language learning), and secondly in TCSL teacher preparation programs. This led to the conclusion that a systematic review of the situation in TCSL training in Taiwan was called for.

This research then sought to address the issue by conducting an in-depth inquiry into the major stakeholders’ perceptions of the role of e-learning in TCSL in terms of their intended, enacted and experienced curricula within a TCSL Master’s program in Taiwan. The research design involved a qualitative case study, framed by an interpretivist theoretical perspective and grounded in a constructionist epistemology. The primary research question was “How did the major stakeholders in the case study conceive of the role of e-learning education in a TCSL Master’s program in Taiwan?” Qualitative data collection methods and data analysis techniques were chosen that could facilitate an extensive understanding of e-learning in relation to the TCSL Master’s program.

The findings suggest that perspectives and experiences varied among the participants generally in expected ways but with some surprises. Overall, it was found that, within this Master’s program, e-learning was not a valued component. Three main areas of discussion arose from the findings. First, the factors that contributed to negative influences on participants’ perspectives about the importance of students’ e-learning development in their intended curricula. These were participants’ perceptions of e-learning in TCSL, their prior e-learning experiences in TCSL practice, and their perspectives on the relationship between TCSL teachers’ e-learning competence and job opportunities. Second, when Mishra and Koehler’s (2006) TPACK framework was used to evaluate participants’ curricula in relation to the formal courses of the Master’s program, none of the technology-related types of knowledge, TK, TCK and TPK, was found to be adequately catered for in the program. Third, participants had limited experience in relation to TCSL synchronous online distance learning despite an increasing demand for online TCSL teachers worldwide due to the radical development of ICT in the field of L2 education.

After exploring one case in depth this study supports the literature, which indicated a neglect of a significant role for e-learning in TCSL professional education, both in terms of applying up-to-date theories for L2 learning and in terms of preparing teachers for the explosive growth in international demand for CSL on-line teaching and learning. It adds to this research by providing insights into the perspectives underlying current practice by the three major sets of stakeholders in TCSL education, by drawing out the implications of the findings in terms of theoretical as well as practical perspectives, and by providing helpful recommendations for future research.
Chapter 1: INTRODUCTION

The rapid development of information and communication technology (ICT) has impacted greatly on almost every aspect of our daily lives, including the field of education. In recent years, there has been an expansion of e-learning in almost every level and aspect of education in Taiwan. There is also an increasing tendency to include e-learning in Chinese as a Second Language (CSL) instructional designs, which has given rise to a myriad of language learning software programs and a rapidly expanding number of semi- or fully-online language courses. This has been coupled with growing numbers of CSL learners worldwide, which has increased demand for Teaching Chinese as a Second Language (TCSL) teachers who have been educated in the implementation of e-learning. Increasingly TCSL teachers are expected to incorporate more e-learning into their teaching practice.

When the term e-learning was first introduced with the emergence of the World Wide Web in the 1990s (Bowles, 2004; Garrison, 2011; Mason & Rennie, 2006), it was commonly used to refer to the learning practice that was primarily facilitated by web-based and/or networked technologies, for example, online learning or social interaction (Garrison, 2011; Garrison & Anderson, 2003; Jenkins, Browne, Walker, & Hewitt, 2011). However, a review of recent literature reveals the term e-learning has broadened to include all forms of teaching and learning facilitated by electronic as well as information and communication technologies (ICT) (Andrews & Haythornthwaite, 2007; Bowles, 2004; Mason & Rennie, 2006; QAA, 2008). In this research, the term e-learning refers to any form of teaching and learning that is facilitated and enhanced by a range of offline digital facilities including: computer-based software or multimedia; online web-based multimedia and communication technologies; and the more recent ICT tools such as mobile computing and podcasting.

In the field of second language (L2) education, computer-assisted language learning (CALL) is considered an aspect of e-learning, as it is associated with computer-related technologies that assist and enhance L2 teaching and learning (Chaka, 2009; Lafford, 2009; Levy, 1997; Stockwell & Tanaka-Ellis, 2012). Since a Chinese CALL program was first developed in the 1970s by Chin-Chuan Chen, at the University of Illinois, USA, computer-
assisted and web-based Chinese language instructional software programs have become significantly more available for language teachers and learners (Bourgerie, 2003; Yao, 2009). This research examines the impact of e-learning in the field of second language teaching and learning, specifically as it relates to Chinese as a second language. In particular, this study is designed to learn more about pre-service TCSL teachers’ perceptions and capabilities to effectively integrate and apply e-learning in their teaching, which may have a positive impact on their future TCSL practice.

The following sections present a description of the research inquiry including: the background context; the research objectives and research questions; the research approach and research significance; and finally an outline of the thesis structure.

1.1 Background and Context

Learning Chinese as a second language has become increasingly popular around the world in recent decades (ATCSL, 2010; Y. Zhang, 2009). It has been estimated that there are currently more than 30 million CSL learners and over 2,500 universities providing CSL learning programs in about 100 countries around the world (G. E. Zhang, 2010). It was estimated that at the present time the demand for TCSL teachers might exceed one million (G. E. Zhang, 2010).

In Taiwan, my home country, interest in learning CSL has increased significantly. This phenomenon is not only reflected in the expansion of enrolments of foreign students in higher education and the university-affiliated CSL language centres, but also in the significant growth in the number of TOCFL (Test of Chinese as a Foreign Language) test-takers. According to the data provided by of the Taiwanese Ministry of Education’s Department of Statistics (2012), between 2001 and 2011 (excluding the students from native Chinese-speaking regions such as mainland China or Hong Kong) the number of overseas students enrolled in higher education increased from around 6,400 to 25,000. Among them, the enrolments of CSL students increased from around 5,200 to 14,500. In November 2005, the Ministry of Education in Taiwan established The Steering Committee for implementing the TOCFL (SC-TOP, 2007) to assess CSL learners’ Chinese proficiency.
Since then, the number of TOCFL test-takers has risen from 322 to nearly 15,000 within six years (from 2005 to 2011) (SC-TOP, 2007-2011).

Many students enrolled in higher education in Taiwan from non-Chinese speaking countries were considered to need additional CSL-enhanced courses to help overcome the language barriers. As a result, more than 30 university ancillary CSL centres have been established in Taiwan (Ministry of Education, 2010). Further, to meet the enormous and ever-growing demand for TCSL teachers in Taiwan as well as worldwide, nearly 20 universities and institutes are now providing formal TCSL teacher preparation in Bachelor’s and/or Master’s degree programs since the first TCSL graduate institute was established in 1995 (ATCSL, 2010).

There have been calls for a greater emphasis on e-learning implementation in the field of L2L (second language learning). For example, Kessler (2005) suggested that CALL has become an expected part of second language learning (L2L) programs because most of the language programs have been, more or less, impacted and/or assisted by e-learning related technologies. In the United States, many English learning programs were even provided exclusively in an online format. An online survey of job postings for Teaching English as a Second Language in 2003 also indicated that 90 to 95 percent of these positions listed CALL experience as one of the requirements (Kessler, 2005).

In the field of TCSL, more specifically, e-learning application is one of the capabilities in the standards for TCSL teachers. For example, the Standards for International Chinese Language Teachers by the Office of Chinese Language Council International (Hanban) considered ‘Modern Education Technique and Its Application’ as one of the requirements for a qualified TCSL teacher (Hanban, 2007). Similarly, the Australian Department of Education, Employment and Workplace Relations, has advocated that TCSL teachers are “informed and critical users of technology in language teaching and use technology both to support learning and as a basis for learning to communicate using technologies” (DEEWR, 2008, p. 6).

This has given rise to many websites that provide free or paid learning software programs for special needs such as listening, speaking, reading, or Chinese character writing practice in the forms of audio, mp3, videos, games, or flashcards. There are also
various online CSL learning courses available online, for example eChineseLearning, which advertises “Live Teacher from China” (eChineseLearning, 2006). In Taiwan, one CSL institute, Mandarin Training Center, started a distance CSL learning program, MTC Online, providing pilot courses for five universities overseas in 2011, and began officially recruiting students worldwide in 2012 (MTC Online, 2012). The online CSL courses enable overseas students to take real-time online Chinese lessons wherever they are.

In response to the need to promote competence in TCSL teachers’ ability to use e-learning, the Taiwanese government funded a five-year TCSL teacher e-learning training program from 2008 to 2012. This program aimed at preparing TCSL teachers to develop and be able to integrate their e-learning knowledge and skills into TCSL practice so as to cope with current technology-rich language learning environments (eChinese, 2012). The program comprised two sections, the beginners (three weeks) and the advanced (one week). Each of the sections provided 300 free places a year, giving priority to in-service TCSL teachers. People who were in the relevant academic fields such as TCSL pre-service students or those with Chinese language related majors were considered potential candidates if there were places vacant. However, in-service TCSL teachers were not as enthusiastic as expected by the program organizer. For example, when I started to conduct this research in 2010, I conducted informal interviews with 10 in-service TCSL teachers on the subject of free e-learning training program. I found that none of the teachers I interviewed were interested in attending the courses. In fact, in the two sections of the program I attended in 2011, among more than 30 students, there was only one student in the class who had had TCSL experience.

Furthermore, anecdotal evidence suggested that formal TCSL teacher preparation programs in Taiwan seemed to fail to adequately give their graduates the e-learning-related knowledge and skills that they might require for adapting to today’s technologically advanced language learning environment. For example, a survey on randomly selected websites of eight Taiwanese TCSL Master’s programs revealed that none of the eight graduate institutes included e-learning as a required component within their curricula. Among these institutes, Computer-assisted Instruction and Research on Multimedia and Chinese Language Instruction appeared to be the only two e-learning specific courses in
about 30 to 40 elective courses offered. However, it could be argued that the name of a course itself might not convey enough information about its contents. For example, courses such as *Chinese Language Instructional Design* or *Chinese Language Teaching Methods and Materials* might contain e-learning related elements. Hence, it would be imprudent to draw the conclusion that e-learning education was marginalised in the TCSL Master’s degree programs in Taiwan. Consequently, an in depth investigation and interpretation of e-learning education within Taiwanese TCSL Master’s programs seems crucial for a better understanding of the current state of e-learning in TCSL teacher preparation in Taiwan.

1.2 Objectives of this Study

The aim of this research is to explore the current relationship between e-learning education and a TCSL Master’s programs in Taiwan in order to understand better where we are and where we need to go from here. To better understand this relationship, it was necessary to enquire into the major stakeholders’ perceptions of the role of e-learning in TCSL in terms of their intended, enacted and experienced curricula within the Master’s program. The findings of the research are expected to lead to valuable recommendations for future curriculum in relation to e-learning enhancement within TCSL Master’s programs. The ultimate goal is to help improve pre-service TCSL teachers’ abilities to successfully adopt and adapt such constantly changing e-learning environments and consequently enhance the quality of their teaching in their future TCSL careers.

1.3 Research Questions

The primary research question was: “How did the major stakeholders of the case study conceive of the role of e-learning education in a TCSL Master’s program in Taiwan?”

The specific secondary questions that informed this research were:

1. How did the major stakeholders (administrators, instructors and students) perceive the role of e-learning in TCSL?
2. What intentions and/or expectations did the major stakeholders have in relation to e-learning in the TCSL Master’s program?
3. How did these major stakeholders enact their expectations in relation to e-learning in the TCSL Master’s program?
4. What did these major stakeholders experience in relation to e-learning in a TCSL Master’s program?

In answering the primary and secondary research questions, the researcher will consider consistencies, inconsistencies and trends that exist within and between the major stakeholders’ perspectives on their intended, enacted and experienced curricula, and the implications of this for e-learning in TCSL in Master’s degree programs in Taiwan. These exploratory research questions are expected to lead to a deeper level of exploration and understanding of the role of e-learning in the context of a TCSL Master’s degree program in Taiwan.

1.4 Research Approach

To achieve these research objectives a qualitative case study methodology is adopted that is shaped by constructionist epistemology and an interpretivist theoretical perspective. The selection of data collection and analysis methods was guided by this methodological approach. From the standpoint of constructionist epistemology, knowledge construction activities are performed by individuals and groups within social phenomena (Guba & Lincoln, 2005), and the ways of constructing knowledge may vary from individual to individual even within the same social phenomena (Crotty, 1998). Based upon such assumptions, a qualitative case study methodology was selected to allow the researcher to study particular social phenomena through accessing information provided by different groups of individuals within one learning community, in this case, a TCSL graduate institute in Taiwan. The case design employed in this study is an Embedded Single-Case design (Yin, 2009); a single-case with embedded subunits. This research involves one graduate institute as a single case and the participants were separated into three different main groups and each of the main groups contains subgroups.

Furthermore, constructionism entails a belief that meaning is not discovered nor created but constructed (Crotty, 1998; Sarantakos, 2005). Constructionists propose that knowledge and meanings (or meaningful reality) are constructed through the practices of interpretation and interaction within the world we are engaging with (Crotty, 1998). It is also suggested that the transmission and development of human knowledge does not
happen in isolation; knowledge is constructed within a social context through ways such as sharing understanding, practices, and language (Crotty, 1998; Schwandt, 2000). A constructionist epistemological framework shows us that the knowledge that emerges from the research process is based on the collaboration as well as interrelation between the researcher, the participants (in this case, the administrators, instructors, and students from the researched graduate institute) and the field studied (i.e. e-learning in TCSL teacher preparation programs). In light of this, open-ended questions were used within the interviews, so that participants could share their personal experience in relation to the issues being studied. A thematic data analysis (Braun & Clarke, 2006) was used to examine, interpret and generate the findings.

This research adopted a qualitative case study approach underpinned by a constructionist epistemology and interpretivist theoretical perspective to form a practical research design. Qualitative data collection methods and data analysis techniques were chosen that could facilitate an extensive understanding of e-learning in relation to TCSL Master’s programs, and the case study design allows locating this research in a TCSL graduate institute in Taiwan.

1.5 Significance of the Research

The exploration of the relationship between e-learning and Taiwanese TCSL Master’s programs is crucial to understanding the current state of e-learning in TCSL in Taiwan. While there are others who have an interest in the use of CALL (Blake, 2009; Garrett, 2009b; Hubbard, 2008; Hubbard & Levy, 2006; Levy, 2009), there is a lack of research related to e-learning education in TCSL Master’s programs in Taiwan. To date, there has been little discussion around the extent to which the training will enhance TCSL Masters students’ competence in integrating e-learning skills into their future pedagogy and teaching materials. To date, most research has focused on the technology and software implementations, while little emphasis has been placed on implications for pedagogy and teacher preparation in the research of L2 education (Brutt-Griffler, 2007; Compton, 2009; Hampel & Stickler, 2005; Zheng, 2005). To address this gap, this research into e-learning
in TCSL teacher preparation in Taiwan has the potential to inform both theory and future practice.

1.6 Structure of the Thesis

This thesis is organised into six chapters. Chapter 1 provides an overview of the focus and intent of this study. It started with the background and context of this inquiry followed by the objectives and the research questions, the approach and significance of the research, and finally an outline of the structure of this thesis. In the next chapter, relevant literature will be reviewed which examine the central concepts that inform the thesis and guide the data analysis, specifically, defining and discussing the issues in relation to e-learning and e-learning in L2 learning as well as in TCSL. This chapter also presents the key notions regarding some effective frameworks in relation to e-learning and L2 teacher preparation.

Chapter 3 will outline the methodological considerations of this research. It first identifies the constructionist epistemology and interpretivist theoretical perspective that underpin the methodology deployed. In the following section, the research questions are revisited along with a description of the qualitative case study approach and an explanation of how this approach governed the selection of the research methods. In addition this chapter explores the method of implementation of the selected research methods. The chapter concludes with a justification of the research procedures and trustworthiness criteria, possible ethical concerns in view of human agency, and potential limitations of the research design.

In Chapter 4 the results of research data analysis will be outlined. There are four main sections in this chapter. The first section displays participants’ demographic data in five separate tables. Each of the remaining three sections focuses on one of the particular themes arising from the research questions incorporated with the framework of Intended, Enacted and Experienced Curriculum. Key findings will be discussed further in Chapter 5, which integrates and compares the existing literature reviewed in Chapter 2. The issues discussed will be drawn from the research questions and the existing literature. It presents conclusions and examines issues raised.
The final chapter will draw conclusions from a summary of the key findings of this study. It will also present possible applications of the findings and provide recommendations for future research.
Chapter 2: LITERATURE REVIEW

The purpose of this chapter is to present a comprehensive and critical review of the existing literature that informs the research questions. This will provide justifications for the findings and contribute to the development of the discussion. As indicated in the introduction chapter, the fundamental objective of this study is to support and enhance pre-service TCSL teachers’ capabilities to effectively integrate and apply e-learning in their teaching, and consequently improve their future TCSL practice. To achieve such an objective, the design of this study focused on exploring the place of e-learning education in a TCSL Master’s program in Taiwan. In depth investigations were conducted to explore the major stakeholders’ (administrators, instructors and students) perception of the role of e-learning through the lens of their intended, enacted and experienced curricula within the program. Hence, to inform this study, this literature review will examine the interplay between four broad conceptual fields: curriculum, e-learning, second language learning, and TCSL teacher preparation.

This chapter is organised into four main sections. The first section will preview existing studies and theories in relation to conceptual frameworks of curriculum. It will begin with a description of previous theories of conventional conceptions of curriculum before introducing the idea of ‘intended, enacted, and experienced curriculum’ proposed by Billett (2006) in *Constituting the Workplace Curriculum* and one of its predecessors – Cuban’s (1993) *Theory of Multiple Curricula*. The key characteristics of these theories will be outlined and the interrelationship between them will be discussed. The second section will present a comprehensive discussion of the term ‘e-learning’. Uncertainty and confusion about the definition of e-learning is common in the literature, therefore, this section will first clarify and establish a clear definition of the term ‘e-learning’ for this research. The discussion in this section will then place particular attention on exploring the two basic components of e-learning naming ‘e-’ (the technology) and the ‘-learning’, then describe the term as a whole and finally identify the role of e-learning in educational sector. The third section will examine the role of e-learning in the field of second language (L2)
learning. In this section, a clarification of L2 learning will be illustrated and the central concept of L2 learning theories will be described before presenting various aspects of e-learning in the field of L2 education. In particular, the discussion about e-learning in L2 education will highlight computer-assisted language learning (CALL) and mobile-assisted language learning (MALL) and present issues involved in these two systems. Some studies with respect to the integration and implementation of e-learning in Chinese as a second language (CSL) learning will be outlined at the end of this section. The last section will introduce three theoretical frameworks that are particularly designed to evaluate and help enhancing pre-service teachers’ e-learning capabilities to successfully use e-learning in their future teaching career.

2.1 Conceptual Frameworks of Curriculum

To better explore the relationship between e-learning training and TCSL Master’s programs in Taiwan, the framework used in this research to form the research questions and construct data collection and analysis draws from the ‘intended, enacted, and experienced curriculum’ proposed by Billett (2006) in Constituting the Workplace Curriculum, which was shaped by Cuban’s (1993) Theory of Multiple Curricula. Although both reflect the essence of curriculum in the education context, these two theories approach “curriculum” from slightly differing angles, which are different again from the conventional conceptualisations of curriculum. To explain the curriculum frameworks used in this research, it is helpful to discuss broad notions of the term ‘curriculum’ before discussing Billett and Cuban’s theories.

2.1.1 Conventional Conceptions of Curriculum

The term curriculum has a comparatively short history in English usage in relation to educational practice. A definition of the word was first seen in the mid-19th century as cited in the Oxford English Dictionary (OEC) (Jackson, 1992). It was not until 1918 that it was first included in a published textbook, Robbitt’s The Curriculum (Null, 2008). Despite this short history in the education field, the term has been variously defined by educators and researchers according to different perceptions and contexts (Clandinin & Connelly, 1992; Lovat & Smith, 2003; Print, 1993). In defining curriculum in a broad sense, studies tended
to draw their definitions from the standard/authoritative dictionary definitions, (e.g. Clandinin & Connelly, 1992; Jackson, 1992; Orlosky & Smith, 1978), and some drew upon a summary of prior definitions existing in relevant literature and documents (e.g. Lovat & Smith, 2003; Print, 1993; Skourdoumbis & Shacklock, 2012). Yet others have defined it based on the elements it comprises.

Early on, as indicated by English dictionaries such the *Oxford English Dictionary (OED)* and the *Webster’s New International Dictionary*, “curriculum” was narrowly defined as a description of a formal course (or courses) of study that specified the subjects to be studied in an educational institute at college level as well as pre-college levels (Jackson, 1992; Orlosky & Smith, 1978). The essential subjects included in this definition were “permanent studies … grammar, reading, rhetoric, logic, mathematics and the greatest books of the Western world” (Lovat & Smith, 2003, p. 8).

In later studies, there was a tendency to define curriculum by drawing upon existing definitions. For example, Jackson (1992) started his discussion of curriculum by citing three definitions found in textbooks covering almost 50 years. Print (1993) composed his definition of curriculum from seven existing definitions. Lovat and Smith (2003) summed up definitions of curriculum that had been used in a range of different contexts by different groups of people through the past six decades (up to the date of publication) and put forward 13 general definition statements. Finally, Skourdoumbis and Shacklock (2012) defined curriculum based on a review of the statement provided by the United Kingdom’s Her Majesty’s Inspector of Schools (HMI) (1985) in addition to four definitions proposed by different scholars.

The following table lists a collection of definition statements in chronological order of publication. Most of the statements listed are based upon summaries of prior definitions or have been cited by other scholars.
<table>
<thead>
<tr>
<th>Scholars</th>
<th>Definitions</th>
</tr>
</thead>
</table>
| Bobbitt (1918)           | 1. “It is the entire range of experiences, both undirected and directed, concerned in unfolding the abilities of the individual.”  
2. “It is the series of consciously directed training experiences that the schools use for completing and perfecting the unfoldment.” (p. 11)                                                                                       |
| Caswell and Campbell (1935) (as cited in Jackson, 1992, p. 4) | “Curriculum is all of the experiences children have under the guidance of teachers”                                                                                                                                                                                                                                                          |
| Kerr (1968) (as cited in Kelly, 2009, p. 12) | Curriculum is “all the learning which is planned and guided by the school, whether it is carried on in groups or individually, inside or outside the school”                                                                                                                                                                                      |
| Oliva (1982) (as cited in Jackson, 1992, p. 5) | Curriculum is “a plan or program for all experiences which the learner encounters under the directions of the school.”                                                                                                                                                                                                                     |
| Cuban (1992)             | Curriculum is “a series of planned events intended for students to learn particular knowledge, skills, and values and organized to be carried out by administrators and teachers” (p. 221)                                                                                                           |
| Print (1993)             | Curriculum “is all the planned learning opportunities offered to learners by the educational institution and the experiences learners encounter when the curriculum is implemented.” (p. 9)                                                                                                               |
| Lovat and Smith (2003)   | As being focused on the contents of the curriculum:  
1. “Curriculum should consist of permanent studies – grammar, reading, rhetoric, logic, mathematics and the greatest books of the Western word” (1936)  
2. “The curriculum should consist entirely of knowledge from the disciplines.” (1962)                                                                                                                        |
|                          | As being guided by the school:  
3. “The curriculum is a sequence of potential experiences that is set up in the school for the purpose of disciplining children and young people in group ways of thinking and acting.” (1957)  
4. “The curriculum is all the experiences a learner has under the guidance of the school.” (1970)  
5. “The curriculum is all of the learning of students which is planned and directed by the school.” (1957)                                                                                   |
As being an educational plan and/or learning experiences:

6. “The curriculum is the syllabus, a course of study or subject” (1971)
7. “The curriculum is a vital complex movement of people and things in a freewheeling setting.” (1973)
8. “The curriculum is all planned learning outcomes or desired consequences of the instructor for which the school is responsible.” (1970)
9. “Curriculum produces plans; instruction puts them into action.” (1965)
10. “Curriculum is the planned learning experiences of students for which the school is responsible.” (1988)
11. “On one hand, curriculum as intention comprises a progressively modifiable plan of areas of learning and growth for an individual or a group of learners focused upon an educational centre, incorporating a set of objectives, a set of learning experiences and suggestions for their organization and techniques for evaluation of learning outcomes. On the other hand, curriculum as reality is what actually happens to the person or persons, arising from a complex network of interactions between people responding to a diverse array of influences, explicit and implicit, human and physical” (Cohen & Harrison, 1982)
12. “Curriculum is the educational experience, the educational journey.” (1975)
13. “Curriculum is a set of discourses: a number of symbolic texts and practices that are representative of particular ideologies and which may be interpreted to produce different meanings. (p. 9)

| Null (2011) | Curriculum is “any document or plan that exists in a school or school system that defines the work of teachers, at least to the extent of identifying the content to be taught to children and the methods to be used in the process” (p. 54) |
| Skourdoumbis and Shacklock (2012) | 1. School curriculum: “is a planned, school-based intervention consisting of statements of aims and outcomes focusing upon what knowledge, skills and concepts are considered significant together with statements regarding teaching, learning and assessment” (p. 12)
2. Whole curriculum: “everything that a school does, intentionally and unintentionally, planned or unplanned, formal and informal, can legitimately be seen as part of its ‘whole curriculum’” (p. 13) |
Although they seem multifaceted, most of the definitions listed above are restatements of existing definitions rather than creations of new ones; although not identical, they have many similarities. The most common meanings seen in the listed definitions could be grouped under one of the following four points:

1. curriculum as an educational plan (or plans) or planned learning opportunities/events,
2. curriculum as a series of planned learning experiences,
3. curriculum as the ‘syllabus’ or syllabus-like documents, and
4. the sense of the whole curriculum.

Of these, the first two points clearly cover the most commonly held meanings among the definitions listed in the table.

First, curriculum as an educational plan (or plans) could also be summarised as follows based on the listed definitions:

a) curriculum is commonly seen in the form of documents or statements (as seen in Null (2011), and Skourdoumbis and Shacklock (2012));

b) curriculum is a plan of learning under the guidance or direction of educational institution, school administrators, or teachers (as seen in Kerr (1968), Oliva (1982), Cuban (1992), Print (1993), Lovat and Smith (2003), Null (2011), and Skourdoumbis and Shacklock (2012));

c) curriculum indicates desired aims and outcomes, and specifies the content of particular knowledge and skills intended to be taught and learned (as seen in Lovat and Smith (2003), Null (2011), and Skourdoumbis and Shacklock (2012)).

Interestingly, despite its comparatively short history as an educational term, the sense of “curriculum as a plan” can be traced back to its ancient Greek meaning of a race-course or running track for athletes to follow and complete (Bobbitt, 2004; Jackson, 1992; Lovat & Smith, 2003).

Second, curriculum as a series of planned learning experiences could be summarised as follows:
a) Curriculum is a sequence of learning/training experiences under the guidance of the school or teachers (as seen in Bobbitt (1918), Caswell and Campbell (1935) and, Lovat and Smith (2003)).

b) Curriculum is the planned learning experiences resulting from implementation of the plan (as seen in Print (1993)).

Third, although less significant, as shown in the table, the curriculum has also been referred to as the ‘syllabus’ (e.g. Lovat & Smith, 2003; Null, 2011; Skourdoumbis & Shacklock, 2012). A syllabus is normally presented as a form of written document used for structuring an outline of a course; it specifies the goals and objective (e.g. scope, expected outcomes), the prerequisites, the contents (e.g. topics, materials such as textbooks or software), the assessment scheme, a schedule, and a bibliography of a course (Kearsley & Lynch, 1996). The syllabus is often confused with or equated to the curriculum (e.g. Kelly, 2009; Print, 1993). Lovat and Smith (2003), however, argued that, being a guideline for a course of study, a syllabus should be seen as a part but not the whole of the curriculum. They assert that it is necessary to make a distinction between syllabus and curriculum, the term ‘curriculum documents’ has been used to stand for a syllabus (Levin, 2008; Lovat & Smith, 2003).

Finally, the notion of whole curriculum, could encapsulate the educational plan as well as the experiences - intentional and unintentional, planned and unplanned, formal and informal, directed and undirected - and it could be carried on in groups or individually, inside or outside the school (Kerr (1968), Skourdoumbis & Shacklock (2012)).

The arguments that consider a curriculum as an educational plan, a sequence of planned learning experiences, or a syllabus (or documents), all fail to account for the ‘real actions’, i.e. how planned teaching and learning processes are actually enacted in the classroom, and how experiences are actually encountered by students as well as teachers (Grundy, 1998, as cited in Lovat and Smith, 2003). For the purpose of this research into the curriculum of a TSCL Master’s program in Taiwan, it is also important to examine the complex nature of curriculum, which is now discussed through the literature.
2.1.1.1 Defining Curriculum Based on Components

The term curriculum has also been defined based on its essential components (Kelly, 2009; Null, 2011; Orlosky & Smith, 1978; Steward, 2009). Some scholars have suggested that a curriculum should be composed of at least two elements: intentions (purpose, or goals) and actions (procedures, or processes) (Black & William (1998), as cited in Levin (2008); Null, 2011). Some subdivided the components of curriculum into three categories. For instance, Orlosky and Smith (1978) revised Dahllöf’s models and proposed three fundamental elements of the curriculum: frame factors, teaching process, and learning outcomes. Orlosky and Smith further split the frame factors into three types: 1) the objectives of teaching, 2) the sequence of content units, and 3) the timeframes needed by different students for learning the content units. The teaching process, it was suggested, involved the methods used and the time spent on different units, and the proposed learning outcomes focused on the students’ achievement and attitudes. Orlosky and Smith’s three components of the curriculum not only included the two essential elements, intentions and actions, but also added learning outcomes as one of the important constituents of a curriculum. However, this proposition failed to mention the reality of what actually happens during the process of curriculum implementation. A later proposition suggested that, on top of the three elements, intentions, actions, and proposed learning outcomes, a curriculum should also include one more element, the actual experiences (or reality) (Kelly, 2009; Steward, 2009).

2.1.1.2 Hidden Curriculum

The notion of a “hidden curriculum”, though not discussed in depth in this research, has been considered by many scholars as an important part of curriculum (e.g. Kelly, 2009; Lovat & Smith, 2003; Print, 1993). The term “hidden curriculum” has been commonly used as distinct from the explicitly planned or official curriculum. In general, it refers to the learning outcomes that result from school education but which are not overtly included in the intentions of curriculum planners or educators (Kelly, 2009; Lovat & Smith, 2003; Print, 1993). Similar arguments, although differently expressed, have been presented in the literature. For example, Skourdoumbis and Shacklock’s (2012) whole curriculum, which
involves school activities that are intentional and unintentional, planned or unplanned, formal and informal, and Cuban’s (1992) *learned curriculum*, which emphasizes that much of the students’ informal and unintended learning “goes far beyond what teachers intend” (Cuban, 1993, p. 184). Both imply a hidden curriculum.

The discussions of the hidden curriculum found in relevant literature focus mostly on the unintended student learning outcomes that occur even under the guidelines of an official curriculum. For instance, Seddon (1983) referred to the hidden curriculum as the learning outcomes that are … generally not explicitly intended because they are not stated by teachers in their oral or written lists of objectives, nor are they included in educational statements of intent such as syllabuses, school policy documents or curriculum projects (as cited in Print, 1993, p. 10).

Kelly (2009) described the hidden curriculum as … those things which pupils learn at school because of the way in which the work of the school is planned and organized, and through the materials provided, but which are not in themselves overtly included in the planning, or sometimes even in the consciousness of those responsible for the school arrangements (p. 10).

Similarly, Lovat and Smith (2003) focused their discussion of the hidden curriculum on the factors that cause unplanned or unintended learning outcomes. From the observations above, one could clearly relate the idea of ‘hidden curriculum’ to Billett’s (2006) ‘experienced curriculum’ and Cuban’s (1993) ‘learned curriculum’. However, it could also be suggested that the hidden curriculum is part of the enacted curriculum and/or taught curriculum as well. In comparison with the summary of curriculum definitions discussed earlier and the broad scope of the essential curriculum components, Cuban’s theory, unlike Billet’s, includes the element of actions, and learning outcomes (both proposed and actual) into its scope.

In summary, curriculum, in a broad sense, could be broadly described as educational plans, or school programs, guided by educational institutions, or school administrators or teachers. It is commonly presented as a form of official document authorised by
government educational departments or school boards. Such an official document indicates purpose, desired goals and anticipated outcomes, specifies the contents expected to be taught and learned, and also suggests teaching procedures such as methods and timeframes. A more comprehensive curriculum should also encompass the actual learning experiences and learning outcomes resulting from the implementations of the plans. Similarly, the sense of the whole curriculum should also be taken into account.

Some important issues have not been discussed in these definitions of curriculum, such as the official impacts and assessment effects on curriculum. Therefore, to enable this study to research the complexities of the curriculum in the TCSL Master’s program in Taiwan, Billett’s (2006) conceptions of curriculum and Cuban’s (1992, 1993) multiple curricula will be discussed in the following sections.

2.1.2 Billett’s Three Conceptions of Curriculum

Besides being derived from prior definitions or defined according to its components, the term curriculum has also been described by scholars in terms of its various conceptions. For instance, in writing about workplace education (vocational education), Billett (2006) divided conceptions of curriculum into three broad categories:

- the ‘intended curriculum’ – what is intended to occur;
- the ‘enacted curriculum’ – what actually happens when the curriculum is enacted;
- and the ‘experienced curriculum’ – what learners experience, construe and learn as a result of its enactment (p. 32).

As for the relationships between these three concepts, Billett states that “it is how the intended curriculum is enacted – what is – that ultimately shapes what learners experience” (Billett, 2006, p. 38).

Although primarily constructed for workplace education practice, Billett’s (2006) workplace curriculum theory was fundamentally informed by the curriculum theories developed for educational institutions, and, therefore, it is equally suitable for common practice in educational settings in general and also useful to frame this research. Consequently, this theory aligns with other theories. For instance, it could be compared to
Tyler’s (1949) four fundamental questions of curriculum rationale proposed in his *Basic Principles of Curriculum and Instruction*:

1. What educational purposes should the school seek to attain?
2. What educational experiences can be provided that are likely to attain these purposes?
3. How can these educational experiences be effectively organized?
4. How can we determine whether these purposes are being attained? (p. 1)

The first question aligns with the intended curriculum, and the second, third and fourth questions could collectively relate to the “experienced curriculum”. Such relations will be further discussed in Billett’s (2006) three conceptions of curriculum. Nevertheless, it is noteworthy that the word “rationale” used in Tyler’s (1949) book conveyed the meaning of “an explanation or exposition of the principles of some opinion, action, hypothesis, phenomenon, or the like” (Jackson, 1992, p. 25). These four questions were proposed primarily to help school administrators and teachers to be able to continually develop effective curricula. Tyler dedicated a chapter to each of these four questions where, “instead of answering the questions, an explanation is given of procedures by which these questions can be answered” (p. 2). His pedagogical focus is on the process by which we reach an understanding of something.

Furthermore, other studies have used the three terms of Billett’s (2006) theory, intended curriculum, enacted curriculum, and experienced curriculum (e.g., Bouck, 2008; Hume & Coll, 2010; Kurz, Elliott, Wehby, & Smithson, 2010; Porter, McMaken, Hwang, & Yang, 2011; Print, 1993; Watters & Diezmann, 2005).

This theory will be a key feature in the way that participants’ responses will be analysed. Therefore, the following discussion will explore these three conceptions of curriculum based mainly on Billett’s arguments and supported by comparable arguments found in relevant literature.

**2.1.2.1 Intended Curriculum**

The term ‘intended curriculum’ in the educational sector, according to Billett’s (2006) description, is comparable to a goal-directed educational plan (e.g. syllabus,
documents, curriculum standards or framework) that specifies “the activities, the goals to be achieved and the means by which progress and attainment can be secured” (p. 34), although it may not always be in the form of written documents. The fundamental purpose of such a design is to effectively direct students to achieve the intended educational or school’s goals. It was also suggested that the intended curriculum is normally influenced and regulated by school authorities and/or “powerful and external forces (e.g. government, religious orders, industry, pressure groups)” (Billett, 2006, p. 34).

Tyler (1949) in his discussion of the first fundamental question: “What educational purposes should the school seek to attain?” explored at length the notion of educational objectives from various points of view, including: learners themselves and their life outside of school; the use of educational and social philosophy; the use of learning psychology; and the use of the statement of objectives to help select learning experiences and guide teaching. The idea of ‘educational objectives’ described in the discussions seems to underpin the ‘goal-directed educational plan’ mentioned in Billett’s (2006) intended curriculum, because as Tyler (1949) argues, “these educational objectives become the criteria by which materials are selected, content is outlined, instructional procedures are developed and tests and examinations are prepared” (p. 3). Tyler emphasises that, for designing a sound educational plan and for its progressive improvement, it is essential to recognize that the goals of an educational program and the educational objectives are aimed at “accomplish[ing] basic educational purposes” (p. 3). In comparison to Billett’s intended curriculum, Tyler’s discussion of educational objectives covers a wider scope as it involves the ‘student factors’ that have not been mentioned in Billett’s intended curriculum, such as the impacts from students’ interests, life situations outside of school, and learning psychology.

Furthermore, although they both mentioned the external forces that influence the curriculum, Billet and Tyler define these forces differently. The external forces on Billett’s (2006) intended curriculum are the government, religious orders, industry or pressure groups, whereas Tyler (1949) addressed the influences from the point of view of subject specialists, such as the Committee of Ten of America, and various other committees, as
well as National Councils of Teachers in different areas (e.g. English, Social Studies, and Mathematics).

The term ‘intended curriculum’ has been found in other studies as well. For example, Print (1993) related the intended curriculum to the written curriculum, and claimed that such an intended curriculum (written documents) provided guidelines for teachers’ performance and expectations relating to learners’ achievement of the specified aims, goals, and objectives. To clarify any ambiguities in the use of the words ‘aim’, ‘goal’ and ‘objective’ in the intended curriculum, Print provided each of the terms with an explicit description. These terms are explained as: “Aims state what is to be hopefully achieved by the curriculum” (p. 122); “goals are more specific, precisely, worded statements of curriculum intent and are derived from aims” (p. 124); and objectives are specific statements that indicate “what students should learn through interaction with curriculum” (p. 124). Print’s intended curriculum is closely aligned with Billett’s (2006) in that they both relate intended curriculum to syllabus, written documents, and teaching guidelines. Similarly, they also equate a syllabus to curriculum documents. However, unlike Billett, Print made no mention of the influence of authority forces, such as school boards or governments.

The term ‘intended curriculum’ has also been equated to the notion of an official curriculum (Bouck, 2008; Cuban, 1992; Kurz et al., 2010). Cuban (1992) proposed that “the intended curriculum is a map of theories, beliefs, and intentions about schooling, teaching, learning, and knowledge” (p. 222), and referred to it as the formal, official curriculum in forms of written frameworks and syllabi that contain the list of courses to be taught and the range of areas to be covered. Inspired by Goodlad (1984), Cuban further maintained that intended curriculum, such as subject matter, skills and values, were primarily determined by the expectations of federal, state, and district policymakers. In other words, the content was influenced by what policymakers expected to be taught and learned.

Billett’s (2006) description of intended curriculum provides a fairly comprehensive explanation as it covers the essential core concepts of curriculum as well as addressing the
external forces from authorities. However, it could be argued that a more inclusive intended curriculum should involve the ‘students’ factors’ as suggested in Tyler’s (1949) rationale.

2.1.2.2 Enacted Curriculum

The concept of enacted curriculum could be seen as a practical, action-related process for it represents “what actually happens when the intended curriculum is enacted” (Billett, 2006, p. 32). In view of the implementation of this practice in real world actions, there seem to be two specific foci: teacher-centred (how teachers deliver the intended curriculum), and student-centred (what students receive through such a curriculum). For example, drawing upon Cuban (1992) and Nolet and McLaughlin (2000), Bouck (2008) interpreted enacted curriculum as an implementation or a transactional process performed by teachers based on their decisions and interpretation of the curriculum. Yet, in Porter et al.’s (2011) study, according to the guidelines indicated in the Common Core State Standard of the United States, the enacted curriculum explicitly focuses on “the content of the intended curriculum” (p. 103) to be learned by students, rather than on how that content is expected to be taught by teachers.

Billett (2006) proposed that both teachers and students engage with the enacted curriculum. The central idea of such a conceptual perspective is, according to Billet, to help students to improve their learning experiences and effectively acquire knowledge and skills, and to possibly achieve the expected goals through teachers’ implementation of the intended curriculum. However, what actually occurs may not align with what was intended. Billett suggested that the interpretation and transmitting of the intended curriculum are influenced by the instructors’ personal experiences, values, preferences and competence. The enactment has no guarantee of fidelity to the intended curriculum. Similarly, the receiving of the intended curriculum could be determined by students’ enactment (as in the ways they respond or act) and learning experiences. In other words, it is suggested that there exist gaps in the alignment between what is intended to be delivered or utilised, and what is actually performed by teachers, as well as what is actually received or experienced by students (Kurz et al., 2010; Porter et al., 2011).
2.1.2.3 Experienced Curriculum

In contrast to the enacted curriculum where both the teacher and the student were expected to be involved, the experienced curriculum seems to commonly be related to students (or learners) only. This is exemplified in two studies: Hume and Coll’s (2010) study of the alignment between the New Zealand national science curricula (addressed as intended curricula) and the student-experienced science curricula (or operational science curricula), and Watters and Diezmann’s (2005) study of the contrast between the intended curriculum (focused mainly on university goals) and experienced curriculum (focused mainly on assessment and student learning experiences). Both studies found that the experienced curriculum was closely connected to students’ learning results.

Correspondingly, Billett’s (2006) discussion of experienced curriculum focused exclusively on learners’ (or student-workers’) learning experiences. In his discussion on the workplace curriculum as experienced by workers, Billett frequently used the word ‘individual’ to stand for ‘learner’ or ‘worker’, and proposed that individuals perform as active rather than passive recipients in learning practice. Individuals make their decisions based on their “goals, identities, and subjectivities” (p. 44), and acquire their learning experiences through interaction with learning environments (e.g. education institutions or workplaces). It was suggested that such experiences were premised on how individuals receive the intended curriculum and participate in the enacted curriculum. Furthermore, parallel to the relations between the intended curriculum and the enacted curriculum, Billett proposed that there is no guarantee that what is enacted will be experienced. In other words, what instructors teach cannot be equated to what students learn.

Additionally Billett (2006) emphasised that the experience of curriculum plays an influential role in the intended curriculum decision-making and the enacted curriculum performance. This argument conforms to questions two and three of Tyler’s (1949) four fundamental questions. Question two asks, “What educational experiences can be provided that are likely to attain these purposes?” (p. 2) and its revision: “How can learning experiences be selected which are likely to be useful in attaining these objectives?” (p. 63). These questions imply that learning experiences (or educational experiences) can become
potential influences on the intentions of an education program. The term ‘learning experiences’ seems to be used interchangeably with ‘educational experiences’ in Tyler’s book, and it is referred to as “the interaction between the learner and the external conditions in the environment to which he can react” (p. 63). Tyler emphasised that such interaction is exclusively grounded in students’ actions in learning; “it is what he does that he learns, not what the teacher does” (p. 63). In addition, learning experiences could also be an important factor for constructing an effective enacted curriculum as suggested in Tyler’s Question 3: “How can these educational experiences be effectively organized?” (p. 1) and its further extension: “How can learning experiences be organized for effective instruction?” (p. 83).

One condition covered in Tyler’s (1949) rationale was not discussed in Billett’s (2006) three conceptions of curriculum is the evaluation of learning experiences. The fourth question of Tyler’s rationale: “How can we determine whether these purposes are being attained? (p. 1), and its revision: “How can the effectiveness of learning experiences be evaluated?” (p. 104) denote the importance of the evaluation of learning experiences in the appraisal of the success of curriculum implementation. Tyler considered such evaluation not only as an indicator of curriculum implementation, but also as “an important operation in curriculum development” (p. 104). He argued that the main functions of the use of evaluation procedures are to estimate the students’ changes (or progress) resulting from the implementation of the curriculum plans, to identify the actual achievement of the curriculum objectives, and to recognize the virtues and defects of the curriculum. Such evaluation results provide valuable indications for further effective curriculum improvement. Tyler further asserted that more functions could be provided by a comprehensive evaluation program, such as clarifying undefined educational objectives in a curriculum program, serving as a guideline for individuals’ particular progress in the educational program, and being “one of the important ways of providing information about the success of the school to the school’s clientele” (p. 125).

In summary, the intended curriculum could be referred to as a goal-directed learning plan, which is designed primarily for guiding students to achieve the intended educational goals. These goals are regulated by district government or school authorities, but are impacted upon by external forces (e.g. religious orders, industry, pressure groups), subject
specialists (e.g. national councils of teachers in different areas), and student factors (e.g. students’ interests, life situations outside of school, and learning psychology). The enacted curriculum incorporates the teacher’s implementation and students’ reception of the transmitted intended curriculum. The experienced curriculum has conventionally been focused mostly on the learner’s learning experiences. These experiences are premised on the learners’ reception of the intended curriculum and enactments of the enacted curriculum. It is suggested that such a curriculum (the experienced curriculum) has the potential to influence the intended and enacted curricula. One key point that seems to be agreed among the researchers presented above is the existence of the gaps in the alignment between and among these three conceptions of curriculum.

Billett’s (2006) three conceptions of curriculum seemed to exclusively relate the intended curriculum to the decision makers, enacted curriculum to the interaction between the teachers and the learners, and the experienced curriculum to the learners’ learning experienced. However, it is suspected that a more complex relationship exists between the major stakeholders of an educational sector and these three conceptions of curriculum. This is illustrated by two studies in respect to different types of curriculum proposed by Cuban (1992). These studies took place prior to Billett’s proposition and will be presented in the next section to provide different interpretations of curriculum.

2.1.3 Cuban’s Multiple Curricula

Parallel to Billett’s (2006) approach, Cuban (1992) described curriculum in terms of ‘type’. Cuban differentiated curriculum into three broad types: the intended curriculum, the taught curriculum, and the learned curriculum. These three curricula types are generally parallel to Billett’s three conceptions of curriculum in the way that both theories include the intended curriculum, and Cuban’s taught and learned curricula are to a certain extent similar to Billett’s enacted and experienced curriculum. Although seeming comparable, there are minor differences between these two theories. For example, unlike Billett’s enacted curriculum, which involves both teachers and students, Cuban’s taught curriculum focuses exclusively on the teachers’ enactment of the intended curriculum. He suggested that different names such as “implicit, delivered, or operational curriculum” (p. 222) could
sometimes be used as synonyms for the taught curriculum, and described it as “what teachers do and use to present content, ideas, skills and attitudes” (p. 222). Billett’s experienced curriculum focuses on learners’ learning experiences that are to a certain degree swayed by learners’ personal factors such as goals, identities and subjectivities. Cuban focused his discussion about the learned curriculum on the “unintended student learning” (p. 223), rather than the conventional learned curriculum that aimed to determine what exactly students have learned, by testing and measuring students’ learning results. Cuban contended that the learned curriculum includes the unintended lessons that might result from the covert yet insistent negotiations between students and teachers over such issues as “the rules, the amount of work, the level of performance, and acceptable classroom behaviour” (p. 223).

In the article *The lure of curricular reform and its pitiful history*, Cuban (1993) further proposed the idea of *multiple curricula* and categorised curricula into four types: official curriculum, taught curriculum, learned curriculum, and tested curriculum. The first three of Cuban’s propositions are not much different from his earlier (1992) three-type curricula, or indeed from Billett’s (2006) three conceptions of curriculum (except that the term ‘intended curriculum’, used in these two previous theories, has been replaced by the term ‘official curriculum’). However, the fourth of Cuban’s *multiple curricula*, the ‘tested curriculum’, did not appear in the previous two theories and seems to be related to the evaluation of learning experiences mentioned in Tyler’s rationale.

Cuban’s (1993) official curriculum was defined as what “state and district officials set forth in curricular frameworks and courses of study” (p. 183). The government not only stipulates the frameworks for teaching but also provides the state-approved textbooks and state-mandated tests. The official curriculum makers expect teachers to teach what they provide and assume students will learn from it accordingly. The taught curriculum is what is actually delivered by teachers resulting from teachers’ personal knowledge experiences, and their “attitudes toward the students they face each day” (p. 182).

According to the descriptions provided above, it is evident that Cuban’s four types of curricula centre on the ‘operators’ of the curriculum. For example, the official curriculum is determined by the official authorities, the taught curriculum is enacted by the teachers, the
learned curriculum is performed by students, and the tested curriculum is implemented by the evaluators. However, rather than providing explicit descriptions of each type of curriculum, Cuban (1993) emphasised the existence of four curricula, not just one single curriculum, and elucidated how these four types of curricula overlap and differ from each other.

Although the taught curriculum overlaps to a certain degree with the official curriculum such as in the coverage of specified areas and topics and the use of officially appointed texts, it could be different from the official curriculum, as well as from teacher to teacher. Differences could arise as a result of teachers’ personal knowledge, experiences or their “attitudes toward the students they face each day” (Cuban, 1993, p. 182). Similarly, the learned curriculum overlaps with the official and taught curricula. However, it was suggested, in both Cuban’s 1992 and 1993 studies, that besides formal classroom learning students’ informal learning could go far beyond official and teachers’ expectations. Furthermore, Cuban (1993) proposed that the tested curriculum, for example, through the results of paper-and-pencil tests, reflects a portion of the official, taught, and learned curricula, but it reveals only a limited part of “what is intended by policy makers, taught by teachers, and learned by students” (p. 184).

There are ongoing discussions around the inconsistency of Cuban’s (1993) four types of curricula. Kurz et al. (2010) and Porter et al. (2011) both argue that that gaps exist between what is intended by the official curriculum designers, what is enacted by teachers, and what is experienced by the students. In addition, Billett (2006) proposed that there is no guarantee in the alignment of the three curriculum conceptions.

This research adopts the notion of Billett’s three types of curriculum: the intended curriculum, enacted curriculum, and experienced curriculum, and regenerates the meaning of these three different types of curriculum by synthesizing the theories proposed in relevant literature. This research, therefore, would argue that each of the major stakeholders of an educational setting, such as the administrators, the instructors and the students could have their own intended, enacted and experienced curricula that are related, overlapping, yet different from each other.
2.2 E-learning

E-learning has been one of the most discussed issues in the educational field in modern times (Jenkins et al., 2011). However, there are inconsistences and misunderstandings around the central concepts and fundamental meanings of e-learning (Carliner, 2008). In general, the term may be perceived as using computer or online technologies in teaching and learning, but few are able to explicitly and confidently provide a definition. For example, when I was interviewing some teachers and students in the TCSL (Teaching Chinese as a Second Language) Master’s program in Taiwan in the summer of 2011 about the subject of e-learning in foreign language education, the most frequent questions asked before the interview were “What do you mean by e-learning?” or “Could you please give me your definition of e-learning before we start?” Additionally, more often than not, they wanted to be certain whether the use of PowerPoint, use of media and video, or Course Management Systems (CMS), etc. in teaching activities could be considered e-learning activities. Therefore, it is important and necessary at the beginning to establish a clear definition that will stand throughout this research.

Since the term ‘e-learning’ was introduced into the field of education in the mid-1990s, there has been no broad consensus about the definition of this term (Bowles, 2004; Haythornthwaite & Andrews, 2011; Littlejohn & Pegler, 2007; Mason & Rennie, 2006; Nicholason, 2007; Yuan, 2007). According to much of the literature reviewed in this study, the cause of such uncertainty and confusion about the definition of e-learning can be put down to three main issues: the myriad different terms that have been used to refer to its comparable approaches; the divergence in the focuses of its technology content; and the different perspectives in its educational applications among researchers and in publications.

Terminology is one of the main causes of confusion. From the existing publications, it is easy to find a myriad of different names interchangeably. At times the definition has referred to the learning approaches or its technology focus, for example, CBT (Computer-Based Training), IBT (Internet-Based Training), WBT (Web-Based Training), or online training have been equivalent to or synonymous with e-learning (Mason & Rennie, 2006). Terms such as computer conferencing, telelearning, online learning or web-based learning have also been used to refer to the learning practice that is parallel to e-learning of a sort
The most recently used term found in published literature is TEL (technology enhanced learning) which also refers to learning and teaching activities that are directly assisted by any online resources and systems (Jenkins et al., 2011). On the other hand, some equivalent terms, named according to their learning context, for example distance learning, classroom-based online learning, and self-access learning, were also considered to be within the same scope of e-learning (Yuan, 2007). More examples, such as virtual classroom and asynchronous learning have also at times been used to refer to learning practices parallel to e-learning (Mason & Rennie, 2006).

Although e-learning was commonly referred to as technology-facilitated (or enhanced) teaching and learning (Jenkins et al., 2011; Mason & Rennie, 2006), it has been widely agreed among researchers that the term ‘e-learning’ did not appear until the launch of the World Wide Web in the 1990s (Bowles, 2004; Garrison, 2011; Mason & Rennie, 2006). Some definitions centred on a technology focus such as Internet technologies and online facility (Garrison, 2011; Garrison & Anderson, 2003; Jenkins et al., 2011), while others covered a broader range by including electronic and information communication technologies (ICT) in all their forms (Andrews & Haythornthwaite, 2007; Bowles, 2004; Mason & Rennie, 2006; QAA, 2008). The term ICT is often contested and there is an inconsistency in determining what sort of electronic, online technologies or ICTs should be included in e-learning. For example, it is generally agreed that using electronic means such as radio or television to transmit teaching and learning content should not be included under the definition of e-learning. The problem of coming to an agreed definition of e-learning is exacerbated by the rapid and constant developments in electronic and web technologies (such as mobile computing, podcasting, and Web 2.0 – all unavailable to earlier researchers) and to their use in educational settings (Garrison, 2011; Jenkins et al., 2011).

Part of the reason for the diversity of definitions is the number of different perspectives of its educational applications among researchers. When the term e-learning was first used, it only referred to the teaching and learning activities that were taking place online (Garrison & Anderson, 2003). However, more recently, the range of its application has been expanded to include all forms of technology-facilitated (enhanced) teaching and
learning activities that are either offline, online, or a blend of face to face and online interaction, (Andrews & Haythornthwaite, 2007; Bowles, 2004; Mason & Rennie, 2006). Historically, e-learning has also commonly been related to flexible learning and distance education (see for example Andrews & Haythornthwaite, 2007; Bowles, 2004; Garrison & Anderson, 2003; Mason & Rennie, 2006)). However, not all flexible and distance learning could be considered to be e-learning. For example, distance education via correspondence may not involve any components of e-learning.

After considering such a diverse range of definitions in the literature, for the purpose of this study, the term e-learning will refer to the learning activities that are facilitated by both computer-based and web-based multimedia technologies, which offer synchronous, asynchronous, or digital collaborative activities that can take place offline, online, or a blend of both, via electronic and networked ICTs. The following discussion will clarify even further and discuss the both elements of this term: ‘e’ and ‘learning’. Drawing on Andrews and Haythornthwaite’s (2007) format, the next section explores the meaning of these two elements, separately, then the term as a whole to define the role of e-learning in the education sector.

2.2.1 ‘E’ in E-learning

Thus far, it has been shown that in the literature e-learning has being defined as teaching and learning that has been closely related to computer-based and web-based electronic communication technology. The ‘e’ in the term ‘e-learning’ conventionally stands for the electronic-associated technologies used for supporting and enhancing e-learning practice. The word ‘technology’, based on its Greek origin technologia: tekhnē (skill, art, or craft) + logia (study or knowledge), has been historically defined as a systematic study or approach to an art, skill, or craft (Allen, 2007; Garrison, 2011; Garrison & Anderson, 2003; Stevenson & Waite, 2011). Nowadays, it conveys different meanings depending on the specific fields it is attached to, for example, medical technology, educational technology, information technology, or electronic technology, etc. The word ‘technology’ discussed in e-learning in this research refers to the educational context and, therefore, is termed educational technology, or more specifically, instructional technology.
used particularly for the purpose of assisting and enhancing teaching and learning practice (Garrison, 2011; Garrison & Anderson, 2003; Nanjappa & Grant, 2003). Garrison and Anderson (2003) defined educational technologies as “those tools used in formal educational practice to disseminate, illustrate, communicate, or immerse learners and teachers in activities purposively designed to induce learning” (p. 34). Before outlining the e-learning literature supporting this research, it is important to discuss the historical context of e-learning.

2.2.1.1 Brief History of Educational Technologies

Historically, different types of technologies have been used to assist teaching and learning practice. For instance, mass print technologies played the major role in transmitting knowledge via texts and graphics for centuries (Harasim, 2012). Then, other electronic communication devices such as radio and movies were invented in the late 19th century, followed by television, audio and video tapes in the early 20th century, and all were used in the decades that followed as educational tools for their ability to extend the teaching and learning experience by transmitting sounds and vivid images in addition to texts and graphics (Andrews & Haythornthwaite, 2007; Garrett, 2009b). When computer technology came into use as an instructional tool in the educational field, it comprised all those functions that were being provided by traditional print and electronic devices such as transmitting texts and graphics or capturing, recording, storing and transmitting voices and images (Andrews & Haythornthwaite, 2007; Nanjappa & Grant, 2003). The field of educational technology expanded even more significantly with the rapid evolution of communication technologies, such as the digital network technology introduced in the mid-1980s and the World Wide Web in the 1990s. The convergence of computer and Internet technologies has expanded our ability to interact with and access information and knowledge on a global scale. Furthermore, the advent of wireless and mobile technologies in the late 1990s, different from fixed-desktop computer and fixed-line network facilities, has created a much more flexible learning environment that has made it possible to free learning from the constraints of time, space and distance and has moved education into a
2.2.1.2 Three Major Types of E-Learning Technologies

E-learning technologies have been described in many different ways from different perspectives. For example, it has been described in the research in terms of: the concentration on electronic devices or on software programs: computer-based and web-based technologies; and web-based and/or networked technologies. For example, Garrison and Anderson (2003) considered e-learning technologies as distance education technology and classified them under one of five generations based on their use of electronic devices. The first generation in this revolution of e-learning technologies was the use of e-mail and telephone, followed by the CD-ROM or DVD, and then more advanced telecommunication technology such as audio, video, or computer-mediated conferencing. The fourth generation involved the initial stages of using WebCT (Course Tool), Blackboard, or Lotus Notes, the tools that merge web-based resources and the technologies used in the first three generations. The fifth involved “artificial intelligence to the Web” or building “semantic meaning into the Web (p. 39). Web-based technologies, therefore, were proposed as the central elements of the ‘e’ in e-learning in the sense of information transmission and communication. Bowles (2004), on the other hand, categorised e-learning technologies into three major activity areas based on software: content creation and management, learning management, and learning activity.

Andrews and Haythornthwaite (2007), taking computer-related and web-based technologies into account, broadly grouped e-learning technologies into three main categories: computer hardware, computer software, and networking infrastructures. The authors submitted that these components function collaboratively in that hardware processes an operating system to run purpose-built toolkits (software), which is then transmitted via networking infrastructures to create virtual learning environments called Collaborative Virtual Environments (CVEs).

Still other studies focused their research of e-learning technologies exclusively on the web-related technologies. For instance, Garrison (2011) looked at e-learning technologies
as instructional technologies, focusing his inquiry on Web 2.0 (e.g., course management systems (CMS), blogs, wikis), social media (e.g., Twitter, Facebook), and mobile learning (e.g., cells, pads, laptops). Mason and Rennie (2006) centred their discussion of e-learning technologies on three types of web-based technologies: broadband, mobile technologies and podcasting. In addition, Gillani (2003) considered the Web as an “educational reform tool” (p. 9) and described it as having four major features namely: content presentation, interactive communication and collaboration, research, and production. Such a tool has the potential to enable teachers to enhance meaningful learning via flexible inquiry and project-based problem-solving tools provided by the Web.

In this review, based on the synthesis of the presented definitions, historical background and the published discussions, the ‘e’, the technology component of e-learning, is divided into three broad categories, namely, computer-based technologies, web-based technologies, and mobile technologies. The following discussion presents these three categories chronologically in terms of their related electronic devices, software programs, and the impacts on the evolution of e-learning practices, and seeks to explore the relationships between these three categories.

2.2.1.2.1 Computer-Based Technologies (CBT)

The computer was introduced in the 1940s and became accessible for common use as a form of desktop personal computer (PC) in the early 1980s. Ever since then, computer technology has been used as an important aid for educational purposes. For instance, it has been referred to as an instructional tool for its support of teaching and learning with its massive capacity for storing, manipulating, and transmitting information (Andrews & Haythornthwaite, 2007; Garrison & Anderson, 2003; Nanjappa & Grant, 2003). Given that the computer has been and is the most direct means of accessing e-learning, it is necessary to offer a brief description of the two essential components of the computer, the hardware and software. Computer hardware transforms analogue signals into digital messages and runs operating systems, such as Windows, Linux, or MacOS, that provide the fundamental architecture of computing. Software on the other hand, provides instructions that direct the computer to encode, decode, generate and/or store input data. The information generated
can be presented as well as transmitted in textual, visual or audio modes (Andrews & Haythornthwaite, 2007). Specific purpose software packages, such as the word processor, spreadsheet, database, course management system, and many others, have been widely used in formal education settings in recent decades (Andrews & Haythornthwaite, 2007; Nanjappa & Grant, 2003).

Before the advent of the Web, e-learning was commonly viewed as Computer-Assisted Learning (CAL), Computer-Assisted Instruction (CAI), or IT Enhanced Learning, and computer-based technologies were the core of the technology applications in this field (e.g. Andrews & Haythornthwaite, 2007; Harasim, 2012; Nicholoson, 2007; Yuan, 2007). At this stage, information transmission and interaction was a one-way process between the computer and the users (e.g. designers, instructors, or learners) and the connections among the users were indirect and asynchronous. In other words, when people were using computers for assisting learning practice, they interacted with each other indirectly via the computer, receiving no immediate feedback from real people (Harasim, 2012) because there were as yet no links between computers.

2.2.1.2.2 Web-Based Technologies (WBT)

The Web (also called the World Wide Web (WWW) or the Internet) first came into use in the field of e-learning in the mid-1990s. The introduction of the Internet was viewed as an educational reform tool that converged with pre-existing computer technologies to, not only provide a computer-mediated flexible multimedia communication network (that resolved the issue of the missing ‘link’ in the computer era), but also to support collaborative learning environments and advance online learning (Bowles, 2004; Garrison & Anderson, 2003; Harasim, 2012). Accordingly, web technologies were seen as encompassing the Web and the pre-mobile era IT technologies.

The evolution of Web hardware centred mainly on the telecommunication facilities used for accessing the Internet. It started with early phone-line dial-up modems, followed by fixed-line broadband, flexible wireless broadband, and finally the most recent mobile broadband. In the e-learning context, facilities that gave access to computer networks and the Internet were collectively hailed as an instructional delivery medium that enabled the
users, such as educators and learners, to effectively present, share, search, and obtain knowledge in various multimedia formats such as texts, graphics, videos, audios, animations (Garrison & Anderson, 2003; Mason & Rennie, 2006). In fact, Web 2.0 associated programs, which provide effective and easy-to-use tools for creating a user-generated collaborative online social community, have been acknowledged as the most recognised tools used on the Web since the inception of Web 2.0 in the early 2000’s (Garrison, 2011; Harasim, 2012). Popular Web 2.0 tools, for example, course management systems (CMS), blogs, wikis, and Facebook, support e-learning by offering alternative ways for designing and managing, providing online discussion forums and online conferencing, creating collaborative learning environments, and building up social networks for educators as well as learners (Bowles, 2004; Garrison, 2011; Jenkins et al., 2011; Mason & Rennie, 2006).

Web-based technologies that merge the Web and computer-based technologies have promoted e-learning from IT (information technology) enhanced learning to ICT (information and communication technology) enhanced learning. At this stage, the information communications that once were restricted to being one-way and asynchronous processes have improved by becoming multi-directional and synchronous. With the help of web technologies, the ways of communicating information have expanded from a one-way connection between an individual and a computer to a global, multi-directional network that connects us to one another, to other groups and to a wide range of networked online learning environments. In the early Web era, e-learning was closely related to distance learning because it provided advanced multi-way synchronous communications to enable educators and students at a distance to participate in real-time events, (e.g. via online video-conferencing) without being constrained by physical distance (Garrison & Anderson, 2003; Mason & Rennie, 2006). Furthermore, it was suggested by promoters that the flexible inquiry and problem solving tools supported by web-based technologies provided educators opportunities to develop educational settings and, therefore, advance meaningful learning (e.g. Garrison & Anderson, 2003).
2.2.1.2.3 Mobile Technologies

Mobile technology is a collective term that comprises a wide range of portable electronic communication devices such as wireless laptops, tablet PCs (iPad), palmtops (or Personal Digital Assistants (PDAs), third generation (3G) mobile phones (or smart phones), and media players (e.g. MP4 players, iPod). These advanced devices, on top of adopting many functions performed by fixed desktop computers, (e.g. capturing, storing and retrieving text, sound and images), provide extended and increased mobility and multimedia capabilities in accessing information globally via the Web (Andrews & Haythornthwaite, 2007; Bowles, 2004). In addition, podcasting (online radio and television, or broadcasting online) is one other new feature that can be performed by mobile devices such as 3G mobile phones and PDAs (Andrews & Haythornthwaite, 2007; Mason & Rennie, 2006).

In e-learning, the continuing development of mobile technologies works hand-in-hand with web-based technologies to provide ever-expanding flexibility and mobility in accessing information and exchanging and building up knowledge to make learning free from the constraints of time, space and distance (Andrews & Haythornthwaite, 2007). Some scholars, such as Garrison (2011), pointed out that mobile technologies were relatively new in higher education. However, a growing interest in and preference for the use of mobile technologies for educational purposes is increasingly evident. For example, mobile computing was reported to be one of the most popular e-learning tools used in UK higher education institutions in a 2008 survey of the development of technology enhanced learning (Jenkins et al., 2011). A survey of the literature also shows a growing tendency to call the use of mobile technologies for educational purpose ‘mobile learning’ or ‘m-learning’, so as to distinguish it from the conventional terminology of e-learning (Garrison, 2011; Mason & Rennie, 2006; Rogers, 2011; Sharples et al., 2007)

2.2.1.3 Potential Problems

Much of the above literature suggests that e-learning technologies have strong potential to revolutionize education practice, despite the barriers in costs, facilities and technical obstacles mentioned by Andrews and Haythornthwaite (2007). Nevertheless,
questions remain as to whether these e-tools are suitable for supporting academic communications and discourses, how (and to what extent) these e-tools can be effectively integrated into educational experience, and what the true values of such integration are in formal educational applications (Garrison, 2011). This is also a key question related to my research – are contemporary e-technologies really beneficial for supporting current TCSL in practice in Taiwan?

It is evident that the e-learning technologies discussed in this review were not designed exclusively for conventional educational purposes or e-learning in the first instance. Many of these technologies are used more often by teachers and students for daily life purposes, such as online entertainment (video games, music, TV programs, movies, etc.), browsing news sites, reading e-novels, shopping, or making reservations. Furthermore, although online social networking and mobile communication are becoming more and more popular among a younger generation who are known as digital natives (Bennett, Maton & Kervin, 2008) there is still a belief that these tools are better for personal communication or virtual social activities than for serious academic discourse (Garrison, 2011; Lafford, 2009). For example, at this stage Facebook, Twitter or blogs are used more commonly for posting personal profiles, meeting and interacting with friends, than for teaching and learning practice. Also mobile devices have reportedly proved to be more troublesome than helpful as students are easily lost in surfing online and doing social networking during class (Garrison, 2011).

2.2.1.4 Summary

In summary, the ‘e-’ in e-learning stands for modern educational technologies used for supporting and enhancing e-learning practice. The evolution in mass educational technologies can be traced from the earliest mass print era, right up to the sequential development of simple electronic communication devices, computer technologies, web-based technologies and the newest invention of mobile technologies. A review of the research exemplifies that there is a variety of descriptions of e-learning technologies resulting from a variety of different perspectives on the definition and role of e-learning. This review broadly divides e-learning technologies into three main categories, namely:
computer-based technologies, web-based technologies, and mobile technologies, and presents them chronologically. The computer was the earliest invention of the three and was used as an instructional tool that supported teaching and learning with its massive capacity for information sorting, manipulating and transmitting. Before the advent of the Web, we lacked a direct link between computers and between users. The information communication and interaction in e-learning were one-way processes, asynchronous and indirect; people interacted with machines but not with real people. The invention of the Web provided the link that allowed information communication and interaction to become multi–directional and synchronous and this made possible a global collaborative e-learning environment. The modern mobile communication devices, such as wireless laptops, tablet PCs, palmtops, 3G mobile phones, and media players have the capabilities of performing many of the computer’s functions, and providing extended mobility in accessing global information resources, and they are also able to process some new features, for example, podcasting. Because mobile technologies are such a powerful information communication tool, a growing interest in and preference for their use for educational purposes has been evident in recent surveys.

It seems that e-learning technologies possess great potential to reform conventional education settings and practice, but several questions remain because these technologies were not invented more so for everyday use rather than educational purposes. Therefore, for the successful integration of e-technologies into the education field, a sound pedagogical scheme as well as a learning strategy are considered to be crucial in order to select proper tools from existing and a myriad of new e-technologies and to competently integrate these tools into educational practice (Garrison, 2011; Mason & Rennie, 2006). Such a sound pedagogical scheme and learning strategy are expected to be underpinned by a comprehensive understanding of the role of learning theory in e-learning.

2.2.2 ‘Learning’ in E-learning

Much of the literature presented above suggests that e-technologies, such as the computer, the Web and the mobile device, have reshaped and opened up new ways of processing in learning with the help of the technological innovations in information
transformation, communication and interaction. However, there is more to e-learning than just technology; in other words, ‘using technologies for learning’ does not fully encapsulate e-learning (Andrews & Haythornthwaite, 2007; Garrison, 2011; Haythornthwaite & Andrews, 2011). Therefore, as the impact of e-technologies in e-learning has become a focus of attention, a thorough understanding of learning, in terms of its nature and related theories, is also necessary and important for optimizing e-learning application. Furthermore, it is also important to assess whether existing learning theories are suitable and adequate for e-learning application, or whether alternative theories may be required.

In general, the literature on learning related to e-learning theories suggests that the essence of human learning involves a series of activities, knowledge acquisition and transformation, as well as information communication and interaction (e.g. Driscoll, 2005; Garrison & Anderson, 2003; Mason & Rennie, 2006; Sharples et al., 2007). Human learning occurs not only within and between individuals but also within and between the communities, societies and environments that the individuals are related to (Haythornthwaite & Andrews, 2011). Learning has been described as a basic human activity, a lifelong activity, and a social activity. Learning, a basic human activity, can take place anywhere anytime, and it can be intentional or incidental, formal or informal, in school or out of school, at work, or in the community (Driscoll, 2005; Mason & Rennie, 2006). This overlaps with the notion of learning as a lifelong experience, from conception to extinction. The knowledge and skills learned in the earlier stages can be resumed by learners as they build a bank of knowledges, as well as more difficult procedures from basic skills (Driscoll, 2005; Sharples et al., 2007; Smith, 2009). Finally, learning is also considered a social activity for the reason that the fundamentals of learning, such as knowledge acquisition and transformation, and information communication and interaction. Such learnings occur not only within and between individuals but also within the community and society (Bowles, 2004). Haythornthwaite and Andrews (2011) also agreed that knowledge (or “meaning” as they called it) is generated and created via “the social interaction of individuals” (p. 31), and people not only learn from the social environment but also contribute what they have learned back to the environment. Therefore, learning is a strongly social activity.
Learning as knowledge acquisition and transformation, involves neural activities, perception readjustment, and a constant change in performance. Garrison and Anderson (2003) argue that the process of knowledge acquisition is as follows: information or messages are received from the environment by individuals, then analysed and converted via neural activities into knowledge; the newly formed information is merged and reorganised with earlier learned knowledge so as to regulate thinking and memory, and operate problem-solving mechanisms. However, knowledge acquisition and transformation are not only individual events but can also occur at a social and political level. Haythornthwaite and Andrews (2011) proposed a concise three-state model of knowledge that sees knowledge as first being “transformed by learning acts”, “into a new state of knowledge”, and finally it “operate[es] again at individual, social and political levels” (p. 43). They also submit that learning activates perception readjustment or “changing in understanding” (p. 31). The results of learning are observed in the constant change in human performances or probable performances such as in behaviour, language usage, problem solving, productions (of literature or artefacts), and interaction with others (Driscoll, 2005; Haythornthwaite & Andrews, 2011).

Finally, learning behaviour also involves information communication and interaction. Garrison and Anderson (2003) proposed that communication is the core of all forms of educational interaction. Bowles (2004) suggested that learning is about human interaction that people use for information sharing and knowledge transmission between each other and their respective environments. Driscoll (2005) also mentioned that the “learner’s experience and interaction with the world” (p. 9) should account for one part of learning performance.

Hence, learning could be seen as a series of human activities that involve knowledge acquisition and transformation as well as communication and interaction, in a lifelong and socially related process. The learners learn by converting new information into personal knowledge and skills via the process of merging it with prior knowledge and experience so that they develop or create new knowledge. The results of learning are detected by its outcome as the constant change in human performances. Furthermore, the literature submits that communication and interaction are at the core of learning activities in general.
The ‘learning’ discussed in this section has been specifically confined to the second element of ‘e-learning’, a new phenomenon arising in the late 20th century. In an attempt to find a more lucid sense of the ‘learning’ in e-learning, the following review first describes the term ‘learning theory’ in a broad sense, then examines some major conventional learning theories of the 20th century and their probable implications in e-learning, followed by a newly introduced framework proposed by Haythornthwaite and Andrews (2011).

From a psychological point of view, Driscoll (2007) defined learning theory as a set of rules (laws or principles as mentioned in the definition) that describe the learning process; it involves observation of the changes in human performance and exploration of what the causes of the changes might be in terms of psychological entities. The author proposed three essential components for constructing learning theories: the results (theoretical exploration of the changes), the means (possible process of the results), and the input (the causes of the process, such as resources or experiences). Haythornthwaite and Andrews (2011) put forward the idea that “learning theory provides an understanding of what it means to learn, and how learning can be seen by others to have taken place” (p. 28) in the areas of individuals, technology and society. In addition, numerous theories have been developed for exploring and explaining learning based on different perspectives throughout the history of education. For example, the theories of objectivism, pragmatism, and interpretivism were based on the epistemological traditions, and Ebbinghaus’s *Principle of association*, Thorndike’s *Law of effect*, or Gestalt’s *Insightful learning* were related to the experimental approaches (Driscoll, 2005).

### 2.2.2.1 Three Dominant Learning Theories in the 20th Century

The three dominant frameworks for learning theories in the 20th century underpinning the theories of many researchers reviewed in this study are: the behaviourist, cognitivist and constructivist theories (e.g. Harasim, 2012; Haythornthwaite & Andrews, 2011; Lowerson, Cote, Abrami, & Lavoie, 2008; Snowman et al., 2009). These are discussed here to provide theoretical foundation underpinning the rational of the learning in e-learning.

Behaviourism was developed in the late 19th century as one of the first major learning theories that attempted to use scientific method to explain observable human behaviour. It
was used to empirically verify the human learning process, especially by means of the factors that cause change in behaviour, and the ways of obtaining or avoiding particular behaviours, and it held the belief that learning should be empirical, observable and measurable (Harasim, 2012; Lowerson et al., 2008; Snowman et al., 2009). For example, Lowerson et al. (2008) proposed that “knowing is the result of objective experience” (p. 426), and Snowman et al. (2009) used the term ‘operant conditioning’ (originally introduced and developed by Skinner) to refer to the behaviourist learning theory that focused on the environmental impacts by which human behaviours were influenced in the present and the possible consequential changes in performance in the future. Driscoll’s (2007) definition of learning theory that focused on the three essential factors: the results, the means and the inputs, seems to be constructed primarily from the principles of the behaviourist learning framework.

In previous decades, e-learning technologies, such as computer-based instruction (CBI), computer-assisted instruction (CAI), or computer-aided learning (CAL), were designed primarily along the lines of the behaviourist learning framework (Harasim, 2012; Snowman et al., 2009). For instance, the behaviourist-related computer programs mentioned in Snowman et al.’s (2009) study are the drill-and-practice programs and the tutorial programs. The drill-and-practice programs were designed for students to obtain factual information and knowledge from computers and to practise skills that had been learned earlier (Nicholoson, 2007; Snowman et al., 2009). The tutorial programs were designed to use computers to instruct students, step-by-step, to be able to identify new material, such as facts, definitions, and concepts. Under the processes of using these programs, the student learning outcomes were measured, evaluated, and analysed by computers (Snowman et al., 2009).

Cognitive learning theory, which was introduced in the mid-20th century, addressed the importance of human internal mental processes, an area neglected in behaviourist learning theory. Instead of focusing on analysing and interpreting the observable and measurable human learning outcomes, cognitivism attempted to elucidate such changes in human performance by recognizing as well as theorizing and modelling invisible human cognitive processes (Harasim, 2012; Lowerson et al., 2008). Consequently, these theories
suggested that effective learning could be achieved if we could understand the human brain process in terms of knowledge acquisition and transformation. However, cognitivism was not completely different from behaviourism; instead, it was viewed as a progression of the earlier theory. The literature suggests that these two theories were derived from the same epistemology, ‘objectivism’. Firstly, Harasim (2012) proposed that “cognitive pedagogy was based on objectivist instructional design” (p. 12). In addition, Lowerson et al. (2008) proposed that, in terms of instructional design, cognitivism and behaviourism were both “highly structured with explicit learning objectives” (p. 428), for the reason that they both perceived knowledge as noticeable, objective and assessable. Four main approaches presented by Tomasello (2002, as cited in Taylor and MacKenney, 2008) provided a general outline of cognitivism as a behavioural approach, which focused especially on the relationship between the stimulus and the response, such as Este’s stimulus-response theories; a developmental approach, which focused on the stages of concept development, such as Piaget’s child development theories; an information processing approach, which attempted to simulate human problem-solving processes in computer program designs, such as Newell and Simon’s study in the 1990s; and a linguistic approach that suggested *language dependence* is the core of human cognition, such as Chomsky’s and Borokitsky’s psycholinguistics theories in the 1970s and early 21st century.

Because cognitivism focused mainly on human mental processes, and information processing is one of the main cognitive approaches, Harasim (2012) proposed that artificial intelligence (AI) and intelligent tutoring systems (ITS) were two of the educational technology designs that implied the application of cognitivist learning theory in e-learning. It is also suggested that, just as the theoretic derivation of cognitivism was a progression of behaviourism, AI and ITS were both developed based on a predecessor, computer assisted instruction (CAI), one of the behaviourism related e-learning technologies (Harasim, 2012). AI and ITS popular during the 1980s and 1990s have lost their impetus in the application of e-learning in the educational field in recent decades. AI had been used to support instructional design, but with limited success because computer intelligence failed to “achieve human-like cognitive performance” (p. 57). ITs were used in education as *content-specific* instructional tools designed primarily to support student-centred problem-solving.
via computer instructional programs. However, it was not broadly accepted either in the educational field or the training market. The failure of the implementation was mainly put down to its failure to adopt the shift of the main aspect of learning theories from objectivism to constructivism and the advent of the Internet and Web technologies (Harasim, 2012).

Constructivism attempted to clarify how learners construct their inner understanding and knowledge through meaningful and effective learning that filters, interprets, reflects, or merges new ideas and experiences from external environments (Bowles, 2004; Garrison & Anderson, 2003; Harasim, 2012; Snowman et al., 2009). In constructivism, meaningful learning is referred to as a mental process that arises when learners, using their existing experiences and knowledge, intend to seek explanations for external messages (or patterns) for why or how things happen. They then form their memory accordingly (Garrison & Anderson, 2003; Snowman et al., 2009). Effective learning in constructivist theory addresses the importance of the process of how learners fundamentally restructure their existing concepts by connecting their collective experiences and new ideas, rather than focusing on the process of transmitting instructions and information to the learners (Bowles, 2004; Lowerson et al., 2008). Snowman et al. (2009) proposed two major variations of constructivism, which they called cognitive constructivism and social constructivism, which were mainly based on the theories derived from some influential scholars in the educational field in the 20th century, such as Jean Piaget, Lev Vygotsky and John Dewey.

Based upon Piaget’s (1959) theory of cognitive development, Taylor and MacKenney (2008) argued that in cognitive constructivism, although having the assistance of a teacher’s instructions, learners construct knowledge by themselves individually but not entirely by adopting or reduplicating transmitted resources. The theories focused on the individual’s ability to develop and create new concepts (mental schemes) by effectively integrating new information into existing knowledge (Snowman et al., 2009).

Social constructivist theories on the other hand held the belief that the process of constructing knowledge is subjective and social rather than individual; learners make sense and develop shared concepts (or knowledge) through obtaining resources from their
surroundings and through explicit instructions on how to use their learned abilities (e.g. language or mathematics) authentically in the real-life environment (Lowerson et al., 2008; Snowman et al., 2009; Taylor & MacKenney, 2008). Such ideas were mainly derived from the schemes proposed by social constructivists such as Lev Vygotsky and John Dewey (Snowman et al., 2009).

In relation to the connection of constructivism to e-learning, several computer-based constructivist learning environments were mentioned in Harasim’s (2012) study. Harasim used the term learning environments to refer to “open-ended” (p. 73) computer software where users’ participation and input were essential for the software to function. Some of the software types mentioned, such as MicroWorlds, seem to be more cognitive constructivist related. Specifically, the scaffolded intentional learning environments were more or less in between cognitive and social constructivism, whereas the tools such as learning networks (or telecollaboration) were more associated with social constructivism.

Based on Harasim’s (2012) report, MicroWorld’s associated programs, such as the Logo programming language, were designed to help students of different ages become familiar with using computers to write messages and construct graphic images (e.g. buildings and cities). The HyperCard enabled students to use a multimedia database to organize and present a wide range of information and resources. Mind tools, such as concept maps, databases, and spreadsheets enabled learners to customise new ways of accessing and interpreting information, and further constructing personal knowledge through computers. These tools were designed mainly for learners to individually access information, construct new knowledge and obtain skills through interacting with computer software programs, which link these to cognitive constructivism.

Scaffolded intentional learning environments, such as computer-supported intentional learning environments (CSILE), aimed to enhance students’ autonomy in building their meta-cognitive abilities through constructing and interacting within a shared communal database. This type of software program required learners to input resources (text or images) corresponding to the topic of the database and commented on the contents from other users. In the 1980s, before the Web era, such databases were accessed within local networks such as campus networks (Harasim, 2012). This type of learning
environment involved both the individual’s cognitive development as well as the social impacts of the process of constructing the communal database, and therefore, the learning applications of such e-learning tools could be seen to be founded on both cognitive and social constructivism principles.

Learning networks (or telecollaborations), as mentioned in Harasim’s (2012) study, involve online learning networks and online course delivery platforms. Some examples of the e-learning tools used for such learning environments are: Blackboard, WebCT, Desire2Learn and Moodle. With the help of Internet technologies, these learning tools enable cross-classroom learning activities to take place across a vast range of different educational organizations worldwide. Today, these learning environments also allow and require users to participate in constructing and generating the content of the learning systems. The online discussion forums of the system, both asynchronous and synchronous, play an important role in such learning practice. Various sub-forums, such as seminars or small group discussions, are constructed around the learning activities or project topics. These online forums could be closed and available only to target users (such as registered students) or open to social media for the public to participate. This way of learning is fundamentally social constructivist for it is greatly impacted by online social activities.

2.2.2.2 New Approaches to Learning Theories in E-Learning

Although the three major conventional learning theories from the 20th century, behaviourism, cognitivism, and constructivism, have become blended to some extent and have shaped to some extent the notion of ‘learning’ in e-learning, the discussion above is about the way that researchers tried to fit the conventional learning concepts into the contemporary e-learning applications. Two learning models that are considered to be more ‘e-learning’ rather than conventional learning derivative are presented below.

The model proposed by Andrews and Haythornthwaite (2007) attempted to illustrate ‘learning’ from an e-learning standpoint by restructuring the essence of existing learning theories under four general concepts: “learning” was described as a transformative act that took place individually as well as socially and politically; it is not only an individual experience but also an effect of community; “learning and knowledge are inextricably
related” (p. 17) and the transformation of the bodies of knowledge is closely related to individual learners and the wider community; and the interactions between learners and the community facilitate the knowledge development for both the individuals and the community as a whole. This model emphasises the importance of the effect of community. Andrews and Haythornthwaite claim that in e-learning, the effect of community is significantly enhanced by the elimination of the physical distance between individuals, groups and communities with the help of e-technologies, such as the Web and mobile-related technologies.

An updated model proposed by Haythornthwaite and Andrews (2011) described the ‘learning’ in e-learning under three foundational concepts: transformation, framing and emergence. Transformation could be seen as an advanced re-statement of the four aspects of their 2007 model mentioned above. Transformation, described as the core of learning, was illustrated in three specific learning aspects: the personal, social, and political. In this model, these three aspects of learning are considered to be fully integrated in learning actions. Besides learning being a personal lifelong experience and development, the idea of learning as an effect of community was introduced by Rogoff (1992) and inspired by Vygotsky (1986) re-emphasised the social aspects of learning. The ‘community’ in this notion was further defined as involving a wide range of different groups, organizations, and communities such as family, special interest groups, formal or informal institutions, and various electronic and social media networks. There is also a political aspect to learning. The “micro-politics” here stands for power relations between teachers and students rather than the power entrusted by the society (e.g. the government or the institution administrators). It seems, then, that teachers are the ones who possess a power that allows them to act as decision-makers, for example they control classroom activities or design e-learning courses. However, students also have the power to shift teachers’ thinking or approaches with their reactions, opinions and performances and, therefore, influence teachers’ decisions.

The second notion of Haythornthwaite and Andrews’s (2011) three foundational concepts of learning, framing, refers to “the way we use certain kinds of rules and experiences as interpretive frames for action” (p. 35). The supporting arguments provided
here parallel the processes of knowledge acquisition and transformation mentioned in the previous discussions. For example, the authors stated that, “when we learn, we make further sense of or discover meaning in our surroundings” (p. 36), and “that further sense is based on the knowledge we already have, plus the new knowledge that we acquire in the act of learning” (p. 36). Three fundamental stages were described to present the relationship between learning processes and framing: the initial ontological state, the learning act, and the subsequent ontological state. The learning act was emphasised as having the key role in the process of these three states, for the learning act is the means by which the initial ontological state is transformed, bringing learning into a new stage of knowledge. Haythornthwaite and Andrews (2011) argue that these three stages are all framed by personal, social and political experience. In addition the second stage, the learning act, also involves a pedagogical framing that takes place both within and outside formal learning contexts. In e-learning, the frames of the learning act could be changed when a learning activity is moved from a conventional classroom to an online virtual setting.

The third notion, emergence, is referred to as the emergent nature of learning. As cited from Engeström (2009), emergence occurs when learners reveal a new understanding of their objects of interest through an ‘expansive learning’ experience resulting from “observation and active engagement with environmental elements” (p. 37). It would appear that this notion is primarily informed by the theories of social constructivism as it involves the progression of individual knowledge construction, social development, and environmental modification. The authors used the term “emergent learning” to refer to the social-constructivist-like theories that stated that knowledge is not only learned by individuals, but also “by and with a community” (p. 38), and the environment is continuously refined and modified by the new knowledge created and reintroduced by its related individuals and communities. Garrison (2011) proposed a similar argument, which posited that “to construct meaning (reconstruction of experience) from a personal perspective” and “to refine and confirm this understanding collaboratively within a community of learners” (p. 10) were the two purposes of an education experience.
2.2.2.3 Summary

Learning, as presented in the beginning of this section, was described as a lifelong human activity that involves personal knowledge acquisition and transformation, and social communication and interactions, and this applies to e-learning as well. The three dominant learning theories from the last century, behaviourist, cognitivist and constructivist, have all influenced in some way the application of e-learning in the field of education, for example, behaviourism to CAI and CAL applications, cognitivism to AI and ITS applications, and constructivism to Microworlds, CSILE and learning networks. However, since these learning theories originated before the advent of the electronic age, discussions found in related literature were mostly attempting to match these existing theories with the contemporary e-learning applications rather than building their arguments from an e-learning point of view. Andrews and Haythornthwaite (2007) devised two models that were more e-learning driven, the first in 2007 and the second, a revised version of the first, in 2011. The one important constant in these (e-learning derived) and earlier (conventional) models of learning was the importance of social/community impacts on ‘learning’. The flexibility and mobility of communication between individuals and communities have been constantly and swiftly expanded by the rapid development of e-technologies, and our social structures/ networks have been altered by the ever-growing online virtual societies. With the immense revolution and evolution in learning technologies and the significant increase in the number of online interactions in societies, it is necessary to consider whether existing learning theories are adequate for this new definition of ‘community’ that has expanded into the virtual world of technology. Do we need, therefore, new and radically different theories of learning either instead of or in addition to our current theories of learning?

This section first clarified the definition of the term ‘e-learning’, followed by a thorough discussion of its two components, ‘e’ and ‘learning’, and its implications in educational practice. Confusion and disputes over the definition of e-learning were found to have arisen from differences in the use of terminology, differing concepts of what constituted the technology context and different approaches to its educational applications. For the purposes of this study, the ‘e’ in ‘e-learning’ stands specifically for modern educational technologies used for supporting and enhancing learning practice, and e-
learning is defined as e-technology-facilitated teaching and learning activities in synchronous, asynchronous, and/or digital collaborative modes, that can take place offline, online, or a blend of both with the help of electronic and networked ICTs.

As much has been discussed about the theoretical and conceptual nature of e-learning, one question in relation to the objectives of this research would be: What, if any, features distinguish e-learning in L2 learning and TCSL from the other education disciplines?

2.3 E-learning in Second Language (L2) Learning

This section illustrates various aspects of e-learning in the field of L2 education. There are ambiguities in much of the relevant literature surrounding what constitutes L2 learning, and, therefore, it is necessary to clarify the meaning of the term L2 used in this research and present the central concepts of L2 education before stepping into the discussion of e-learning as it relates to L2 learning. The discussion on e-learning in L2 learning will involve the issues in relation to the well-known computer-assisted language learning (CALL) system as well as the emerging mobile-assisted language learning (MALL) system. The section will close with a presentation of some studies that are relevant to e-learning and Chinese as a second language (CSL) learning.

2.3.1 Terminology in Relation to L2 Learning

In terms of second language learning, many different acronyms are commonly seen in relevant literature, for example, SLA (or L2A) for second language acquisition (e.g. Birdsong, 2004; Gass & Selinker, 2001), SLL for second language learning (e.g. Blake, 2009; Cheng & Winston, 2011; Evans, 2009; Littlewood, 2004; S. Wang & Vasquezm, 2012), FLL for foreign language learning (e.g. Evans, 2009), and FLA for foreign language acquisition (e.g. Pawlak, 2011). The terms listed above seem to be frequently used interchangeably by scholars with no clear distinctions in meaning. Much of the relevant literature indicated that, although subtle differences between SLA and FLL (or L2 setting and FL setting) have been noted (e.g. Birdsong, 2004; Gass & Selinker, 2001), specific distinctions have rarely been made either between second language (L2), foreign language (FL), or additional language (AL) (see examples in: Turnbull & Dailey-O'Cain, 2009; Westberry, 2009). Furthermore, language learning and language acquisition are also
commonly used interchangeably in the literature relevant to L2 education (see examples in: Debski, 1997; Levy, 2009; Littlewood, 2004; Ma, 2010; Sturm, Kennell, McBride, & Kelly, 2009). One obvious example could be seen in Debski’s (1997) study that described foreign language learning as the “acquisition of language content through purposeful and reflective participation in social action” (p. 47)

L2, although labelled as ‘second’, generally refers to whichever additional language the learners learn subsequent to the acquisition of their first language; it could actually be a language learners’ third, fourth or even ninth, or tenth language (Gass & Selinker, 2001; Lightbown & Spada, 2006; Saville-Troike, 2006). L2 is also frequently equated to non-native language in the field of linguistics as well as in language teaching and learning (e.g. Schwartz, 1999). The term L1 (first language) commonly stands for the learners’ first language that they acquired as children, and its common equivalent terms would be NL (native language), primary language, or the mother tongue (Gass & Selinker, 2001; Lightbown & Spada, 2006). One more common term, TL (target language), is used to indicate the taught or learned language; it could indicate either L1 or L2 (Lightbown & Spada, 2006). There is a more recent, and perhaps preferable, trend towards using the name of the target language, such as ELL (English language learning) or CLL (Chinese language learning) instead of ESL/EFL or CSL/CFL.

When distinctions between the terms used in the field of language teaching and learning are made, the focus is generally placed upon the variation of language environment in which the learning (or acquisition) of the non-native target language takes place, rather than any distinction in the nature of language ‘acquisition’ and ‘learning’ (e.g. Ayoun & Salaberry, 2008; Gass & Selinker, 2001; Gibby, 2007; Lightbown & Spada, 2006)). For instance, some distinction is made between L2 setting and FL setting. It has been proposed that the former stands for the setting in which the learners’ non-native target language is the majority language (L2 learners learn English in English-speaking countries, which is referred to as ESL (English as a Second Language), whereas the latter means the target L2 is not the L1 of any large group in that setting (L2 learners learn English in Japan, and this is referred to as EFL (English as a Foreign Language) (Ayoun & Salaberry, 2008; Yule, 2010).
Similarly, Gass and Selinker (2001) differentiated SLA from FLL focusing on the distinction between SL (second language) and FL (foreign language) rather than on the difference in the sense of ‘acquisition’ and ‘learning’. SLA was described as the learning of a L2 within the language environment in which the language is spoken as a native language (e.g. German speakers learn English in English-speaking countries such as England or the United States), whereas FLL referred to the learning of a L2 in the learners’ native language environment (e.g. English speakers learn German in England or the United States). Consequently, FLL could also involve learning a L2 in language settings where the target language is not spoken as a native language (e.g. German speakers learn Japanese in the United States). However, SLA is often used to indicate both the field of SLA and FLL, referring to the learning of an additional non-native (or non-primary) language, regardless of its language learning settings (e.g. Gass, 1995; Saville-Troike, 2006). One example is seen in Wojtaszek and Arabski (2011) Individual Learner Differences in SLA; although the title uses the term ‘SLA’, both SLA and FLL related studies are explored in the book.

Such is the case also with Chinese language teaching and learning. Acronyms such as CSL (Chinese as a second language) and CFL (Chinese as a foreign language) are commonly used interchangeably in relevant literature (see examples in: Gong & Li, 2011; Jiang & Ramsay, 2005; Linnell, 2001; Liu, 2011; Y. Zhang, 2009). However, in Taiwan, the use of TCSL seems much more prevalent than TCFL in naming Chinese language teacher preparation programs. Twelve out of 13 Taiwanese institutes in this field are called ‘Graduate Institute (or Master’s Program) of Teaching Chinese as a Second Language’, and only one institute among the thirteen includes foreign language in its name as Master’s Program of Teaching Chinese as a Second/Foreign Language’. The fact that these teacher preparation programs all aim to equip their students with the ability to teach Chinese to non-native speakers both in Taiwan and overseas, means the programs do involve both TCSL and TCFL, if Gass and Selinker’s (1994) differentiations between SLA and FLL are to be applied. Hence, this research will use the term CSL to indicate Chinese as the target L2, and TCSL (teaching Chinese as a second language) to indicate teaching Chinese to the learners whose L1 is not Chinese, and this will comprise the general fields of both TCSL and TCFL.
2.3.2 Fundamental Concepts of L2 Learning

L2 learning, as with any language learning but distinct from other disciplines in education, involves the conventional four essential features: listening, speaking, reading and writing (Garrett, 2009a; Mitchell, 2000). In view of the nature of language, each of these features requires complex fundamental linguistic knowledge of the following: the sound and pronunciation system (phonology), word formation (morphology), grammar and sentence structure (syntax), meaning (semantics), and the use of language in context (pragmatics) (Gass & Selinker, 1994; Saville-Troike, 2006). On top of the four language skills and the fundamental aspects of the nature of language, Garrett (2009b) drew upon language acquisition theory to claim that “language learning is the acquisition of the ability to construct communicative meaning in a new system” (p. 714). Such spontaneous interpersonal communication that is closely related to the target language’s cultural context has been considered by many as the core of L2 learning/acquisition (Blake, 2009; Garrett, 2009b; Levy, 2009). Rather than through mechanical drill exercises of selected language skills in an artificial language learning setting, the acquisition of L2 is obtained more effectively by means of purposeful and reflective participation in social interaction (Debski, 1997). For example, with little or no authentic language communication experience, some students might receive high scores on L2 tests such as vocabulary, grammar, reading comprehension or listening comprehension, but still find themselves having difficulties in reading authentic texts or understanding the natural spoken target language. Consequently, the integration of authentic and natural language learning environments into teaching and learning activities, such as engaging language learners in communication and interaction with peers or native speakers of the target language, has become one of the most emphasised foci in L2 teaching and learning in recent decades (Chapelle, 2009; Ciccone, 1995; Garrett, 2009b; Sturm et al., 2009).

2.3.3 E-learning in L2 Learning

The recent rapid development of ICT, occurring not simply in this field but in all educational fields, has carried the use of technology in L2 teaching and learning into a new era that goes far beyond people’s prediction and imagination three decades ago (Chapelle,
Garrett’s (1991) article, *Technology in the Service of Language Learning: Trends and Issues*, provides an overview of the use of technology in L2 teaching and learning prior to the late 1980s. Based on Garrett’s report, in the 1980s, audio players were widely owned by students and video players were commonly available to schools as well as to the general public, making video tapes and satellite technology the major electronic media used for enriching the authenticity and cultural context of target language learning at that time. However, computers were not yet popularised in schools or in households, and the interaction between students and computer-based teaching aids, such as interactive-audios or interactive-videos, was extremely limited. The software designs and programming were mostly focused on drill exercises in the four basic language skills (Levy, 1997). Chapelle (2009) argues that until the late 1980s, a big body of L2 teachers considered using computer technologies as an optional add-on for their teaching practice. In that period, the development of technology-based language teaching and learning materials was seen to be in its infancy, it was predicted that it would grow quickly (Garrett, 2009b). Garrett’s prediction soon turned into reality as the World Wide Web and wireless and mobile technologies launched into the field of L2 education in the 1990s. Therefore, along with the evolution of ICT, e-learning in the field of L2 education has been impacted not only by computer-based technology but also by mobile-based technology. Consequently, CALL and MALL are regarded as the two most significant subsets of e-learning in the field of L2 education (Chaka, 2009).

### 2.3.3.1 Computer-Assisted Language Learning (CALL)

CALL is one of the most important fields in respect to e-learning in L2 education. The discussion of CALL is divided into three main foci: the definition, the commonly seen relevant acronyms, and a brief history.

The term CALL has been commonly used to stand for e-learning in the field of L2 teaching and learning. Although the use of computer-based tools in assisting L2 teaching and learning can be dated back to the 1960s (Chaka, 2009), not until the mid 1980s, did the acronym CALL become established (Chapelle, 2001; Levy, 1997; Stockwell, 2012b). Ever since, CALL has been used as a broad-spectrum term commonly referring to L2 teaching
and learning that is assisted and enhanced by computer-related technologies (e.g. Chaka, 2009; Lafford, 2009; Levy, 1997; Stockwell, 2012b).

Parallel to the term e-learning in educational sectors, CALL involves two major elements: C (computer) and LL (L2 learning). As with the ‘e’ in e-learning, the ‘C’ in CALL has been used broadly to stand for the whole range of possibilities of computer- as well as ICT-related technologies that are used to support L2 teaching and learning, although the technologies used have undergone dramatic development since they were first launched in the field of L2 education. Bateson and Daniels (2012) claim that “generally speaking all electronic devices nowadays have some kind of interface with a computer.” (p. 127), and Stockwell (2012b) confirmed that “… almost any electronic device that may be used as a part of the language learning process must have a computer of some shape or form at its heart” (p. 11). Moreover, according to the literature, CALL also covers all roles that the computer may perform in L2 teaching and learning, for example as teacher, tutor, tester, information provider, or data verifier (Patrikis, 1997).

While the C in CALL is about the application of technologies to second language teaching and learning, the LL part (L2 learning) of this acronym is more complex as it relates to learners and tasks (Levy, 1997) as well as to the broad range of L2 learning/acquisition theories and pedagogies (Garrett, 2009a). More importantly, in addition to technology and L2 learning, CALL is also perceived to have a role in establishing and maintaining “social networks with non-native and native speakers of the target language for various forms of professional, academic, and social activity” (Lafford, 2009, p. 680).

Hence, a considerably more comprehensive definition of CALL is the one provided by Stockwell (2012b) as “an approach to teaching and learning language that uses computers and other technologies to present, reinforce, and assess material to be learned or to create environments where teachers and learners can interact with one another and the outside world” (Preface). Stockwell’s definition indicates that the development of e-technology has reformed not only the ways of L2 teaching and learning but also the ways of communicating within and between the authentic environments of the target languages. For instance, Web-based communication technology could provide limitless access not only to
authentic materials in the target language, but also to numerous intercommunicative opportunities (Alford & Pachler, 2007; Blake, 2009), and the web-based tools such as text-chat, voice-chat, web-cam, and audio-blogs enable L2 learners to expose themselves to authentic materials and interact with native speakers synchronously or asynchronously without space or time constraints. (Garrett, 2009b; Kruk, 2011; Levy, 2009).

Although CALL is considered to be the most recognisable (Levy, 1997) and enduring (Stockwell, 2012b) term for e-learning in the field of L2 education, it is worth mentioning that a multitude of other CALL relevant acronyms have commonly been used since the computer was first introduced into this field. To name a few, acronyms such as ICALL (Intelligent Computer-Assisted Language Learning), CELL (Computer-Enhanced Language Learning), and TELL (Technology-Enhanced Language Learning) (Levy, 1997); CASLA (Computer-Assisted Second Language Acquisition) (Chapelle, 2001; Stockwell, 2012b); CALI (Computer-Assisted Language Instruction) (Chaka, 2009); and, TALL/TELL (Technology-Assisted/Enhanced Language Learning), NBLT (Network-Based Language Teaching) (Stockwell, 2012b), and the very recent MALL (Mobile-Assisted Language Learning) (Chaka, 2009; Stockwell, 2012b), have all been used in the field of e-learning as it relates to L2 education.

Although these seem to be a miscellany, one common feature of these acronyms is that most of them include the term “enhanced”, or “assisted”, and sometimes both, which indicates the function as well as the position of computer technologies in CALL-related L2 education. There are differences and these can be clearly divided into two groups, the technology component and the language education component. Within the technology component some acronyms (e.g. TELL, TALL) use an overarching general term such as ‘technology’, and some (e.g. CELL, CALI, CALSA) use a more precise term such as ‘computer’ to encompass a greater range of the tools used in CALL. Acronyms such as NBLT or MALL, however, explicitly specify the technology used. The language education component of these acronyms falls into two groups, one of which focuses on the role of computer technologies in the L2 learning aspect of the program (e.g. CELL or CASLA) and the other, including CALI and NBLT, focuses on the teaching aspect. Thus, it could be concluded that each of the acronyms presents some particular focus in CALL-related L2
education and could be seen either as a synonym (e.g. CELL, TELL, CALI, CALSA) or as a subset (e.g. NBLT, MALL) of a CALL system.

CALL has had an interesting history. Since CALL is inextricably linked with computer technologies, it is commonly agreed that, to a great degree, the development of CALL reflects the changes on the subsequent evolution of the educational technology (Levy, 1997). Therefore, in terms of describing the evolution of CALL, some scholars, for example, according to Chaka’s (2009) report, Warschauer (1996) and Kern and Warschauer (2000) divided the development of CALL into three main stages based on the technologies in use for L2 education, and they are: “mainframe computer technologies; PC technologies; and multimedia networked computer technologies” (Chaka, 2009, p. 540). From another perspective, Levy (1997) presented the evolution of CALL based on time periods: 1960s to 1970s, the 1980s, and the 1990s by selecting exemplary CALL projects from each of the decades. For instance, the PLATO (Programmed Logic for Automatic Teaching Operations) and TICCIT (Time-Shared, Interactive, Computer Controlled Information Television) projects selected to be representative of CALL in the 1960s and 1970s were mostly operated using mainframe computer technologies. The Storyboard and ALLP (Athena Language Learning Project) characterising the 1980s were developed as the PC (micro-computer) was introduced; and the International Email Tandem Network, the CAMILLE (Computer-Aided Multimedia Interactive Language Learning)/France InterActive project, and the OLA (Oral Language Archive) representing the 1990s were made possible by the advent of multimedia networked computer technologies.

In the 2000s, alongside the emergence of the WWW and the accelerated expansion of wireless and mobile technologies, Web 2.0 technology enhanced L2 teaching and learning enormously (Lafford, 2009; Sturm et al., 2009; S. Wang & Vasquezm, 2012). Lafford (2009) proposed that “Web 2.0 applications have made possible immediate access to current target culture attitudes and beliefs through telecollaboration projects and social networking ” (p. 690). Sturm et al. (2009) further stated that a social constructivist learning theory informs Web 2.0 learning activities for these enable L2 learners to collaboratively and socially interact with native target language speakers as well as other language learners, so as to construct and reconstruct concepts and knowledge. A study of the relationship
between Web 2.0 and L2 learning, highlighted the fact that blogs and wikis would be the most interesting subjects for relevant research (S. Wang & Vasquezm, 2012).

Levy (2009) demonstrated a range of available CALL technologies, especially of Web 2.0 tools, for each of the essential language practices such as grammar, vocabulary, reading, writing, pronunciation, listening, speaking, and cultural understanding. For example, he discussed the use of Web-Writing 2.0 for writing practice, the Webcasts and podcasts for listening, online chatter-bots for speaking, and the Web 2.0 tools such as Active Worlds and Second Life for online intercultural collaborative learning activities. However, Kruk (2011) argued that the four major features of L2 learning (listening, speaking, reading and writing) are closely interconnected and that a L2 learner will have great difficulty acquiring one single skill without involving the others. So, when students are practising speaking skills using a variety of CALL media, such as online audio, video, or teleconferencing, they will at the same time be learning other skills such as reading and listening, as well as expanding their vocabulary capacity.

2.3.3.2 MALL (Mobile-Assisted Language Learning) in L2 Learning

Parallel to the development of e-learning, there has been ongoing discussion about and research into MALL (mobile-assisted language learning) in relation to the field of L2 learning (Chaka, 2009). The rapid development of Internet and portable wireless technologies has made possible instantaneous and unlimited social interactions and has created new language learning environments with no space boundaries (Gesche, 2009; Milne, 2007). Furthermore, portable devices such as tablets, laptop computers and smart phones that have standard built-in microphones and video cameras to allow video conferencing anywhere as long as there is Internet connection, and the touch-screen that provides on-screen handwriting recognition are all considered to be beneficial tools for L2 learning (Stockwell, 2012b). Chaka (2009) also suggests that there is an increasing tendency for individual L2 learner to access Web 2.0 applications such as podcasts, blogs, wikis and RSS (Rich Site Summary) through mobile devices to facilitate their personal as well as social language learning (Chaka, 2009).
However, e-learning in L2 learning should not be focused only on keeping up with and using the latest ICT inventions. As Michael Levy (1997) argued and it has since been confirmed “no sooner do we come to terms with one machine and develop some CALL materials for it, than another ‘better’ machine arrives to replace it” (p. 1). Therefore, this research goes beyond investigating just the technology use and uptake but also the teaching and pedagogy within e-learning.

### 2.3.4 E-learning in TCSL

As mentioned in the introduction to this thesis, Chinese CALL was first developed in the USA in the 1970s by Chin-Chuan Cheng using the PLATO (Programmed Logic for Automated Teaching Operation), a system to design a program principally for teaching Chinese characters. Since then, as the technology became more advanced, the use of technology in TCSL has progressed from computer-based PLATO, to the CD-ROM, and now to the Web-based technologies. Bourgerie (2003) presents a holistic survey and annotated bibliography for Chinese CALL up to the date of publication. The survey covers a wide range of sources from CD-ROM, Internet-based courses, online chat rooms, to online texts and media. The report indicates that most online resources were free of charge. There were numerous chat rooms providing authentic interactions for Chinese language learners, and resources such as news media, news text, electronic-based literary texts, and videos were available online. Although technology seemed to be providing great aids for CSL education, there were limitations and problems. The most common problems according to the literature were the neglect of adequate pedagogical considerations in the design of digitalised learning materials, the difficulties in typing and displaying Chinese characters, and the limitations of the language labs available for CSL learners. The findings of the study also suggested that teachers needed to be proficient in the use of the technology and software they intended to employ, and to pay extra attention to training their language students to be able to use this technology for learning.

Chinese has been considered a difficult L2 language because of its unique linguistic features including pronunciation and character writing systems. (Christensen, 2008; Hu, 2010; Qian & McCormick, 2012; Shei & Hsieh, 2012; Yan & Song, 2013). This is
especially the case for learners whose L1 language is non-tonal or alphabetical. In terms of articulatory difficulties, Qian and McCormick (2012) and Shei and Hsieh (2012) state that the beginning CSL learners commonly find it difficult to pronounce the sounds that do not exist in their L1 phonemic inventory which makes it difficult to precisely articulate the five different tones of Chinese. Shei and Hsieh (2012) assert that Chinese language is composed of about 400 syllables that contain numerous homophones. These homophones are pronounced exactly the same or with only minor tonal differences. CSL students report difficulties in distinguishing and differentiating similar sounding words with different tones (Qian & McCormick, 2012; Shei & Hsieh, 2012). To counter these issues, Shei and Hsieh (2012) introduced a CALL software program, Linkit, which enables CSL learners to be type Chinese words based on the sounds of the words. Linkit is “a hierarchical network model CALL system” (p. 331). It encompasses a large cross-referencing database that helps differentiate homophones, similar-sounding words (morphemes) and different toned-syllable. The learner who has difficulties in determining the right words can input sounds into the Syllable columns of the Linkis that helps find the correct words to use.

Learning to write Chinese characters is also considered a difficult task for the beginning learners of CSL (Yan & Song, 2013). Chinese written system is non-alphabetical ideographic orthography in nature and the written characters do not directly reflect to the phonemes of the words (Christensen, 2008; Hao et al., 2010; Tse, Ip, Tan, & Ko, 2012). Further, the Chinese written system comprises a large number of characters. The characters are normally composed with complex structures and irregular strokes (Yan & Song, 2013). Many different theories in relation to the structures of Chinese characters can be found in published literature. Many Chinese CALL programs have been developed and introduced into the field of TCSL for enhancing CSL learners’ Chinese character writing capability. For instance, the Chinese radical-derived character e-learning platform (H. C. Chen et al., 2013), the Chinese character handwriting diagnosis and remedial instruction (CHDRI) system (Hsiao, Chang, Chen, Wu, & Lin, 2013), and some online Nintendo Wii-like vision-based motion games (Hao et al., 2010).
In addition to pronunciation and character writing systems, it is also agreed among the researchers that obtaining contemporary culture knowledge and cross-cultural communication skills is an essential part of L2, in addition to CSL learning (e.g., S. Chen, 2008; Y. F. Chen & Hsin, 2010; Christensen, 2008; Duff, 2008; Liddicoat & Scarino, 2013). Duff (2008) indicates that the American Council on the Teaching of Foreign Languages (ACTFL) in the United States identified culture as one of the five essential components (communication, cultures, connections, comparisons, and communities) of L2 learning for the 21st Century. Indeed, both L2 teachers and learners are encouraged to enhance deep understanding of the cultural of the target language. Similarly, The Common European Framework of Reference for Languages (CEFR) also includes the development of L2 learners’ competency in effective intercultural communication as part of L2 curriculum. In regards to CSL teaching and learning, Christensen (2008) suggests that students’ CSL competency should not be just about their accuracy and familiarity in the four basic language skills (speaking, listening, reading, and writing) of Chinese; rather, it is “how to use Chinese in ways that native Chinese speakers expect people to behave, linguistically, socially, and culturally” (Christensen, 2008, p. 31). Hence, preparing CSL teachers to be able to teach Chinese cultural understanding within the language teaching is suggested to be an important content in CSL teacher training program (S. Chen, 2008). Duff (2008) regards language as “a meaning-making system within particular social contexts” (p. 21) and states that, for achieving effective cross-cultural communication, both CSL teachers and learners should have an understanding of the social and contemporary cultural contexts that the language is related to. Consequently, Christensen (2008) further suggests that Chinese language skills should be taught within Chinese social and cultural contexts. In Taiwan, TCSL teachers’ competence in cross-cultural communication is regarded as important and Chinese Society and Culture is one of the five subjects included in the national TCSL certification examination (Y. F. Chen & Hsin, 2010).

Reviewed literature suggests that e-learning is an effective means for enhancing of L2 cross-cultural awareness and intercultural communication. For instance, in line with Bourgerie’s (2003) study presented earlier, Duff (2008) and Liddicoat and Scarino (2013) propose that ICT has the potential to enhance L2 access to intercultural understandings.
They agree ICT not only advantages L2 learners in accessing cultural information of the target language but also provides useful communication platform between L2 learners and the target language speakers in the distance part of the world. Duff (2008) further suggests that it is crucial for both L2 teachers and learners to becoming a proficient user of new digital media and learning technologies to increase exposure to authentic Chinese language use, as well as cultural norms and values.

Online forums and immersive virtual learning software programs are two useful ICT tools used for CSL learners’ cross-cultural knowledge and communication skills in the field of TCSL. Qian and McCormick’s (2012) study indicates that online Chinese-speaking forums provide a virtual meeting place for online CSL learners to have opportunities to meet other learners as well as native Chinese language speakers at a distance worldwide. The forums not only effectively enhance CSL online learners’ intercultural communication skills but also ease anxiety caused by social isolation. In addition, using Second Life (an immersive virtual learning software program), has the potential to create authentic learning environments that have the potential to enhance social interaction with native target language speakers (Henderson, Huang, Grant, & Henderson, 2009; Lan, 2014; Liou, 2011). Relevant TCSL studies indicate that Second Life is not only useful for CSL classrooms in non-Chinese speaking environments, but also in Chinese speaking environments. The following review will present two research projects related to this field, one targets CSL students in non-Chinese speaking environment and the other CSL students in a Chinese speaking region.

Henderson et al (2009) investigated 100 students enrolled in Chinese language and culture studies at Monash University, Australia. The study focused on one particular lesson which involved a Second Life collaborative learning activity. The lesson was conducted in a face–to-face class setting. In the lesson, a Chinese restaurant was created in Second Life as an authentic internet based three-dimensional virtual world. Students could interact simultaneously with each other and practice identifying and ordering food in Mandarin Chinese. The results of the study suggested that the Second Life collaborative learning design significantly improved CSL students’ self-efficacy in relation to using Chinese language in real-life Chinese contexts.
Lan’s (2014) study researched CSL students studying overseas at a university in Taiwan. Even though students were learning within a Chinese language speaking environment, according to the researchers they rarely spoke Chinese either in the classroom or in their free time. The findings of the study indicated that CSL students felt more ease in performing oral output in Second Life virtual world setting rather than in the real world. Lan (2014) summarised that: “overseas Chinese students behaved more actively in interpersonal interactions and talked more frequently in SL than in the conventional classroom” (p. 48). Further the author noted that, “the authentic environments in SL also provided overseas Chinese students with an essential context for enhancing the L2 comprehension process” (p. 48). The results showed that CSL learning in Second Life CSL helped students improve their Chinese conversation skills and significantly increased their Chinese oral output in in-class interactions. However, one issues highlighted in the research was the deficiency of the technology in Taiwan. The low speed and unstable Internet connection is reported to impede the Second Life teaching and learning process.

At a similar point in time, Yao (2009) researched the current practices of Chinese CALL in the USA. The report showed that Chinese CALL had become heavily reliant on web-based technologies. The online CSL learning environment has experienced a great transformation since Bourgerie’s (2003) report. According to Yao’s report, learning resources offered on the web were shifting from teacher-centred to student-centred learning, and more websites were targeting younger learners. For example, by 2009 there were one-on-one tutoring websites that enabled CSL learners to decide what classes they wanted to take and when. The study also indicated that there were increasing numbers of online CSL institutes run by organizations in cooperation with USA and China. The development of web-based technology had, by 2009, solved some of the problems mentioned in Bourgerie’s (2003) survey, such as the difficulty in typing and displaying Chinese characters and limited access to the Web, yet the need for teacher guidance remained the same. Yao pointed out that, in terms of speaking and writing, online software was able to check for students’ errors and provide possible answers, but was not yet able to analyse and evaluate students’ answers.
Wang’s (2009) study on the impacts of using hyperlink dictionaries and authentic e-materials in CSL learning also reported on the need for adequate pedagogical and personal instructional support for performing successful Chinese CALL. The results of the study indicated that the use of online hyperlink dictionaries and authentic e-materials benefited intermediate CSL learners by helping them to look up unfamiliar vocabulary more effectively. However, it was noted that without the full integration of these technologies with appropriate pedagogical strategies, hyperlink dictionaries were merely a digitalised form of dictionary, and authentic e-materials are digitalised forms of text. The author suggested that hyperlinked dictionaries and e-texts are unable to achieve optimal results without instructors’ systematic strategies in supporting and guiding students in their reading process.

A web-based Chinese classroom established in 2002 in a university in Taiwan was the subject of a study by Chen and Liu (2008). This web-based classroom was established with the purpose of helping overseas college students in learning CSL. The main tool used for integrating audio-visual lectures was the WSML (Web-based Synchronised Multimedia Lecture) system. The study reported that the TCSL teachers did not receive special training either in the use of the system or in the particular pedagogy for conducting these types or lectures. This type of web-based classroom appeared to more or less resemble ‘digitally recorded’ lectures, and the major difference between virtual and actual language classrooms is that the recorded lectures can be repeated as often as needed.

In summary, this section clarified a range of terminologies that could be used to understanding the research context and present fundamental concepts of L2 teaching and learning. The section then discussed the main features of e-learning in relation to L2 teaching and learning, and finished with a discussion of e-learning in CSL teaching and learning. The discussion in this section suggests that L2 teachers play a crucial role in carrying out successful e-learning in L2 teaching and learning and this will be one of the key foci in the research. Given the noted importance of teacher preparation for making the most of e-learning effects in L2 learning, the following section explores models designed for this purpose.
2.4 E-learning and L2 Teacher Preparation

This section presents three theoretical frameworks in relation to the evaluation and enhancement of teachers’ capabilities in integrating and applying e-learning into their teaching practice. The discussion will first start with the framework, TPACK (Technological Pedagogical Content Knowledge), which was proposed for the teachers in general, followed by two models, Hampel and Stickler’s (2005) Seven-Level Skills Pyramid and a reformed model proposed by Compton (2009), which were designed for online language teacher preparation in particular.

2.4.1 TPACK: Framework for Pre-service Teachers’ E-learning Education

In the field of pre-service teacher preparation for e-learning education, the framework Technological Pedagogical Content Knowledge (TPACK) has been gaining increasing attention in recent years (Chai, Chin, Koh, & Tan, 2013; Graham, 2011; J. Harris, Mishra, & Koehler, 2009; Niess, 2008; Schmidt et al., 2009). The term Technological Pedagogical Content Knowledge was first described in Mishra and Koehler’s (2006) study with the acronym TPCK. This framework’s predecessor, Pedagogical Content Knowledge (PCK), was first constructed by Shulman (1987). The original PCK framework involved three core elements: content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK) (Shulman, 1987). Mishra and Koehler (2006) expanded PCK to include technology knowledge to form the framework TPCK. The acronym TPCK was later renamed TPACK mainly to make it easier for people to pronounce and remember (Schmidt et al., 2009), and these two acronyms have been commonly used interchangeably in recent relevant research.

TPACK was primarily designed for evaluating as well as improving teachers’ capabilities in effectively integrating technology into their teaching practice in different subject areas. The theory underpinning this framework proposes that for effective technology integration, teachers are required to thoroughly understand and be able to negotiate the relationship between three types of knowledge: technology, pedagogy and content (Mishra & Koehler, 2006; Niess, 2008; Schmidt et al., 2009). Mishra and Koehler (2006) argued that this framework addresses the importance of the complexity of the
intersection between these three core components, and the fundamental purpose is to help pre-service teachers to better implement available technology with appropriate pedagogical strategies to enhance their teaching of particular content. The authors define technology to be “both commonplace, like chalkboards, and advanced, such as digital computers”, pedagogy as “the process and practice or methods of teaching and learning”, and content as “the actual subject matter that is to be learned and taught” (p. 1025).

Concurrently, other scholars were also considering such issues in this field and there are many existing frameworks that, despite using different names, expound similar ideas. For example, two commonly used frameworks, enumerated in Schmidt et al.’s. (2009) study are information and communication (ICT)-related PCK (Angeli & Valanides, 2005), and electronic PCK or e-PCK (Franklin, 2004; Irving, 2006). It is evident that, like TPACK, these frameworks were also built on Shulman’s PCK, and the only difference is that ICT-related PCK and e-PCK limit the technology to e-technology whereas the technology in TPACK broadly involves all possible educational technology “ranging from low-tech technologies such as pencil and paper to digital technologies such as the Internet, digital video, interactive whiteboards, and software programs” (Schmidt et al., 2009, p. 125).

The following figure is adapted from Schmidt et al. (2009, p.124), and illustrates well the makeup of TPACK.

![Figure 2.1 The components of the TPACK framework (graphic from http://tpack.org) (Schmidt et al., 2009, p. 124)](http://tpack.org)
As the figure displays, the three central types of knowledge are bigger/broader individually than their areas of intersection. Harris and Hofer (2011) adapt the same figure in their study but add that the figure indicates that all these different areas of knowledge are influenced by various contexts “such as culture, socioeconomic status, and school organizational structures” (p. 213).

Both Mishra and Koehler (2006) and Schmidt et al. (2009) have detailed explicit descriptions of each of the seven knowledge domains. However, because the three knowledge domains, CK, PK, and PCK that are primarily involved in Shulman’s PCK framework deal with teachers’ capabilities without taking e-learning into account, the following discussion will focus on the four knowledge areas TK, TCK, TPK, and TPACK as they involve technology.

2.4.1.1 Technology Knowledge (TK)

The technology in TK is considered to comprise the whole range of educational technology from standard technologies such as pencil, paper, books, chalk and blackboard to the advanced digital technologies such as digital video, Internet, interactive whiteboards and software programs (Mishra & Koehler, 2006; Schmidt et al., 2009). For the purposes of this study, however, the term technology in TK is more narrowly defined to comprise ICT-related digital technologies that involve computer-based and web-based multimedia and communication technologies as well as the more recent interactive mobile computing and podcasting technologies. The technology knowledge mentioned by Mishra and Koehler (2006) included basic knowledge and skills such as the ability to use operating systems, word processors, spreadsheets, browsers, e-mail, or to install and remove peripheral devices or software programs. As the technology environment is constantly and rapidly changing, the authors point out that teachers’ capabilities in adapting to newly invented technology is also important.

2.4.1.2 Technological Content Knowledge (TCK)

Technological Content Knowledge combines teachers’ knowledge of their subject content and their understanding of available technologies (Mishra & Koehler, 2006). Harris and Hofer (2011) propose that teachers’ knowledge lies in knowing and understanding
“how to select technologies that best embody and support particular content-based precepts” (p. 213). More specifically, Schmidt et al. (2009) refer to this type of knowledge as teacher’s ability to select and implement appropriate technology to create new ways of teaching for specific subject content and to “change the way learners practice and understand concepts in a specific content area” (p. 125).

2.4.1.3 Technological Pedagogical Knowledge (TPK)

Technological Pedagogical Knowledge looks for teachers’ abilities in integrating particular technologies to create and apply new teaching approaches. It refers to teachers’ knowledge of “how various technologies can be used in teaching, and to understanding that using technology may change the way teachers teach” (Schmidt et al., 2009, p. 125). Therefore, this type of knowledge involves the understanding of existing technology tools, the ability to select suitable tools and to apply corresponding pedagogical strategies to use these tools in teaching practice, and to be aware of how particular technologies may alter (or enhance) teachers’ teaching approaches (Mishra & Koehler, 2006).

2.4.1.4 Technological Pedagogical Content Knowledge (TPACK)

In summary, Technological Pedagogical Content Knowledge refers to teachers’ understanding of how to appropriately integrate technologies into teaching strategies when teaching specific content-based materials (J. B. Harris & Hofer, 2011). It involves the three basic knowledge domains, TK, PK, and CK, as well as the relationships between them. Mishra and Koehler (2006) proposed that TPACK is more than the ability to use suitable technologies for particular subject content (TCK) and the knowledge of how to use technologies to create new pedagogical approaches (TPK). This model allows this research to study the complexities involved in the understanding of “students’ prior knowledge and theories of epistemology” (p. 1045), what makes it easy or difficult for students to learn, and how to use technology to solve students’ problems. Therefore, in addition to the relationship between technology, pedagogy, and content, TPACK allows this research to study the complex interplay between teachers, students and the three basic knowledge domains (Archambault & Crippen, 2009).
2.4.1.5 Application of TPACK in L2 Teacher Preparation

The TPACK framework is also well suited to evaluating and improving L2 teachers’ capabilities in integrating and applying e-learning in their teaching practice for this study. For instance, in terms of TK, Bateson and Daniels (2012) propose that L2 teachers be required to be knowledgeable enough about the current available technologies for them to be able to decide which e-tools would be suitable and beneficial for assisting L2 education. However, in the modern explosive e-technology learning environment, L2 teachers are expected to not only be familiar with the long established CALL-related and the recently emerged MALL-related technologies, but also have the capabilities to keep up efficiently with the advent of new technology.

However, it is also agreed among researchers that L2 teacher preparation for e-learning should not focus merely on technology alone, because “familiarity with the technology will allow only superficial application and no real integration” (Garrett, 2009a, p. 732). As well as that, second language acquisition (SLA) theory and pedagogy also play an important role in ensuring the rational application of technology. TCK in L2 education could be transformed by integrating available technologies with L2 learning theories (Garrett, 2009a), for instance, by using Web-based technology to enrich the authenticity and cultural context of the teaching materials (Hampel & Stickler, 2005).

Stockwell (2012a) argued, in regard to TPK, that L2 educators’ abilities in providing sound pedagogical designs should be underlined as one key point for effective e-learning application. Similarly, Salaberry (2001) proposed that L2 teachers’ ability to select appropriate technology tools relies greatly on their profound understanding of specific pedagogical objectives. It is interesting, on the other hand, to note that Felix (1999) asserts that L2 teachers’ pedagogy “has been driven largely by technology” (p. 85).

It is clear, then, that for e-learning in L2 teaching and learning to be successful, the ability of L2 educators and teachers to make appropriate decisions in the effective choice and use of technology in carrying out their tasks is crucial. Such decision-making and e-learning application must be based upon their having explored and understood the available e-learning technology (TK) as well as having knowledge in L2 learning theories (TCK) and the ability to design effective pedagogy for e-learning implantation (TPK). These three
essential knowledge domains of TPACK are intertwined and interdependent, and will constantly evolve and change in their relationships with each other along with the development of technology, current pedagogy or existing SLA theory.

2.4.2 Models for E-learning and L2 Teacher Preparation

This section presents two possible models for preparing L2 teachers to cope with the online learning environment. Hampel and Stickler (2005) propose a seven-level skills pyramid, and Compton (2009) reviews this seven-level pyramid framework and provides a reformed framework with three sets of skills, each of which has been divided into three levels.

2.4.2.1 Hampel and Stickler’s Seven-Level Skills Pyramid

Before Mishra and Koehler’s (2006) TPACK model, Hampel and Stickler (2005) proposed a seven-level pyramid model for online language tutor preparation. Hampel and Stickler claim that, up to the date of publication, most of the e-learning relevant research papers were centred on technical skills, and the training of language teachers for adopting e-learning environments has long been overlooked. Hampel and Stickler (2005) contended that, to cope successfully with e-learning environments, L2 teachers are expected to acquire particular skills that are different from those of teaching in traditional face-to-face classroom settings and those of teaching other subjects in e-learning environments. For instance, they submitted that communication in online written conferencing might lack synchronicity, and online audio-conferencing might lack non-verbal interactions (Hampel & Stickler, 2005), both of which are important in L2 teaching and learning. The model provided by Hampel and Stickle (2005):
The skills that are involved in each of the levels are illustrated as follows:

Level 1: **Basic ICT competence**: requires L2 online teachers to be able to use networked computers such as keyboard, mouse, word processing, Internet, and audio replay. These skills are a basic prerequisite for online tutors.

Level 2: **Specific technical competence**: looks for L2 teachers’ capabilities in using specific software for particular courses. The examples given by the authors are educational software such as Blackboard, and audio-graphic conferencing software such as Lyceum.

Level 3: **Awareness of constraints and possibilities**: requires L2 teachers to be aware of the constraints and affordances of the particular technology tools they are using, and to be able to make the best use of these tools.

Level 4: **Online socialization**: emphasizes the importance of online L2 teachers’ capabilities not only to be able to hold students’ attention and maintain discipline as they would in a face-to-face classroom, but also to be able to “create a sense of community, a group feeling or an atmosphere of trust and confidence” (Hampel & Stickler, 2005, p. 318) for the online learning environment.

Level 5: **Facilitating communicative competence**: refers to online L2 teachers’ pedagogical approaches for encouraging students to interact in a virtual online classroom.
Level 6: **Creativity, choice/selection:** deals with teachers’ abilities in making decisions about the selection of appropriate software programs and online materials, and in using them to perform creative virtual classroom activities. It is also suggested that “the most obvious way to display the skill of creativity is in designing online activities with the communicative principles in mind” (Hampel & Stickler, 2005, p. 319).

Level 7: **Development of own style:** after becoming familiar with the teaching medium and acquiring increasing proficiency in lower skill levels, the L2 teachers are expected to become proficient in using the media and materials creatively to develop their personal online teaching style both in the performance of online activities and in communicative teaching practice.

These levels are clearly separated from each other, and follow a fixed sequence from the most general skills (Level 1) to the most specific individual styles (Level 7). In other words, only if the lower level skill is accomplished can the next higher-level skill be carried out. For example, it is recommended that a teacher is able to use specific software only if s/he is familiar with basic ICT skills, or a teacher is capable of developing a personal teaching style only after obtaining the skills to design activities creatively and choose online tools appropriately.

In comparison with Mishra and Koehler’s (2006) TPACK model, this model also includes the essential components of TPACK. For instance, Levels 1 and 2 are dealing with L2 teachers’ TK, Level 3 involves both TCK and TPK, Levels 4 and 5 could equate to TPK, and Levels 6 and 7 involve TPACK as a whole.

### 2.4.2.2 Compton’s reformed model

Compton (2009) examines Hampel and Stickler’s (2005) seven-level model, addresses its limitations, and proposes an alternative model for online teacher preparation. In his study, Compton raises two major arguments against Hampel and Stickler’s (2005) model: the fixed hierarchical order and the exclusivity of the model. He argues firstly that some of the seven skills listed may be related to some of the same issues; they can be
learned at the same time and it is not necessary to follow the order suggested by the pyramid. For example, Level 2, the use of specific software, and Level 3, awareness of constraints and possibilities, are both software program-related issues. These two types of skills can be learned together, or in a reversed order. In other words, it is possible for a teacher to know the constraints of a software program before being familiar with its operation, and to learn how to use it after selecting the program based on the constraints. Hence, not all the skills need necessarily be built up hierarchically and the order of the pyramid could be interchangeable but fixed in terms of levels of teacher proficiency related to the skills. Compton’s second argument is that Hampel and Stickler have proposed a model exclusively for developing language teaching skills using e-learning. He argues that except for Level 5, ‘facilitating communicative competence’ which is particularly relevant to language teaching in e-learning, the other six levels appear to be equally applicable to any other subjects taught in e-learning environments in general. Based on this critique, Compton (2009) proposes a reformed framework with three sets of skills: technological, pedagogical and evaluation. Each of the essential sets of skills contains three levels of expertise: novice, proficient and expert. A brief summary of the reformed model follows.

At the novice level, L2 teachers are expected to be skilled in the use of basic technology such as word processing and the Internet, and are expected to have adequate relevant pedagogical information and knowledge, as well as being able to perform various evaluations of such things as software, tasks, and learner’s performance. At the proficient level, the L2 teacher is expected to be an effective judge of conditions for choosing the most suitable technology from those available, to be able to apply the pedagogical knowledge acquired at the novice level and adapt both language learning theories and course design frameworks for language teaching in e-learning contexts. At the proficient level, the teacher is also expected to be able to evaluate the tasks of language teaching in e-learning by manipulating different frameworks and various strategies. At the expert level, L2 teachers are expected to be competent in the selection, application, and modification of e-learning technology in language teaching, be creative in the application of the pedagogical knowledge, and be able to efficiently apply integrative methods to evaluate frameworks, and use their extensive knowledge to identify the impact on learning
outcomes. Online L2 teachers are also expected to be not just informed about technology, but able to develop in order to become selective as well as creative teachers.
Figure 2.3 Proposed framework for online language teaching skills (Compton, 2009, p. 82)
Compton (2009) further proposes that the three types of skills (technology, pedagogy, and evaluation) can be developed simultaneously. However, the three levels of proficiency (novice, proficient and expert) are required to be followed in a sequence. In other words, within the same level, L2 teachers can learn or improve these three types of skills simultaneously or individually in any order, but one has to first become a novice teacher, then a proficient teacher, and finally an expert teacher.

This section discussed three theoretical frameworks that were designed for enhancing pre-service teachers’ e-learning capabilities. The first model, TPACK (Technological Pedagogical Content Knowledge), which I outlined as a general framework well suited to evaluating and improving L2 teachers’ capabilities in integrating and applying e-learning in their teaching practice for this study. The TPACK framework is also well suited to evaluating and improving L2 teachers’ capabilities in integrating and applying e-learning in their teaching practice for this study. The specific models for evaluating and enhancing e-learning in L2 teacher preparation were then discussed. In particular, Hampel and Stickler’s (2005) Seven-Level Skills Pyramid and a reformed model proposed by Compton (2009), which were designed for online language teacher preparation in particular. There were some limitations. For instance, although Compton (2009) claims that this model is designed especially for online language teacher preparation, I argue that by replacing content knowledge, this model could be equally suitable for online teacher preparation in any other subject area.

2.5 Chapter Summary

This chapter reviewed the literature relevant to my research questions. It began by discussing the notion of curriculum and focused on Billet’s (2006) three conceptions of curriculum as this will be a key concept used in this research. The review discussed the intended curriculum – a goal-directed educational plan (or plans) that involves the intentions (expectations or desired aims) of particular knowledge and skills to be taught or learned, and the learning plan (or plans) designed for achieving the intended goals (or expected outcomes). The enacted curriculum was also explained and refers to the practical action-related process that involves the operation of the intended curriculum, such the
enactments of the intentions, the implementation of the plans, as well as the actual occurrence when the intended curriculum is carried out with real actions. However, much of the relevant literature agrees that there are gaps in the alignment between what is intended or planned to occur and the actual performances of the actors of the curriculum. The *experienced curriculum* focuses on the actual outcomes and experiences resulting from enactments of the intended curriculum. The literature suggests that such curriculum is shaped not only by individuals’ reception of the intended curriculum and the enactment of the enacted curriculum but also has potential influence on the decision-making about the intended curriculum and the performance of the enacted curriculum. In addition, the experienced curriculum could convey unplanned or unintended learning outcomes as suggested by the *whole curriculum, hidden curriculum* and *learned curriculum*.

Furthermore, Cuban’s (1993) proposition of *multiple curricula* asserts that for each of the major stakeholders of a curriculum, such as the educational authorities, the instructors, and the students, there could be different curricula. For example, the official curriculum is mainly led and effected by the educational authorities or powerful parties, such as the government or school boards, the taught curriculum is produced by the instructors, the learned curriculum is focused on the performance of the students and the tested curriculum is implemented by the educational authorities or the instructors for evaluating the students’ learning outcomes or the curriculum efficacy. It is also emphasised by many of the scholars presented above that there are gaps among and between Billett’s (2006) three conceptions of the curriculum and Cuban’s (1993) four types of curricula.

The review then moved to clarify the definition of the term ‘e-learning’, followed by a thorough discussion of its two components, ‘e’ and ‘learning’, and their implications for educational practice. Confusion and disputes over the definition of e-learning were found to have arisen from differences in the use of terminology, differing concepts of what constituted the technology context and different approaches to its educational applications. For the purposes of this study, the ‘e’ in ‘e-learning’ stands specifically for modern educational technologies used for supporting and enhancing learning practice, and e-learning is defined as e-technology-facilitated teaching and learning activities in
synchronous, asynchronous, and/or digital collaborative modes, that can take place offline, online, or a blend of both with the help of electronic and networked ICTs.

In the discussion of the first component of e-learning, ‘e’, I outlined the history of the evolution of mass educational technologies from the earliest mass print era to the latest invention of e-technologies such as mobile technologies. Various descriptions of e-learning technologies from existing published studies were exemplified. E-learning related technologies were broadly divided into three main categories namely: computer-based, web-based, and mobile technologies. These three types of technologies work hand-in-hand to enable all the e-learning practices to occur. Such technologies were also viewed as powerful educational reform tools. However, because e-technologies had not been invented primarily for educational purposes in the first place, a comprehensive understanding of learning theories in relation to e-learning is crucial for the successful integration of e-technology into education.

With regard to the second component of e-learning, ‘learning’, three dominant ‘pre-e-learning’ learning theories from the last century: behaviourism, cognitivism and constructivism, and their implications for e-learning were first discussed. Two learning theory models proposed by Andrews and Haythornthwaite (2007) and Haythornthwaite and Andrews (2011) were proposed as new approaches to learning theories in e-learning. Based upon the literature, this review concluded that, the ‘learning’ in e-learning generally refers to lifelong human activities that involve personal knowledge acquisition and transformation, as well as human communication and interactions that occur not only between individuals but also within and between societies. In other words, social impacts play a crucial role in e-learning practice. Furthermore, the fundamental structure of our society has been significantly altered due to the development of e-technologies and the rapid expansion of online social media.

With regard to the implications of e-learning in educational practice, this review emphasised that e-learning presents a more complex concept than simply ‘e’ plus ‘learning’. It is a combination of all forms of electronic networked communication technologies plus knowledge transmission/building processes. The reviewed literature shows that the evolution of e-learning changes not only our experiences and perspectives of
learning but also our ways of learning. Three main changes in the nature of learning in the era of e-learning suggested in this section are: changes in learners’ autonomy in self-paced and self-directed learning, changes in the hierarchical relationship between the teacher and the student, and changes in the relationship between existing knowledge and the learner. The question of whether new theories of learning are necessary for successful e-learning application was raised in view of the changes in technologies, learning societies, and the nature of learning.

The next section, focused on the concept of second language (L2) learning, which in this research stands for the learning of an additional language other than the learners’ native or primary languages in either native or non-native language learning environments. It includes the conventional meanings of both foreign language learning (FLL) and second language acquisition (SLA). The term teaching Chinese as a second language (TCSL) is defined as meaning teaching Chinese to learners whose first language (L1) is not Chinese whether the learning setting is in a native language environment or not, and, therefore, it covers the general field of both TCSL and TCFL.

With regard to e-learning in TCSL, this review first clarified the term computer-assisted language learning (CALL) that has been commonly used in L2 education as an equivalent term for e-learning. The use of computer (and/or ICT) related technologies for assisting and enhancing L2 teaching and learning can be traced back to the emergence of computer technology in the 1960s. As with e-learning, CALL is a compound term connecting computers (C) with L2 learning (LL). The evolution of CALL has developed in parallel with the development of digital and/or ICT technologies. In the 1960s and 1970s, CALL programs were mostly supported by mainframe computer technologies (e.g. PLATO and TICCIT), in the 1980s by personal computers (e.g. Storyboard and ALLP), and in the 1990s by the multimedia networked computer technologies (e.g. the CAMILLE and OLA). From the early 2000s until now, the emergence of the WWW and the expansion of wireless and mobile technologies spawned the Web 2.0 technology and MALL, which now play a significant role in this field. With respect to TCSL, Chinese CALL was first introduced into this field in the 1970s in the USA. Corresponding to the development of CALL, the use of technology in Chinese CALL has shifted from computer-based to web-based technologies,
to the most recent mobile-based technologies. The reviewed literature suggested that the online CSL learning environment has been transformed and developed significantly in recent years. However, one of the reports presented in this section suggests that both teachers and students were still in need of being taught how to use CALL technologies and many of the digitalised CSL learning materials were not underpinned by appropriate pedagogical concepts. Two other reports argued that although modern technology provides CSL learners with great autonomy in deciding what, how, when, or where they wish to learn, the technology could not be a replacement for teachers in areas such as speaking, writing, and reading.

The review finally discussed models for evaluating pre-service teacher preparation in the field of e-learning and improving. The strengths and limitations of three models for evaluating and enhancing online language teacher preparation were discussed, including TPACK (Technological Pedagogical Content Knowledge), Hampel and Stickler’s (2005) Seven-Level Skills Pyramid and a reformed model proposed by Compton (2009).

Although these three models offer possibilities for understanding e-learning, more expansive research and study that focuses specifically on L2, TCSL and online language teacher preparation is needed. Therefore, the next chapter will focus on the research question and design that will address this gap by specifically researching the e-learning education in a Master’s program in Taiwan.
Chapter 3: THE RESEARCH PROCESS

This research explores the relationship between e-learning and a TCSL Master’s program in Taiwan. An extensive, in depth understanding of such phenomena can be acquired by means of a comprehensive examination/investigation of the major stakeholders’ perspectives on the role of e-learning in TCSL, as well as their intended, enacted and experienced e-learning curricula within the Master’s program.

This chapter focuses on providing a detailed overview of the methodology that was applied to illuminate the role of e-learning in one TCSL master’s program in Taiwan. The chapter will first identify the epistemology and theoretical perspective that underpin the selection of the methodology. The methodology and methods sections present the research questions, describe the methodology governing the methods selection, and detail the selected research methods, both for data gathering and data analysis. A discussion of the criteria for the research evaluation, any ethical concerns in view of human agency, and any limitations and potential problems in the research design will conclude the chapter.

3.1 Epistemology: Constructionism

This research adopted a constructionist epistemology. The literature suggests that epistemology provides the justification not only for the selection of a particular research methodology, such as “the aim, function, and assumptions of method” (Schwandt, 2007, p. 87), but also the kind of knowledge that is believed to be constructed by way of the research design and the process (Hays & Singh, 2012).

Constructionism is best defined in relation to objectivism and subjectivism, the two other important epistemological philosophies that are commonly discussed in relevant literature. Generally, objectivists assert that the ‘objective’ truth and meaning already exist and just need to be discovered, whereas subjectivists hold that “meaning is created out of nothing” (Crotty, 1998, p. 9). In contrast to both these, constructionists believe that meaning is not discovered nor created out of nothing, but constructed (Crotty, 1998; Sarantakos, 2005), which means knowledge and meanings (or meaningful reality) are constructed by us, the human beings, through the practices of interpretation and interaction.
within the world in which we live (Crotty, 1998). Schwandt (2000) echoes this argument stating that constructivism (or constructionism) means that “human beings do not find or discover knowledge so much as we construct or make it” (p. 197). It is also suggested that the transmission and development of human knowledge is not done in isolation but rather it is socially constructed; knowledge is constructed within a social context through such avenues as sharing understanding, practices, and language (Crotty, 1998; Schwandt, 2000).

In relevant literature, the inconsistency in the use of the terms constructionism and constructivism (and, therefore, constructionist and constructivist) often causes confusion. Some scholars tend to use these terms indiscriminately. For example, Schwandt (2000) uses the terms constructivists and constructivism for his discussion of social constructionism with no specific indication of any distinction between the terms, and Denzin and Lincoln (1994) as well as Guba and Lincoln (2005) have equated constructivist to constructionist as shown in their writing, for example, “the constructionist (and constructivist) position tells us” (p. 353) and “the meaning-making activities themselves are of central interest to social constructionists/ constructivists” (p. 197). However, other scholars make a distinction between constructivism and constructionism, either from the view of natural science versus social science, or based upon their standpoint of psychological form versus social form. For instance, citing Giddens and Blaikie, Crotty (1998) relates constructivist to the natural scientist and constructionist to the social scientist. He further argues that constructivists regard human knowledge development or construction as occurring through scientific approaches within the natural world, whereas constructionists relate such ‘knowledge-making’ processes mainly to the interpretation of the social world. From a different perspective, Schwandt (2000) cites Phillips who divides constructivists into two groups of scientists namely, psychological constructivists and social constructivists, and Gergen (cited in Schwandt) calls the former group scientist constructivists and the latter constructionists. Schwandt (2000) similarly states that, “I use the terms constructionist and constructionism here in discussing the “social” end of the continuum” (p. 208). Consequently, based upon epistemological considerations, Crotty (1998) suggests that, in view of ‘meaning-making’, constructivism focuses exclusively on the activity of the
individual mind (the psychological forms) whereas constructionism involves the processes of meaning collection, generation, and transmission (the social forms).

Hence, the term constructionism (or constructionist) is used in this research because it lays emphasis primarily on social science rather than natural science or human psychology. A key implication of such an epistemological stance is that knowledge construction activities are performed by individuals and groups within social phenomena (Guba & Lincoln, 2005), and the ways of constructing knowledge may vary from individual to individual even within the same social phenomena (Crotty, 1998). The selection of methodology and, therefore, the methods of this research are justified based on such assumptions.

3.2 Theoretical Perspective: Interpretivism

The theoretical perspective (referred to as the interpretive paradigm by Denzin and Lincoln, 2008) could be defined as “the philosophical stance informing the methodology and thus providing a context for the process and grounding its logic and criteria.” (Crotty, 1998, p. 3). The philosophical doctrines that are commonly suggested as possible theoretical perspectives are positivism, post-positivism, interpretivism, critical inquiry, and feminism (Crotty, 1998; N. K. Denzin & Lincoln, 2008). Other doctrines such as postmodernism (Crotty, 1998), racialised discourses, cultural studies models and queer theory (N. K. Denzin & Lincoln, 2008) are also regarded as theoretical perspectives in the field of social research.

Among the doctrines listed above, the methodology employed in this research, qualitative case study, is underpinned by an interpretivist theoretical perspective. Historically, the emergence of interpretivism occurred around the late 19\textsuperscript{th} and early 20\textsuperscript{th} centuries and the philosophy of interpretivism is considered to have originated in human and social sciences (Crotty, 1998; Schwandt, 2000). According to (Crotty, 1998) the Neo-Kantian philosophers Wilhelm Windelband (1848-1915) and Heinrich Rickert (1863-1936), and the social scientists Max Weber (1864-1920) and Wilhelm Dilthey (1833-1911) are regarded as representative interpretivists of that period.
Lichtman (2006) defines interpretivism as “a theory or philosophical doctrine that emphasizes analysing meanings people confer on their own actions” (p. 219). Within such a philosophy, Verstehen (understanding) is regarded as the essential means of approaching interpretivism. Crotty (1998) stated that ‘in the human sciences we are concerned with Verstehen (understanding) (p. 67) and Schwandt (2000) proposed that “interpretivism assumes an epistemological understanding of understanding (Verstehen)” (Schwandt, 2000, pp. 193-194), and that such a way of understanding (Verstehen) is believed to be an intellectual process that enables a subject, such as knower, learner or inquirer, to obtain knowledge about an object or “the meaning of human action” (p. 194). Schwandt (2007) further suggested that, “the meaning of human action is inherent in that action” (p. 160). Interpretivism designates social study approaches, and Verstehen functions as the key method that enables the inquirer to pursue their mission to reveal the inherent meaning of the human action (Schwandt, 2007). As viewing human social action is inherently meaningful, interpretivism underlines the importance of seizing the meanings lying behind the action so as to explore more thoroughly an understanding of one specific social action, and the interpreter, according to Schwandt (2000, p. 194), remains “unaffected by and external to the interpretive process”.

Consistent with this philosophical stance, interpreting the embodied meanings that lie behind the participants’ words as well as their correlated actions is one of the most important processes in this research design. The researcher plays the role of interpreter and is interested in the subjective meanings – “the meanings directed toward certain objects or things” (Creswell, 2009, p. 8). The subjective meanings involve participants’ views, opinions, and perceptions in relation to the matters being studied; they are expected to be multiple and complex, and to vary from individual to individual. Thematic analysis (described in the methods section) was the data analysis method used to examine and interpret the information gathered from the participants in order to develop conclusions. The researcher was also aware that the researcher’s personal background and experiences have potential impacts on the interpretation process (Creswell, 2009). Many different qualitative methodologies are associated with an interpretive theoretical perspective,
including case study methodology used to frame and answer the research questions in this study.

3.3 Methodology

The primary purpose of this section is to discuss the selection of the qualitative case study methodology employed in this research. Methodology can be regarded as a bridge that links the philosophy of social science with practical research methods (Krauss, 2005; Trochim, 2001). It is “a way of thinking and studying social reality” (Strauss & Corbin, 1998, p. 3) that involves research strategies (plans of actions) as to how designated methods are chosen, as well as how particular forms of these methods are applied for carrying out desired research outcomes (Crotty, 1998). In other words, it is a philosophy of science that focuses on advancing a social science inquiry by articulating the investigated problems, the design of the research procedures, the judgment of research legitimacy and generalization, and the development of “problem-data generation-analysis-argument” (Schwandt, 2007, p. 193). Hence, besides the selection and implementation of research strategies, methodology necessarily also encompasses the research questions (Creswell, 2007).

3.3.1 Research Questions

The function of research questions in a methodology is to transform the central ideas of the problems or issues to be studied into a researchable form by asking questions in the field (Cheek, 2000; Clough & Nutbrown, 2007). Following Creswell’s (1998) ideas, the research questions of this research are carefully formulated to be “open-ended, evolving, and non-directional” (p. 99), opening with words such as “how” and “what” rather than “why”. In terms of the number of the questions, this research is guided by one primary research question supported by four secondary research questions. This conforms with Creswell’s (1998) suggestion that “a researcher [should] reduce her or his entire study to a single, overarching question and several sub-questions” (p. 99).

The primary research question that guides the research is: “How did the major stakeholders of the case study conceive of the role of e-learning education in a TCSL Master’s program in Taiwan?” The secondary research questions that support the primary research question are:
1. How did the major stakeholders perceive the role of e-learning in TCSL?
2. What intentions and/or expectations did the major stakeholders have in relation to e-learning in the TCSL Master’s program?
3. How did the major stakeholders enact their expectations in relation to e-learning in the TCSL Master’s program?
4. What did the major stakeholders experience in relation to e-learning in the TCSL Master’s program?

3.3.2 Qualitative Paradigm

Case study methodology is an example of qualitative research. Qualitative research focuses on answering the questions of natural social contexts that are socially constructed. The word *qualitative* in social science research lays stress on meanings and process, as distinct from *quantitative* that emphasizes experimentally examinable or measureable entities such as amount, intensity, or frequency (N. K. Denzin & Lincoln, 2008). For the purposes of this research, qualitative research could be defined as “a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem” (Creswell, 2009, p. 232), that is to profoundly understand and interpret the inner meaning behind what people are saying or doing (Schwandt, 2000). According to influential scholars such as Corbin and Strauss (2008), Creswell (2009), Denzin & Lincoln (2008), and Merriam (Merriam, 1998, 2002), qualitative research procedures involve collecting data from informants in a natural setting (fieldwork) through interviews, observations, or document surveys; analysing the collected data inductively; constructing general themes from particular words and actions; interpreting the meaning of the collected data; and descriptively reporting the findings. In this research process, researchers play a role as the primary instrument of data collection and analysis, as they seek to understand how social experience and knowledge are constructed as well as how meaning could be assigned to people’s words and actions by implementing these procedures.

3.3.3 A Case Study Approach

This research applies a qualitative case study methodology that allows the researcher to study particular social phenomena through accessing information provided by different
groups of individuals within one learning community, in this case, a TCSL Master’s program. Stake (1995) defines case study as “the study of the particularity and complexity of a single case, coming to understand its activity within important circumstances” (p. xi) and Creswell (2009) explained that “case studies are a strategy of inquiry in which the researcher explores in depth a program, event, activity, processes, or one or more individuals” (p. 13). It is commonly agreed that such a strategy of inquiry enables researchers to use a wide range of data collection techniques to profoundly explore or examine time- and activity-bound phenomena (e.g., Baxter & Jack, 2008; Merriam, 1998; Stake, 1995; Swanborn, 2010; Yin, 2009). One more reason that this study chose case study as the research methodology was because “Case studies are of value in refining theory, suggesting complexities for further investigation as well as helping to establish the limits of generalizability” (Stake, 2008, p. 141). Case study methodology is consistent with a constructivist epistemological stance (Baxter & Jack, 2008). When based on a constructionist epistemology, the knowledge built in the case study approach is based on the collaboration as well as interrelation between the researcher, the participants (in this case, the administrators, instructors, and students from the researched TCSL Master’s program) and the particular field studied (in this case, e-learning in TCSL teacher preparation programs).

This particular research could be classified as an instrumental case study with an embedded single-case design. Stake (1995) introduced three types of case study, intrinsic, instrumental and collective, based upon researchers’ special interests in the case studied. In contrast with an intrinsic case study, in which the particular case itself is the primary interest of the researcher, a case study is instrumental if it is studied with the purpose of improving understanding of something other than the case itself. “For instrumental case study, issue is dominant; we start and end with issues dominant” (Stake, 1995, p. 16).

The case selected for this study is considered instrumental because the ultimate goal of this research is to help pre-service teachers to develop their capability successfully adopt and adapt such constantly changing e-learning environments and to effectively integrate e-learning knowledge and skills into their future teaching. The selected case, the TCSL Master’s program in Taiwan, is, therefore, of secondary rather than primary interest in this
research. It plays a supportive role (Thomas, 2011), and it is believed that an intensive investigation of e-learning education within the Master’s program will provide crucial information and knowledge for achieving the research objectives.

Yin (2009) also proposed several different types of case study paradigm. Type 1 and 2 are single-case designs (as Type 1 is holistic and Type 2 is embedded) and Type 3 and 4 are multiple-case designs (as Type 3 is holistic and Type 4 is embedded). This research could be classified as Yin’s Type 2 case study paradigm as it involves one graduate institute (as a single case) with different groups of samples (as embedded subunits). There are three subunit levels involved in this research design. The first level is the TCSL Master’s program, which is the main unit as a whole; the second level includes three groups: group 1 are the administrators (coded as A), group 2 the instructors (coded as I), and group 3 the Master’s students (coded as S). Group 3, the Master’s student group, is further divided into three sub-groups: recent graduates of the Master’s program (S1), the graduate students in their last semesters of the program (S2), and the graduate students in their first or second year of study (S3). Baxter and Jack (2008) suggest that this method of examining sub-units within a main unit is powerful because such a design not only enables in depth analysis within subunits individually, but also provides extended data examination between as well across subunits. Similarly, Yin (2009) commented that “the subunits can often add significant opportunities for extensive analysis, enhancing the insights into the single case” (p. 53).

The following sections describe the methods used to collect and then analyse data from this qualitative, instrumental, embedded single-case case study.

3.4 Research Methods

Schwandt (2007) describes research methods as “the set of investigative procedures used within a particular field of study or discipline” (p. 190). Crotty (1998) and Strauss and Corbin (1998) suggest that such sets of procedures involve the techniques and processes for systematic data collection and data analysis for solving particular research inquiries. The researcher plays the role as the major instrument, learning the meaning of the problems or issues via translating and examining participants’ words and actions (Corbin & Strauss,
2008; Creswell, 2009; Merriam, 1998). The purpose of this methods subsection is to present how, in the current research study, the research participants were recruited and how the various techniques and processes were applied in conducting data collection and data analysis.

3.4.1 Context and Participants

The context was a well-regarded institute exclusively teaching a TCSL Master’s program in Taiwan. This institute was chosen because it had a well-developed TCSL Master’s program. At the time of the study, the program recruited about 30-40 Master’s students per year; around 20 of them were domestic students and around 10 of them were from overseas (information obtained from the Institute’s website).

I negotiated my entry into the chosen graduate institute through its directors. It took several emails, discussions over the telephone, and meetings in person with the present director and a former director of the Institute, to obtain permission to conduct my research at the Institute. After that I began to recruit my participants.

Both purposeful and snowball sampling were used. “[P]urposeful sampling is based on the assumption that the investigator wants to discover, understand, and gain insight and therefore must select a sample from which the most can be learned” (Merriam, 1998, p. 61). It was used because, according to Creswell (2009) and Merriam (1998), it is the most appropriate and typically used data collection technique for qualitative approaches. To avoid institutional bias and ensure anonymity, the participants were chosen by the researcher rather than appointed by the Institute.

Purposeful sampling was combined with snowball sampling (“snowball, chain, or network sampling,” (Merriam, 1998, p.63). “Snowball sampling is the process of selecting a sample using networks. … this sampling technique is useful if you know little about the group or organization you wish to study as you need only to make contact with a few individuals, who can then direct you to the other members of the group” (Kumar, 2005). In this study, contact was made with potential participants using such networking processes. For example, A_1 mentioned some instructors who had been involving in an e-learning related training project and I_1 mentioned a graduate student she had supervised who had
been a teaching assistant for a distance learning program for two years and had just finished her research based on that project.

As a result of these recruitment processes, the participants involved in the case study were: two administrators (one present and one former director), four instructors (from an overall instructor cohort of approximately 11) of whom two had more experience in e-learning related courses, and two had less, and 11 graduate students (from a total student cohort of about 100). The students formed three sub-groups with two recent graduates from the program working in the TCSL field, four students in their last semester, and five in their first or second year. The Master’s program normally takes at least three years to complete.

I sent each potential interviewee an email with a Plain Language Statement and a Consent Form. As well, to optimize the results of the interviews, before actual interviews were carried out, the basic interview outline with guiding questions was provided to the participants so that they could have a chance to clarify the questions and have some time to consider their responses.

3.4.2 Data Collection

Interviews and a background document survey were the two major procedures for collecting data in this study.

3.4.2.1 Interviews

Because the kind of information needed was in depth information about the perspective of the participants, interviews were considered the most appropriate way to collect data for this study (cf. Merriam, 1998). Interviews are major data sources for case study approaches (Creswell, 2009; Mann, 2006; Stake, 1995) and semi-structured interviews with small numbers of focused, open-ended questions are recommended when the researcher intends to obtain comments and opinions about particular events from the participant (Creswell, 2009; Mann, 2006; Merriam, 1998; Yin, 2009). The advantage of open-ended questions, according to Patton (2002) is that typical responses to these “permit one to understand the world as seen by the respondents. The purpose . . . is to enable the researcher to understand and capture the points of view of other people without
predetermining those points of view through prior selections of questionnaire categories” (Patton, 2002, p. 21).

In this study, semi-structured, face-to-face, in-person, audio-recorded interviews were conducted for collecting detailed and descriptive information about participants’ perceptions, perspectives, attitudes, experiences and opinions in relation to e-learning in TCSL practice in general, as well as about the Master’s program itself. The interviews were conducted with the three groups of participants (as indicated in the above section on recruitment of participants): administrators, instructors, and students, selected by the researcher from the investigated graduate institute. An interview was conducted with each of the participants, with each interview taking from 45 minutes to an hour. The semi-structured interviews were carried out in a conversational manner to create an atmosphere of ease for interviewees. After some initial questions to elicit relevant demographic data, focused open-ended questions that centred on the key terms in the research questions were used. Open-end guiding questions were expected to elicit rich information by allowing for follow-up questions and receiving participants’ spontaneous replies.

The semi-structured interviews were tape recorded with the prior consent of the participants, and verbatim transcriptions were produced. Before they were used for data analysis, individual transcripts of the interviews were sent to the interviewees for confirmation of validity. Interviewees were invited to make any changes they considered necessary.

3.4.2.2. Background Document Survey

A background document survey was used to support and corroborate information gained from the interviews and provide additional understanding of current phenomenon of e-learning in TCSL teacher training in Taiwan (cf. Yin, 2009). As well as surveying documents from the selected institute, it surveyed relevant documents from the associated government ministry in relation to TCSL programs. The focus was on these two organizations’ existing policies, the possible influencing factors (e.g. political, educational, social, economic, cultural, etc.) of policy decision-making, and the infrastructure support in relation to e-learning in TCSL teacher training. Besides archives, the Web was the major
resource for collecting both public and private document data via the Ministry and the Institute’s web-pages, e-journals, and some instructors’ personal blogs. It included Ministry of Education reports relating to national educational issues, particularly statistical data about overseas TCSL students and TCSL teacher e-learning training programs. The Institute website provided program objectives, e-learning related activities, student performances, research projects and achievements, and bulletin board e-learning related activities and discussion.

3.4.3 Data Analysis

The main purpose of data analysis is to interpret the deeper meaning of collected information by breaking the data down into pieces, examining each piece separately, classifying each piece, understanding the possible relationship between the pieces, re-gathering them with logical reasoning, seeking out the greater meaning of the information, and, hopefully, answering the research questions (Corbin & Strauss, 2008; Creswell, 2009; Stake, 1995). The method of analysis used in this research to analyse the interview transcripts was thematic analysis (Schwandt, 2007). It is an “exploratory approach [in which] the analyst “codes (e.g. marks or indexes) sections of a text (e.g. a transcript, field notes, and documents) according to whether they appear to contribute to emerging themes” (Schwandt, 2007, p. 291). A grounded theory approach was used to the extent that a theory of meaning in the context was extracted from the data, using “the constant comparative method of data analysis” (Merriam, 1998, p. 179). Creswell (2009) proposes that data analysis involves preparing data, conducting analyses in order to lead to understanding of the data, data representation, and data interpretation. The data analysis procedure used in this case mainly followed the process suggested by Corbin and Strauss (2008), and Creswell (2009). The process was as follows: 1) organizing and preparing the data for analysis, 2) familiarizing myself with the material before analysing, 3) using coding techniques to code the data, 4) generalizing the codes into categories (or themes), 5) presenting the results with auxiliary aids such as tables, and, finally, 6) interpreting the overall meaning of the data. Every attempt was made to be faithful to the participants’ true voices during the interpretation of the data, for example, by identifying and using
quotations from the participants’ words. No answers were proposed before the analysis. A record of the chain of evidence was kept as an audit trail of the analysis process and to track the researcher’s decision-making.

3.4.3.1. Data preparation

My first task in data preparation was to transcribe the data collected from the interviews, firstly in Chinese in Word document format with wide margins down either side for future analysis. A second task was to find the appropriate software for data analysis. I initially tried using Microsoft Word tables but it quickly became too complicated such that it was difficult to visualise the data as a whole. I then tried using NVivo, before investigating the possibilities of Microsoft Excel and deciding that the latter was the most useful software for handling my developing codes, categories and associated data in a manageable way.

3.4.3.2. Material Familiarization

Before analysing, I read and re-read the material carefully and thoroughly from the beginning of the first transcript to the end of the last until I obtained a general and complete sense of the material. Corbin and Strauss (2008) suggest that the purpose of such a reading is to “enter vicariously into the life of participants, feel what they are experiencing and listen to what they are telling us” (p. 163). Ritchie and Spencer (2002) suggest that during this stage “the analyst listens to and reads through the material, listing key ideas and recurrent themes” (p. 131).

3.4.3.3. Coding

The following stage involved coding, which was more formal and systematic, first identifying key ideas, initially line-by-line, then more broadly as patterns began to emerge, using the constant comparative approach. The research adopted a “data driven” coding approach at this stage (cf. Boyatzis, 1998). As Merriam (2002) states, “data analysis is essentially an inductive [emphasis in the original] strategy. One begins with a unit of data (any meaningful word, phrase, narrative, etc.) and compares it to another unit of data, and so on, all the while looking for common patterns across the data. These patterns are given
names (codes) and refined and adjusted as the analysis proceeds” (Merriam, 2002, p. 14). In an earlier work, he explains the constant comparative approach, commonly used by qualitative researchers regardless of whether they are doing grounded research or not, as “comparing one segment of data with another to determine similarities and differences” (Merriam, 2002, p. 18). This coding may be at an information level initially but one is aiming eventually for “interpretive constructs related to analysis” (Merriam, 1998, p. 164) which will inform the development of theory (Strauss & Corbin, 1998) and provide answers to the research questions (Merriam, 1998). While earlier stages involve creating each code, later stages involve “validating and using the code” (Boyatzis, 1998, p. 29).

The coding process began soon after the first interview was transcribed. The initial coding sought to identify obvious ideas in the data. Units (usually sentences) of transcript material were examined and labelled. Descriptive in-vivo terms, the words actually used by the participants (Corbin & Strauss, 2008; Creswell, 2009), were the first considered names of codes. The initial coding was rechecked for consistency, and re-coding (alteration or addition) was done whenever necessary.

Follow-up detailed coding was applied repeatedly until the researcher felt there was no further alteration to be made. The result of the first coding process served as a foundation for later data collection and analysis (Corbin, 2008). Constant comparisons of differences, similarities, consistencies, inconsistencies were performed throughout the whole coding processes. The coding process was repeated until the data collected were rich enough to firmly justify the categories, and no changes of categories were needed.

A codebook was created for keeping the records and results of the coding process. A table was used with the names of codes in the leftmost column in alphabetical order, correlated definitions in the next column, and examples (instances) from the transcript in the rightmost column.

3.4.3.4. Generalisation of Codes into Categories

I then moved from coding to categorising, which Brott and Myers (2002) define as “grouping the code words around a particular concept in the data” in order to reduce the number of code words involved (p. 149). The purpose of such coding, in the terms of
Strauss and Corbin (1998) was to “[b]e systematic and creative simultaneously”, while dealing with large amounts of data and aiming to “identify, develop, and relate the concepts that are the building blocks of theory” (p. 13).

After coding, Excel’s sorting function was used to group the same codes together. Later processes included naming and renaming, and defining and redefining categories and subcategories. When determining overarching categories, I took a more research-driven approach (cf. Boyatzis, 1998) to initially specify five categories, which corresponded with themes in the literature review and my research questions. Three further categories were added to cover any data not covered by the first five. In addition I numbered and colour-coded relevant quotations for ease of reference (see Table 3.1).

Table 3.1 Initial overarching categories used to cover all coding

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<table>
<thead>
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<tbody>
<tr>
<td>1</td>
<td>intended curriculum</td>
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<td>2</td>
<td>enacted curriculum</td>
</tr>
<tr>
<td>3</td>
<td>experienced curriculum</td>
</tr>
<tr>
<td>4</td>
<td>e-learning and L2L</td>
</tr>
<tr>
<td>5</td>
<td>e-learning and CSL</td>
</tr>
<tr>
<td>6</td>
<td>profile (the participant’s background in relation to education and e-learning related experiences)</td>
</tr>
<tr>
<td>7</td>
<td>undecided (for the data that might be useful or relevant but not sure where to place them at the moment)</td>
</tr>
<tr>
<td>8</td>
<td>others (the data that is likely not to be useful for the analysis at the moment)</td>
</tr>
</tbody>
</table>

As mentioned above, categories and possible sub-categories were constructed during the coding process. When composing the categories, the codes were displayed plainly with no transcript alongside so that the similarities and differences among the codes would be revealed. The codes sharing common properties were grouped into a dominant category. It was anticipated that five to seven major categories (as suggested by Creswell, 2009) would be formed during the process. The interrelationships between categories and subcategories would be identified at this stage. The central and guiding questions were always kept in mind so as to prevent a loss of focus and to keep the analysis on the right track.
3.4.3.5. Presentation

Visual displays such as matrices, concept maps and spreadsheets were used to display the results of coding and categorization. The categories and subcategories as well as the discussion of their interrelationships were displayed with corresponding explanations and quotations. Parallel English translation of the displayed materials was presented at this stage.

3.4.3.6. Interpretation

After the results of coding and categorization were firmly justified and displayed, the researcher was able to interpret the collected data sets logically and describe the case in depth. The interpretation was expected to illustrate the researcher’s impressions of the data and understanding of the investigated phenomena, provide answers to the research questions, suggest findings that either conformed to or varied from the findings in the literature, raise unforeseen questions revealed during the data analysis processes, and/or recommend possible reformation and changes to the existing system (cf. Corbin, 2008; Creswell, 2009; Stake, 1995).

To summarise my method of data analysis, thematic analysis was the main approach used to analyse the data collected from interviews. It comprised six stages, beginning with raw data and finishing with findings addressing the research questions: data preparation, familiarization, coding, categorization, presentation and interpretation.

3.5 Research Evaluation

In this section, I will draw attention to the main efforts made to ensure the trustworthiness of both my research processes and the findings I will present, particularly with regard to three of the criteria for research evaluation cited by Guba and Lincoln (1989): credibility, transferability and confirmability.

3.5.1 Credibility

Struass and Corbin (1990) outline that “the credibility of the study [is] judged by both the adequacy of the research process and the adequacy of the empirical grounding of the
research findings (p. 149-50). According to Guba and Lincoln (1989) credibility is enhanced by strategies such as triangulation, peer debriefing and member checking.

Triangulation of data sources was possible in this study, at least for reports of factual information such as the content of the program, given that participants from many different levels of the institute were interviewed. The background document survey also allowed triangulation in regard to broader contextual data. Peer debriefing included ongoing discussion with my supervisors about most aspects of the research, discussion with fellow research students in the context of a research writing group and regular presentations at student research conferences. These all meant that developing theories were openly tested. Member checking was carried out as mentioned above in the description of the interview process.

Credibility also depends on the quality of the data collection processes. Negotiation of entry and the interview processes used allowed interviewees to have high confidence in promises of confidentiality and research integrity (see examples of the plain language statement and the consent form in the appendices for the conditions of the research, which included informed consent, voluntary participation and right to withdraw, privacy and anonymity of reporting). Care was also taken to develop rapport and make the goals of the research interview clear.

3.5.2. Transferability

While generalizability is not expected from a case study, the scope and depth of the findings will allow some transferability to contexts other than the research context.

3.5.3. Confirmability

An audit trail was kept of data collection and data analysis processes to allow easy reference and checking. Interviews were recorded and transcribed and then stored for safe keeping, where they will remain for five years, transcript quotes were transferred directly into Excel for thematic analysis and then copies kept of each stage of data coding and categorization.
3.6 Ethical Considerations

I have paid attention to ethical issues throughout the PhD from the proposal stage (see Appendix A for ethical approval by RMIT CHEAN 2000440-2/11), through recruiting of participants and data collection, to data analysis and reporting. Participation in the research was voluntary and the following steps were taken to ensure that participants were aware of this. Firstly, there was an absence of dependence between the researcher and prospective participants; the researcher was not a staff member of the graduate institute investigated and, therefore, had no power over the prospective participants. Secondly, the participants were chosen by the researcher rather than appointed by the graduate institute to ensure that there would be no undue influence from the institute. Finally, the interviews were conducted only where consent from the participant was obtained. In other words, only where the participant fully understood the aims of the research and what s/he was expected to do, and agreed to take part in the research, was an interview carried out.

The conduct of the research did not interfere with the instructors’ teaching and students’ learning commitments since the researcher and interviewees were able to arrange their interview meetings with a high range of flexibility in terms of time and space, all outside of institute class time.

All records of the interviews conducted are kept in a way that helps preserve privacy and confidentiality. All recorded audio files, notes, transcripts, and data will be stored securely in researcher’s personal computer hard drive and/or a locked cabinet in her principal supervisor’s office, and will be destroyed five years later after completion of the thesis. Only the researcher and her supervisors will have access to the data. Data will only be used for the purposes described in the participant information sheet. All responses will be kept confidential and the participants will remain anonymous.

3.7 Limitations

All research approaches have limitations that should be acknowledged. Case study methodology is most appropriate when in depth study of perceptions and experiences of participants is required. However, the findings in this study are those of a particular TCSL program at a particular place and at a particular point in time, and, while generalizability is
certainly not a realizable goal, a certain amount of transferability can be expected. The findings will be of interest to anyone invested in the role of e-learning in TCSL programs elsewhere in Taiwan, in other Chinese-speaking countries and any countries around the world where Chinese is taught and teachers trained to teach Chinese as a second language. Different aspects of the research are expected to interest different researchers, instructors, administrators and students.

A limitation of the research approach is that interviews are reports of participants’ perspectives and not direct evidence of behaviour. However, when it is stakeholders’ perspectives that are of interest rather than their behaviour, interviewing is the most effective research method. In addition, where there are many groups of stakeholders interviewed about the same issues and practices, one can achieve some degree of triangulation about the practices referred to by all participants.

Finally, as Merriam (1998) wrote, “[Q]ualitative case studies are limited, too by the sensitivity and integrity of the investigator. The researcher is the primary instrument of data collection and analysis” (p. 217). The findings are the interpretation of the researcher, offered with as much supporting evidence as possible for any assertions made, but not making any claim to absolute truth.

3.8 Chapter Summary

This chapter has introduced the research methodology (qualitative case study methodology) and methods of both data collection (semi-structured interviews and a background document survey) and data analysis (thematic analysis), after first explaining the underlying epistemology (constructionism) and the theoretical perspective (interpretivism). The chapter concluded with a short discussion of the criteria for evaluating the trustworthiness of the research and the main research limitations.

The following chapter will present my findings regarding the role of e-learning in a TCSL program after first presenting demographic data which may be relevant to the other findings.
Chapter 4: FINDINGS

The purpose of this chapter is to present the research findings arising from an analysis and interpretation of the data obtained from interviews with the major stakeholders (administrators, instructors and students) and a background document survey. This will enable the researcher to address the study’s primary research question: “How do the major stakeholders in the case study conceive of the role of e-learning education in a TCSL Master’s programs in Taiwan?” As a means of doing this, the structure for the chapter derives from considering each of the four secondary research questions individually:

1. How did these major stakeholders perceive the role of e-learning in TCSL?
2. What intentions and/or expectations did these major stakeholders have in relation to e-learning in the TCSL Master’s program?
3. How did these major stakeholders enact their expectations in relation to e-learning in the TCSL Master’s program?
4. What did these major stakeholders experience in relation to e-learning in a TCSL Master’s program?

Prior to looking specifically at these questions, the chapter begins with an examination of the participants’ demographic data.

4.1 Participants’ Demographic Data

This section presents essential information on the participants’ background. The participants are grouped into three main categories: administrators, instructors, and students. To assist the discussion, five tables are presented. Table 4.1 relates to the administrators, Table 4.2 the instructors, and Tables 4.3, 4.4 and 4.5 relate to three student subgroups. The demographic data were collected from interview transcripts as well as participants’ online personal homepage profiles.

4.1.1 Administrators’ Background

The table below lists the two administrators’ demographic data with respect to their gender, age, nationality, language and educational background, academic title, years of
service in the Graduate Institute as well as director of the Master’s program, TCSL\(^1\) experience, research profile relating to e-learning, and specific e-learning courses they had taught. The two participants were anonymously coded as A_1 and A_2.

**Table 4.1 Characteristics of administrators**

<table>
<thead>
<tr>
<th>Code</th>
<th>A_1</th>
<th>A_2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>56-60</td>
<td>46-50</td>
</tr>
<tr>
<td><strong>Nationality</strong></td>
<td>Taiwanese</td>
<td>Taiwanese</td>
</tr>
<tr>
<td><strong>Language background</strong></td>
<td>L1(^2): Chinese</td>
<td>L1: Chinese</td>
</tr>
<tr>
<td></td>
<td>L2(^3): English</td>
<td>L2: English</td>
</tr>
<tr>
<td><strong>Educational background</strong></td>
<td>• PhD (USA): Instructional Systems Technology</td>
<td>• PhD (USA): Linguistics</td>
</tr>
<tr>
<td></td>
<td>• MSc (USA): Instructional Systems Technology</td>
<td>• MA (USA): Linguistics</td>
</tr>
<tr>
<td></td>
<td>• BA (Taiwan): Chinese Literature and Language</td>
<td>• BA (Taiwan): Foreign Languages and Literature</td>
</tr>
<tr>
<td><strong>Title</strong></td>
<td>Professor</td>
<td>Professor</td>
</tr>
<tr>
<td><strong>Yrs of service in the Graduate Institute</strong></td>
<td>16 years (1995 - present)</td>
<td>15 years (1996 - present)</td>
</tr>
<tr>
<td><strong>Yrs as director of the Master’s Program</strong></td>
<td>7 years</td>
<td>4 years</td>
</tr>
<tr>
<td><strong>TCSL experience</strong></td>
<td>One year in a university in USA</td>
<td>Short-term tutoring for American-born Chinese in USA</td>
</tr>
<tr>
<td><strong>Research profile relating to e-learning</strong></td>
<td>• Computer assisted language instruction</td>
<td>• Mobile Webpage learning in Traditional Chinese Character Recognition</td>
</tr>
<tr>
<td></td>
<td>• Distance Chinese Instruction via Videoconferencing and computer network</td>
<td>• E-learning and Online Testing in CSL(^4) Phonetic Study</td>
</tr>
<tr>
<td><strong>Specific e-learning courses taught</strong></td>
<td>• Computer-Assisted Language Instruction</td>
<td>• Information Processing in Chinese</td>
</tr>
<tr>
<td></td>
<td>• Information Processing in Chinese</td>
<td></td>
</tr>
</tbody>
</table>

---

\(^1\) TCSL: acronym for teaching Chinese as a second language

\(^2\) L1: first language; the first language that we acquired when we were children. Its synonyms include native language (NL), primary language, or the mother tongue (Gass & Selinker, 2001)

\(^3\) L2: second language; additional language that we learn subsequent to the acquisition of L1

\(^4\) CSL: Chinese as a second language
The two administrators (one male, A_1 and one female, A_2) from the Graduate Institute of the university were interviewed. Both were middle aged and had earned their PhD degrees in the United States. Both also had full professorial titles, and had served long terms (16 years and 15 years respectively) in the Graduate Institute of their university. A_1 had been director of the Master Program for 7 years and A_2 (who succeeded him) for 4 years. Neither of them lacked experience in the role, thus enhancing their credibility with respect to the information they provided. A_1 continued to work in the Master’s program after stepping down as director.

Although they had different majors in their PhD studies (A_1 in Instructional Systems Technology and A_2 in Linguistics), they both had an involvement in the field of e-learning. In addition to having engaged in research into e-learning, A_1 had also taught specific e-learning courses. A_2, on the other hand, although having engaged in research in the field, and used e-learning within her teaching, had not taught any specific e-learning courses. With respect to TCSL experience, A_1 had one year of formal teaching experience in a university in the United States, whilst A_2’s experience was considerably less, consisting of some informal, short-term teaching.

4.1.2 Instructors’ Background

The following table displays the demographic data for the four instructors (from an overall instructor cohort of approximately 11) who taught in the Master’s program. The four instructor participants were anonymously coded as I_1, I_2, I_3, and I_4.
Table 4.2 Characteristics of instructors

<table>
<thead>
<tr>
<th>Code</th>
<th>L_1</th>
<th>L_2</th>
<th>L_3</th>
<th>L_4</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender</td>
<td>Age</td>
<td>Nationality</td>
<td>Language background</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>36-40</td>
<td>Taiwanese</td>
<td>L1:Chinese, L2:English</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>41-45</td>
<td>Taiwanese</td>
<td>L1:Chinese, L2:English</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>41-45</td>
<td>Taiwanese</td>
<td>L1:Chinese, L2:English</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>36-40</td>
<td>Taiwanese</td>
<td>L1:Chinese, L2:English</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Educational background</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PhD (Taiwan):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linguistics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MA (Taiwan):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linguistics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BA (Taiwan):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign Languages and Literature</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PhD (USA):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Educational Linguistics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MA (USA):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TESOL (Teaching English as a Second Language)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MA (USA):</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linguistics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Title</td>
<td>Yrs of service in the Graduate Institute</td>
<td>TCSL experience</td>
<td>Research profile relating to e-learning</td>
</tr>
<tr>
<td></td>
<td>Assistant Professor</td>
<td>2</td>
<td>Short-term tutoring in a university in Taiwan</td>
<td>TCSL synchronous online distance learning</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>10</td>
<td>Three years in a university in the USA</td>
<td>Testing of Global Chinese E-learning and E-teaching</td>
</tr>
<tr>
<td></td>
<td>Professor</td>
<td>1</td>
<td>Two years in a college in the USA</td>
<td>TCSL synchronous online distance learning</td>
</tr>
<tr>
<td></td>
<td>Assistant Professor</td>
<td>4</td>
<td>Two years in a university in the USA</td>
<td>Evaluation of overseas TCSL online learning</td>
</tr>
</tbody>
</table>
This group comprised two female (I_1, I_3) and two male (I_2, I_4) instructors. The demographic data were collected from their interview transcripts and personal web-page profiles. All instructors were between 36 to 45 years old, and all had PhD degrees (two from the USA and two from Taiwan); two had full professorial titles and two were Assistant Professors. Three of their PhDs were in the linguistics field, and the fourth in Chinese Language and Literature. The instructors’ service in the Institute varied from one year (I_3) to 10 years (I_2). In terms of TCSL experience, three of them had two to three years overseas teaching experience in universities in the United States, and the fourth had only short-term experience in a university in Taiwan. Although all of them had undertaken some research in e-learning, only two of them (I_1 and I_3) included aspects of e-learning in their own teaching, and none had taught any e-learning specific courses.

4.1.3 Students’ Background

According to the level of study, 11 students (from a total student cohort of about 100) were divided into three subgroups namely SI, SII, and SIII. Subgroup SI involved two graduate students (SI_1, SI_2) who had graduated and obtained Master’s degree from the Institute, subgroup SII involved four senior students (SII_1 to 4) who were in their last semester of the study, and subgroup SIII involved five students (SIII_1 to 5) who were either in their first or second year of study. (As indicated in Chapter 3, the Master’s degree takes at least three years to complete). The three tables below list students’ gender, age, nationality, language and educational background, years studying in the program, TCSL experience, TCSL through video-conferencing experience, e-learning related courses experience, and extracurricular e-learning related training experience.
<table>
<thead>
<tr>
<th>Code</th>
<th>SI_1</th>
<th>SI_2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Age</td>
<td>41-45</td>
<td>36-40</td>
</tr>
<tr>
<td>Nationality</td>
<td>Taiwanese</td>
<td>Thai (Chinese parentage)</td>
</tr>
</tbody>
</table>
| Language background | L1: Chinese  
L2: English | L1: Teochew dialect (a Chinese dialect)  
and Thai  
L2: Chinese (since 1997 in Taiwan) |
| Educational background | Bachelor degree (Taiwan): Business Management | Bachelor degree (Thailand): Personnel Management |
| TCSL experience | 18 years: 11 in Taiwan before graduating from the program and 7 years in the USA (2 years in high schools, and 5 years in a university) after graduating from the program | Part-time tutoring to Thai speakers who were working in Taiwan |
| Undertaken training in TCSL synchronous online distance learning | - | - |
| E-learning specific courses studied | Computer-Assisted Language Instruction | Computer-Assisted Language Instruction |
| Extracurricular e-learning related training | - | - |
Table 4.4 Characteristics of student subgroup II (final semester students)

<table>
<thead>
<tr>
<th>Code</th>
<th>SII_1</th>
<th>SII_2</th>
<th>SII_3</th>
<th>SII_4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Female</td>
<td>Female</td>
<td>Female</td>
</tr>
<tr>
<td>Age</td>
<td>23-25</td>
<td>26-30</td>
<td>26-30</td>
<td>26-30</td>
</tr>
<tr>
<td>Nationality</td>
<td>Taiwanese</td>
<td>Taiwanese</td>
<td>Taiwanese</td>
<td>Taiwanese</td>
</tr>
<tr>
<td></td>
<td>L2: English</td>
<td>L2: English, German</td>
<td>L2: English</td>
<td>L2: English, French, Korean</td>
</tr>
<tr>
<td>Educational background</td>
<td>BA (Taiwan): majored in English and American Literature</td>
<td>BA (Taiwan): majored in German, minored in Education</td>
<td>BA (Taiwan): majored in Psychology, minored in Chinese Literature</td>
<td>BA (Taiwan): majored in Preschool Education, minored in Primary Education</td>
</tr>
<tr>
<td>TCSL experience</td>
<td>Short-term Chinese courses for overseas students in Taiwan</td>
<td>5 years (including one year in a university in Germany)</td>
<td>5 years (including one year in a university in the USA)</td>
<td>Short-term Chinese courses for overseas students in Taiwan</td>
</tr>
<tr>
<td>Undertaken training in TCSL synchronous online distance learning</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>E-learning specific courses studied</td>
<td>-</td>
<td>Chinese Information Processing</td>
<td>Chinese Information Processing</td>
<td>-</td>
</tr>
<tr>
<td>Extracurricular e-learning related training</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
<td>Yes</td>
</tr>
</tbody>
</table>
Table 4.5 Characteristics of student subgroup III (1st or 2nd year students)

<table>
<thead>
<tr>
<th>Code</th>
<th>SIII _1</th>
<th>SIII _2</th>
<th>SIII _3</th>
<th>SIII _4</th>
<th>SIII _5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Female</td>
<td>Male</td>
<td>Male</td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Nationality</td>
<td>Taiwanese</td>
<td>Malaysian (Chinese parentage)</td>
<td>American</td>
<td>Norwegian</td>
<td>Chinese</td>
</tr>
<tr>
<td>Educational background</td>
<td>BA (Taiwan): majored in Chinese Literature, minored in TCSL</td>
<td>BA (Malaysia): double major in Chinese Literature and English Journalism</td>
<td>BA (USA): Linguistics BS (USA): Biology</td>
<td>MSc (USA): Biological Science and Technology BA (Norway): Chinese Literature BS: Biological Science Technology</td>
<td>BA (Taiwan): TCSL</td>
</tr>
<tr>
<td>Years studying in the program</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6 months (exchange student)</td>
</tr>
<tr>
<td>TCSL experience</td>
<td>Part-time tutoring</td>
<td>Part-time tutoring</td>
<td>None</td>
<td>Part-time tutoring</td>
<td>Part-time tutoring</td>
</tr>
<tr>
<td>Undertaken training in TCSL synchronous online distance learning</td>
<td>Yes</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
<td>Yes</td>
</tr>
<tr>
<td>E-learning specific courses studied</td>
<td>-</td>
<td>Computer Assisted Language Instruction</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Extracurricular e-learning related training</td>
<td>Yes</td>
<td>-</td>
<td>Yes</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
As the tables display, the students in the SI subgroup (who had graduated with the Master’s degree) were in the 36 to 45 years old age range (the same age range as the instructor group). As would be expected (as they were still studying for the degree) those in subgroups SII and SIII were relatively younger, aged between 22 and 30 years old. There were seven females and four males. With respect to nationality and language background, unlike the administrators and instructors, who were all Taiwanese with Chinese as their first language, five of the 11 students from subgroups SI and SIII were overseas students, from mainland China, Thailand, Malaysia, the USA, and Norway. Two of these five overseas students (from the USA and Thailand) had Chinese as their first language. The student from Norway had Chinese and Norwegian as his first language. Interestingly, all of the students in subgroup SII were Taiwanese, with Chinese as their first language.

In relation to TCSL relevant educational background, although the students all had Bachelor’s degrees, very few of them were in the relevant fields before they entered the Master’s program. For instance, only two of the students majored/minored in TCSL, and three of the students majored/minored in Chinese literature. But it could also be argued that having a background in education and psychology was relevant to TCSL.

Students in subgroups SI and SII had been studying for three to five years in the program, whilst those in subgroup SIII had been studying for between six months and two years. As for TCSL experience, only three students had had formal TCSL experience, and the rest had either taught for short periods in youth camp twice a year, or had short term one-on-one tutoring experiences.

In terms of e-learning related training, six of the students had had video-conferencing training and teaching experience within the program; five of them had taken e-learning related courses; and five had attended extracurricular e-learning related. One observation that might be useful in interpreting the data is that SII_2 and SIII_2 appeared to have had some training in all three e-learning related categories.

4.1.4 Section Summary

This section (the first of the chapter’s six sections), participants’ demographic data (4.1), is summarised in the following table. It gives participants’ gender, age, nationality,
TCSL relevant educational background, and the time they served in the Institute, studied in the Master program, and TCSL experiences.

**Table 4.6 Brief summary of participants’ demographic data**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Subcategories</th>
<th>Administrators</th>
<th>Instructors</th>
<th>Students</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>A_1</td>
<td>I_2, I_4</td>
<td>SI_2; SII_2, _3, _4</td>
<td></td>
</tr>
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<td>A_2</td>
<td>I_1, I_3</td>
<td>SI_1; SII_1, _2, _3, _4; SIII_1, _5</td>
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<tr>
<td><strong>Age</strong></td>
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<td>56-60</td>
<td>A_1</td>
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<td>46-50</td>
<td>A_2</td>
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<td>41-45</td>
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<td>I_2, I_3</td>
<td>SI_1</td>
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<td>36-40</td>
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<td>I_1, I_4</td>
<td>SI_2</td>
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<td>26-30</td>
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<td>I_1, I_2, I_3, I_4</td>
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<td>A_2</td>
<td>I_1, I_2, I_4</td>
<td>SII_3</td>
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<tr>
<td>Chinese literature</td>
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<td>I_3</td>
<td>SII_3; SIII_1, _2, _4</td>
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<tr>
<td><strong>Years served in the Institute</strong></td>
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<td>15-16</td>
<td>A_1, A_2</td>
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<td>4</td>
<td>-</td>
<td>I_4</td>
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<td>2-1</td>
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<td><strong>Years studied in the Master’s program</strong></td>
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<td>4-5</td>
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<td>2 and less</td>
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<td>SIII_1, _2, _3, _4, _5</td>
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<tr>
<td><strong>Years of TCSL experience</strong></td>
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<td>≥10</td>
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<td>SI_1</td>
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<td>I_2, I_3, I_4</td>
<td>SI_2; SII_2, _3</td>
<td></td>
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<tr>
<td>Short-term/part-time tutoring</td>
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<td>I_1</td>
<td>SI_2; SII_1, _4; SIII_1, _2, _4, _5</td>
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<tr>
<td>None</td>
<td></td>
<td></td>
<td>SII_3</td>
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</table>
In summary, as the table shows, the gender distribution is generally even across the administrator and instructor groups, and there are only two more females and males in the student group. In terms of age difference, the administrators were the oldest (46-60 years old) and the students from subgroups SII and SIII were the youngest among the participants (23-30 years old). Except for the five students who were from various countries such as Thailand, Malaysia, the United States, Norway, and Mainland China, the rest of the participants were Taiwanese. None of the administrators or the instructors had TCSL educational backgrounds; the majority of them earned their PhD degrees in Linguistics. Similarly, there were very few students with a TCSL educational background before they entered the Master’s program; only two students in subgroup SIII had majored or minored in TCSL in their undergraduate studies. The data in relation to years of faculty service shows that both of the administrators had served long years in the Institute, and the instructor group included two senior members and two relatively new members of the Institute. Data from students studying in the program seem to suggest that the Master’s program normally required at least three years to complete. Most of the administrators and instructors (except A_2, and I_2) had one to three years TCSL experience. In the student groups, three students from subgroup SI and SII appear to be experienced TCSL teachers, and the rest of them had only part-time tutoring experience.

The demographic data presented will be used later in the analysis and discussion of the research results overall.

4.2 E-Learning and TCSL

This section aims to address secondary research question 1: How did these major stakeholders perceive the role of e-learning in TCSL? The findings presented in this section will be based on participants’ perspectives on e-learning in relation to TCSL in general. The discussions will focus first on participants’ understanding of e-learning, followed by their perspectives on e-learning in TCSL, and then present their descriptions of actual e-learning situations in TCSL.
4.2.1 Participants’ Perceptions of E-Learning

As mentioned in the literature review chapter, e-learning has a long history in assisting Second Language Learning (L2L), including TCSL; for example, the use of Programmed Logic for Automatic Teaching Operations (PLATO) for L2 education in the 1960s (Levy, 1997, p. 203) and Chinese CALL (computer assisted language learning) for TCSL in the 1970s (Bourgerie, 2003, p. 152; Yao, 2009, p. 181). E-learning has attracted substantial and increasing attention in the field of TCSL in Taiwan in recent decades. In Taiwan, the Chinese translation for e-learning is 數位學習 (digital-learning). The Chinese “數位” (digital) is used to equivalent to the English “e-“ in e-learning as it stands for all the ICT related educational technologies (e.g., G. E. Zhang, 2010; Zhao, 2008). Also, e-learning and 數位學習 (digital-learning) are used interchangeably. In general, the term “e-learning” is used when people express it in English, and 數位學習 (digital-learning) is used when people express it in Chinese. Therefore, in Taiwan, the two terms used is all the matter about the translation between two languages rather than the actual distinction between the “e” and “數位” (digital).

Therefore, familiarity with the notion of e-learning was taken for granted with respect to the participants in this research. However, as mentioned in the literature review, much previous research has revealed that the term has been contested and definitions are in a state of flux. In part, this represents the ever-changing nature of the ICT field. Hence, for a better understanding and interpretation of participants’ perspectives on e-learning in TCSL, it is necessary first to recognize how they themselves perceive it.

The findings in this regard are presented with two foci: 1) participants’ limited understanding of a definition of the term e-learning, and 2) their understanding of e-learning (based on their responses to the interview questions). As noted in Chapter 3, I did not provide participants in this research with a definition of e-learning at the outset because I wanted to elicit from them their understanding of the term. A definition was provided subsequently, however, if requested. The following discussion presents the perceptions of the three groups (administrators, instructors, and students), followed by an analysis within and across the groups of their perceptions.
4.2.1.1 Administrators’ Viewpoints

The two administrators differed in their approach to the questions relating to the meaning of e-learning. As noted on his homepage, A_1 possessed a PhD degree in Instructional Systems Technology and had long-term research interests as well as a long history in e-learning related TCSL projects such as Computer-assisted Language Instruction, Distance Chinese Instruction, and a government-supported Digital Language Teaching Program (語文數位教學計畫). He seemed to have no reservation about and raised no question in relation to a definition of e-learning.

On the other hand, before the interview recording commenced, A_2, who obtained her PhD in Linguistics and was specialised in second language acquisition and experimental phonetics (as seen on her homepage), had uncertainties about what the term e-learning in the interview questions meant. For example, she queried the term’s range of possible meanings. Further, she asked me to provide an explicit definition so that she could answer the questions with more confidence.

*There are so many things involved in e-learning; which part would you want to talk about? [A_2]*

*You have to give me an explicit definition, so that I am able to answer the questions. [A_2]*

During the interview, she frequently queried what sorts of technologies or skills could be considered to be part of e-learning. She wanted assurance that her responses were in line with ‘standard’ definitions. For example,

*R: That is, what sort of things would you consider involved in e-learning enterprise? [A_2]:... [pause], e-learning in TCSL involves ... [pause] what do you want me to say after “involves”? ... I think using the Internet could cover the whole thing [e-learning]. I don’t know what to say. Does using a computer to search something count? ... Would you include word-processing and PPT presentations to be part of it [e-learning]?
When discussing the fundamental concepts of e-learning, the two participants demonstrated different interests in terms of their perspectives on e-learning. A_1 tended to put emphasis on language learning (more detail will be given in subsection 4.2.3.), whereas A_2 focused principally on the relevant technology tools of e-learning:

The contents of [e-learning in TCSL] training must be approached from the perspective of language learning, and the unique nature of the Chinese language - not from a digital technology perspective. ... For example, with the advent of the Second Life program, people rushed to use it in teaching TCSL. Likewise with Cloud Computing: people rushed to use this. And they did it regardless of whether these programs were useful or necessary. [A_1]

I think e-learning’s applications are rather broad. ... I would say that electronic and digital related media could all count as e-learning. ... Actually I myself am gradually moving into the field of mobile-learning. I now mainly use this [indicating her tablet PC] for learning. With this, I am able to learn anywhere at any time. [A_2]

Overall, consistent with the two administrators’ personal educational background and research interests, they seemed to convey different degrees of certainty about their understanding of e-learning. For instance, although A_1 did not enquire about the definition of e-learning that I had in mind, neither did he provide specific or a comprehensive description of e-learning. Much of the conversation indicated that he had no doubt about his understanding of the meaning of e-learning. A_2, on the other hand, appeared to be rather uncertain about the explicit meaning of the term. Furthermore, although both participants were aware of new e-learning technologies, A_2 appeared have more advanced awareness of the development of e-learning as she involved mobile-learning (m-learning) as part of e-learning practice and showed me her tablet computer that she customarily used for m-learning.
4.2.1.2 Instructors’ Viewpoints

Interestingly, during the interview, none of the instructors asked for a definition of e-learning with respect to my questions. This, however, is not to say that they had a clear understanding of the term. For example, I_2 was trying to define e-learning as follows:

R: What do you perceive e-learning in TCSL or what sort of things would you consider it is e-learning related?

[I_2]: I think the definition of e-learning must involve a lot, such as ... [paused and did not finish the sentence]. There is e-learning, right? ... [pause] then, what else . . . [pause], it must be related to something online. I think e-learning must be .[pause] able to ... [paused and did not complete the sentence]. I personally don’t think that you only put something [online] then it’s e-learning: it should be about providing opportunities for interaction, for instance, between teachers and students or between students and students ....

I_2 had worked for 10 years at the Institute, had a PhD in Educational Linguistics, and had spent about a year engaged in government funded e-learning related research into online language testing. In the interview he did not clearly articulate a specific or clear definition of e-learning.

A further example in relation to the instructors’ perceptions of e-learning can be seen in the following response from I_1, when asked about the types of e-learning applications she would use in her TCSL class. She emphasised video clips and animation:

Currently, I have seen many websites providing excellent materials. I would be more than happy to use the video clips or animations provided by them in my Chinese language class. [I_1]

With a PhD in Linguistics, she had two years’ experience in the Institute teaching TCSL synchronous online distance learning using video conferencing. The above response, however, shows that, at that moment, the only thing she could think of with respect to e-learning was online accessible resources.

It is significant that none of the instructors queried the meaning of the term e-learning, and none of them provided a comprehensive description of it. However, they did
mention many e-learning related tools or programs such as CALL (I_1); online language learning websites; online social media, such as YouTube (I_2, I_4); Cloud computing, such as Course Management Systems (CMS) (I_1, I_4); synchronous online distance education (I_1, I_2, I_3, I_4); and online assessment programs (I_2, I_4), all of which were variously considered as part of the e-learning enterprise.

4.2.1.3 Students’ Viewpoints

Compared to the administrators and instructors, the students – especially those in subgroups SI and SII – were more forthcoming in inquiring about the meaning of the term e-learning, as well as the possible elements it involved.

Below are examples of direct questions asking the meaning of e-learning:

R: May I ask your perspective on e-learning in TCSL?
SI_1: Then, I have to ask first what you mean by ‘digital learning’ [which in Taiwan is normally used interchangeably with ‘e-learning’]

R: Did your language teachers use digital materials in the class often when you were taking CSL classes?
SI_2: That’s why I have to ask you what you mean by “digital” materials.

[Prior to the interview commencing:] SII_3: I have to first ask about e-learning, what do you mean by e-learning?

In trying to ascertain exactly what field e-learning covered, students’ questions seeking clarification focused mostly on the type of technology used for teaching. For example, the two computer-based technology (CBT) related tools that were most frequently mentioned were multimedia aids and PPT:

When I first saw the [interview] questions, I was wondering how “digital” could have relevancy to “multimedia”... [pause and left the sentence unfinished]. But, I don’t feel the same with ‘e-learning’... [paused and left the sentence unfinished]. [SII_2]
So, if something like multimedia... [paused and left the sentence unfinished]? [SII_3]

... for instance, does video editing count? ... It’s a matter of definition, and I would like to ask, for instance, does PPT count as well? [SII_4]

Two web-based technology (WBT) tools, email and online video-conferencing, were also mentioned frequently in students’ responses:

Like, one of my language students emailed me a letter and, at the end, added: “Could you please revise the sentences for me?” Would this be counted as part of e-learning? [SI_1]

Do you think this way of teaching [online video-conferencing] is e-learning? [SI_2]

I think ... [pause] digital ... [pause] you said e-learning: did you mean online-learning? [SIII_4]

Students’ responses to questions about their perception of e-learning, appeared to have two distinct foci: technology and learning. Students’ descriptions in relation to the technology part of e-learning involved three subcategories: computer-based technology (CBT), web-based technology (WBT), and mobile-based technology (MBT).

With respect to CBT, five of the students, representing all three subgroups (SI_2, SII_3, SII_4, SIII_1, SIII5), mentioned that the first thing that came to mind when they thought of e-learning was using the computer for teaching. The CBT related tools that the students considered to be part of e-learning were PPT, audio-visual teaching materials such as CDs, DVDs (SI_1, SI_2, SII_3, SIII_3), multimedia (SI_1, SII_2, SII_3), and language learning software (SI_1, SII_2, SIII5). By far PPT was the most commonly mentioned tool and, indeed, was referred to by every student.
In terms of WBT, almost all of the students considered using video conferencing or Skype for teaching and learning to be one of the forms of e-learning. Some students related e-learning directly to online learning or distance learning.

*R*: If I say e-learning, what comes to your mind right at this moment?

*SII_4*: I would say distance learning could be part of it.

*SIII_4*: I think of online learning.

WBT related tools that those in the student groups mentioned when asked about digital learning included: e-mail (SI_1, SII_2); online language learning software (SI_1, SII_2); online dictionaries (SII_2, SIII_4); online audio-visual recording tools (SI_1); Cloud computing such as Moodle (one version of Course Management Systems); social media or social networking such as Voice Raid (SII_1), YouTube (SII_2, SII_3), Blogs (SII_2), Facebook (SII_2, SII_3), and Google sharing (SIII_3). Moodle appeared to be the most familiar Course Management System (CMS) tool and, indeed, was mentioned by almost every student during the interview. It is quite likely that this was due to the fact that Moodle was the CMS that the Institute used.

With regard to MBT, two students (SII_2 and SII_3) suggested that using the devices such as iPhone or iPad for learning, could be or would become one form of e-learning:

*I don’t know … [pause], many people now have iPhone. They would and could download software online. For example the software could help to sort out Chinese vocabulary into a glossary and you can use it as flash cards... So, I think, in the future, digital [learning] could be like this type of mobile [learning] [SII_2]*

*Actually there is a great advantage with ‘e-lization’, like now, there are so many things like RSS or PPS, and many others. These are portable. ... They [language*

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5 Student participant SII_2 had five years TCSL experience, including one year in a university in Germany.
6 Student participant SII_3 had five years TCSL experience, including one year in a university in USA.
7 RSS (Rich Stie Summary): a format for delivering regularly changing web content.
8 PPS (PPStream): a Chinese peer-to-peer streaming video network software.
learners] could use their iPad or iPhone, or some similar devices, to instantly receive learning materials or aids. [SII_3]

Besides focusing on the technology part of e-learning from different aspects, some students also addressed the ‘learning’ function. For example, SII_2 mentioned that, in terms of learning, besides interaction, e-learning should also involve an evaluation mechanism for students to recognize what and how much they had learned:

[E-learning] is not just looking at a screen: there also has to be interaction if it is to be properly called digital learning. ... I think such learning should have an evaluation mechanism so that the students would know whether or not the required knowledge or skills had been learned. So, it needs assessment ... [pause], that is, after interacting with students, it needs a process of evaluation. This is what I perceive e-learning to be. [SII_2]

Alternatively, SIII_1, the only student in Subgroup SIII who was in the second year of study (the others in this subgroup being in their first year), considered student self-learning through asynchronous WBT as part of e-learning:

It also includes student self-learning. That is, there is in-classroom lecturing, but you also assign students online self-learning exercises to be done at home. [SIII_1]

The examples presented above show that most of the students who wanted clarification of the meaning of the term e-learning, were in subgroups SI and SII; students in SIII (those in the beginning of the program) seemed to have less uncertainty about the definition of e-learning. Conceivably this is because, being younger, modern technology has been a stronger part of their lives. Across subgroups SI and SII, only one student SII_1 did not ask for clarification of the term e-learning. By contrast, only one student SIII_4 in subgroup SIII did so. However, in terms of describing e-learning, there is no subgroup difference in perceptions of the CBT and WBT aspects of e-learning related technology. Although two students from subgroup SII (SII_2 and SII_3) had some uncertainty about the definition of e-learning, they were the only two students who referred to MBT; further, SII_2 was one of the two students who considered the learning part of e-learning. Hence,
there seemed to be no direct relationship between students questioning the meaning of the term e-learning and their degree of understanding of it. In other words, the students who asked questions did not necessarily do so because they were less knowledgeable about the meaning of e-learning; such questions were issues of clarification.

4.2.1.4 Subsection Summary

To summarise subsection 4.2.1, participants’ perceptions of e-learning, whilst some participants sought clarification of the definition of e-learning, others did not. Certainly students had a higher frequency of raising questions in comparison with the administrators and instructors. My intuition prior to commencing the research was that those who asked for most clarification or a definition of the term ‘e-learning’ would be the ones who were more uncertain of the meaning. However, it appears that participants’ behaviour in asking or not asking questions could not be regarded as an indicator of their understanding of e-learning. The students, despite having a higher frequency of asking questions of clarification, not only suggested a much wider range when discussing the use of e-technology but two of them also drew attention to the importance of the ‘learning’ function with respect to interaction, evaluation and self-learning. The results also show that, in contrast to the administrator and instructor participants’ relatively brief lists of e-technologies, students could recount a breadth of CBTs such as PPT, CDs, DVDs, multimedia, and language learning software; WBT such as e-mail, online dictionaries, online language learning software, online audio-visual recording tools, Moodle, Voice Raid, YouTube, Blogs, Facebook, and Google sharing; and MBT such as iPhone and iPad for teaching and learning as part of e-learning enterprise. Furthermore, unlike two of the students, no-one from the administrator and instructor groups mentioned the learning functions of e-learning.

4.2.2 Participants’ Perspectives on E-Learning in TCSL

In this subsection, various responses in relation to participants’ perspectives on e-learning in TCSL were analysed and interpreted. More specifically the subsection examines 1) participants’ perspectives on the role of CBT in TCSL practice, 2) their perspectives on
the role of WBT in TCSL practice, 3) their attitudes towards e-learning in TCSL, and 4) the relationship between TCSL teachers’ e-learning competence and job opportunities.

4.2.2.1 Perspectives on the Role of CBT in TCSL

Various advantages and disadvantages in relation to the utilization of CBT in TCSL were raised by some of those interviewed without being specifically prompted to discuss these. The following discussion focuses on the two functions of CBT that were most frequently raised: one in relation to Chinese character learning and the other on the subject of students’ Chinese pronunciation.

In terms of Chinese character learning, a number of the participants suggested CBT could be beneficial in enhancing CSL students’ memory of Chinese characters and stroke sequences, as well as helping them to use a keyboard to write Chinese characters without learning handwriting skills. SI_1 (one of the graduated students with more than 10 years’ TCSL experience) mentioned that, due to the unique writing system of Chinese characters, most CSL students found this to be a difficult task. It normally requires an inordinate amount of effort practising and memorizing the structure and stroke sequences of the characters in order to be able to write them by hand. As a consequence, TCSL teachers normally have to spend a considerable amount of time in guiding students stroke by stroke in class. Yet teachers do not normally have enough class time to adequately teach students in every detail the structure of each of the Chinese characters. This last point was also raised by SII_2 (a graduating student with five years’ TCSL experience).

With regard to the task of memorizing the structure and stroke sequences of the characters, A_1 (the former administrator of the Master’s program), SI_1 and SII_3 (a graduating student also with five years’ experience in TCSL) proposed that there were many relevant CBT software programs that are useful in enhancing students’ memory in this regard. With the help of such programs, students are able to repeatedly practise Chinese character stroke sequences at the computer and, therefore, enhance their handwriting skills without teachers sitting alongside them to provide guidance.

One more advantage of CBT in Chinese character writing is that it provides computer typing software that enables CSL students to ‘write’ Chinese without spending time and
effort in learning how to write by hand, thus saving a great amount of time. However, A_1 argued that if students rely too heavily on using a computer for typing Chinese and ignore handwriting practice, they will not be able to memorize the Chinese character strokes and thus have difficulty writing by hand if ever the need arises to do so.

The second function of CBT most frequently raised by the participants relates to Chinese pronunciation enhancement. Based on her experience in a relevant research project, A_2 (the current program administrator of the Master’s program) proposed that CBT-related tools could be used effectively to improve students’ pronunciation. She gave as an example a device, designed on linguistic and phonetic theories, that can analyse a student’s voice and then provide the results visually (using graphs) and in an auditory form. She indicated that research reports into this demonstrated that students could achieve great improvement after repeatedly practising their pronunciation with the help of this type of computer software program. Similarly, SII_2 confirmed the benefit of such a program for highlighting pronunciation issues and allowing students to practise without needing constant correction by a teacher. The benefits of this were also raised by SIII_3 (the first year student from the USA), who compared the new technology to the traditional use of a tape-recorder, and stated that he would much prefer the newer approach for improving his pronunciation. He argued that, in using the tape-recorder ‘method’, students could imitate the sounds they hear on the tape, or record their voices; however, there is a much greater need for this to be done under the supervision of a native speaker if pronunciation problems are to be satisfactorily corrected. By contrast, the new software, in displaying differences between standard pronunciation and that of the learner, is more conducive to student self-learning.

On the other hand, although SII_2 agreed that a pronunciation software program could be helpful, she expressed some concern regarding the computer’s ability to perfectly detect or analyse voice issues:

But if we rely on a computer to determine the subtleties of individual voices, I have some reservations about the degree of its accuracy. Everyone has his or her unique spoken language nuance or peculiarity. For instance, I might speak at a higher pitch or something and it could cause some deviation in the computer’s
ability to analyse it. There are still gaps to be addressed in order for the computer to be completely precise. (SII_2)

In conclusion, it can be said that there was certainly some support for the relevance of CBT in TCSL, in Chinese character learning and pronunciation. At the same time, there was an element of ‘caution’ that if students relied completely on a computer to type Chinese, they would be somewhat restricted in their handwriting ability. Likewise, whilst the benefits of voice devices for pronunciation training offer new possibilities that do not require a teacher’s presence at all times to correct mistakes, a question was raised as to a computer’s ability to sufficiently recognize, analyse and correct mispronunciations as effectively as a teacher can. On the one hand, computers do offer the possibility of reducing one-on-one teacher contact (for reasons of such things as cost, staffing, space, resources and travel difficulties), but on the other hand, most certainly CBT cannot be seen as a replacement for a teacher.

4.2.2.2 Perspectives on the Role of WBT in TCSL

In view of the role of WBT in TCSL three issues warrant discussion: 1) the use of WBT for CSL online distance learning, 2) the use of WBT for assisting after-class self-learning, and 3) the use of online social media for information communication and sharing. Among these three issues, the use of WBT in synchronous online distance learning (involving teacher and student at the same time) was most discussed. With respect to its advantages, nine of the 17 participants (A_1, I_2, I_3, I_4, SI_1, SI_2, SII_2, SII_3, SIII_1) themselves raised the subject of synchronous online distance learning, in particular, online-tutoring and video-conferencing. They all acknowledged that this was an excellent means of providing CSL learning opportunities to those not living in a Chinese-speaking environment and with little or no direct access to Chinese teachers.

Various benefits of synchronous online distance learning were mentioned by the participants. For instance, many of them indicated that one of the most significant benefits of distance-learning in TCSL is that it could overcome time and space barriers. Five of them (I_2, I_4, SI_1, SII_3 and SIII_5) suggested that distance learning provides CSL students in a non-Chinese speaking environment with opportunities to learn Chinese in
their own country (or wherever they are situated) without having to travel overseas to study the language, thus saving time and money. Students SI_2, SII_2 particularly stressed that learning CSL online would be a great benefit for those who really wanted to learn Chinese but did not have enough money to travel to Taiwan or China.

The disadvantages of WBT in CSL online distance learning were also discussed. The lack of in-person interaction during TCSL online-tutoring or video-conferencing appeared to be one of the participants’ major concerns. SI_2 and SIII_2 provided similar opinions based on their personal teaching experience:

So, in the traditional classroom setting, if I interact with you like this [face-to-face], I can read your expressions from your face and eyes to detect whether or not you are paying attention or understanding [what is being taught]. [SI_2]

If that [TCSL] is through a platform, even if it is video-conferencing, whilst it enables [the teacher] to see the student on the other side, I have still felt that I could not explicitly tell what the student’s emotion was, or ‘feel’ the actual situation [on the other side]. This is quite different from when I am in traditional classroom setting and can tell from the eyes when he (the student) is losing attention. [SIII_2]

WBT was also considered to be beneficial for assisting after-class CSL self-learning. The reason provided was that the time available for in-classroom practice is normally limited, and, therefore, there might be insufficient time for CSL students to thoroughly understand and learn what is being taught at that moment (SI_1, SII_2). WBT offered a platform, some posited, that not only enabled teachers to post the materials taught in class (SIII_2), but also to assign extra exercises (SI_1), or further interact online by answering students’ questions and/or providing feedback (I_2, SI_1, SIII_3). Posting video recorded lectures online also allowed students to review them as often as they needed to (SII_3). Finally, it was suggested that online social media, such as Facebook, Twitter, and Google, could have a role to play in information sharing, peer tutoring, and teacher-student communication after class (SII_3, SIII_3).
Not everyone was in favour of using WBT for after-class online tutoring. One of the students (SI_1), who had a total of about 18 years’ TCSL experience in Taiwan and the USA, argued that this meant extra work for teachers and felt that not all TCSL teachers would be pleased to give up their free time in this way:

*If it is synchronised interaction, there could be a time concern. To be very frank, if you were a teacher, would you like to have to spend extra time after school? Not every teacher would be willing to work after normal teaching hours.* [SI_1]

One of the instructors (I_3), who had two years’ TCSL experience in a university in the USA, saw the issue from a CSL student’s point of view. She suggested that not all CSL students would be strongly motivated to undertake extra, after-school online CSL tutoring: “It would pretty much depend on the nature of each student” (I_3). Indeed, she went so far as to suggest that students might complain: “I have already had my Chinese lessons at school. There are many other courses I have to study for. Why should I have to do it [for you]?” (I_3)

In summary, this subsection has discussed participants’ perspectives on the advantages as well as the disadvantages of WBT in TCSL. Firstly, responses indicated that online tutoring and online video-conferencing were advantageous to CSL learners insofar as they help overcome distance and space factors, time constraints for in-class delivery, and financial issues. Nevertheless the lack of real in-person interaction was considered to be the main disadvantage of online distance learning. Secondly, students believed that WBT was beneficial for CSL after-class online self-learning. However, some participants were less enthusiastic and suggested that TCSL teachers might not want to have to undertake extra work outside of normal hours, and CSL students might not be sufficiently motivated to engage in extra after-class learning. Finally, some students mentioned the potential of using online social media to assist CSL learning.

### 4.2.2.3 Participants’ Attitudes towards E-Learning in TCSL

The data obtained from the interviews with all three groups of participants indicate that many consider e-learning to have great potential in the TCSL field. Indeed, 15 of the 17 participants (except for SII_4 and SIII_4) were in agreement that e-learning was
becoming an inevitable trend in CSL teaching and learning. However, despite acknowledging this trend, not as many had a positive attitude towards it. The following discussion exemplifies participants’ attitudes towards e-learning in TCSL, their perceptions on the role of e-learning in TCSL, and the extent of their aspiration with respect to integrating e-learning into their own TCSL practice.

Both of the administrators (A_1 and A_2) postulated that were multiple viewpoints in relation to the impact of e-learning on TCSL. For example, A_1 stated:

*That is to say that e-learning itself is ‘neutral, it is neither ‘good’ nor’ bad’. But if you use it inappropriately, it could be a bad thing, and if you use it sensibly, it could be a good thing. It is merely an approach, merely a tool: it is not a matter of right or wrong. [A_1]*

Similarly, A_2 said:

*Using digital means is not always necessary for TCSL to be better. The real challenge is deciding when to use it and when not to use it. [A_2]*

Interestingly, A_2 appeared to be quite accustomed to using ICT devices for teaching and learning and, relatively, tended to be more supportive of e-learning than A_1, when describing her relevant experiences – such as working with her students to set-up websites for Taiwanese dialect learning and being a leader of a research project with an IT company to invent software for detecting and improving student’s pronunciation. Despite this emphasis on e-learning, she did not consider it a major component of TCSL.

From a second language – or, more specifically, a TCSL – perspective, A_1 did not perceive e-learning as being superior to any other approach in enhancing TCSL:

*Forced to use e-learning [for TCSL] when there are better ways, then that is absolutely not beneficial to the students whatsoever. [A_1]*

*I don’t think it should be judged from an e-learning point of view, but rather from the very essence of TCSL, that is, a pedagogic point of view, a language learning point of view. Then you can tell under what circumstances it [e-learning] could be good, and under what circumstances it could be bad. [A_1]*
Throughout the interview, A_1 repeated incessantly an argument that circled around one central idea: e-learning was merely one of many options or approaches for assisting or enhancing TCSL; it was not superior to any other approach.

From the four instructors’ viewpoint, I_2 and I_4 noted that although e-learning seemed to have become more and more influential in the field of TCSL, they did not believe that it has the potential to replace traditional teaching practice.

*There is no doubt that e-learning is a trend, this is for sure. ... But I don’t think it will replace core teaching (traditional teaching and learning). It will not become the dominant teaching mode ... [I_2]*

*I think it would be very difficult for e-learning to take the foremost role in formal in-classroom TCSL practice. [I_4]*

Similar opinions were seen in student participants’ descriptions as well. For example:

*It is merely of assistance. But to me I always feel that it is only a supportive aid. [SI_1]*

*I feel [e-learning] is a trend, but it might never become the main teaching tool. ... To me, it is a means of assisting [the teaching-learning process]. [SII_2]*

*I would like to use e-learning as one of my teaching methods, but not the foremost one. I am pursuing diversified ways of teaching, looking for [pedagogical] richness. [SIII_5]*

When all the student participants were asked about their preferences in applying e-learning to their own future teaching practice, “Would you consider applying e-learning in your future teaching practice?” the responses were varied; some appeared to be lacking in enthusiasm for e-learning, whereas others were more positive in their attitude. For example, five of the students (SI_1, SII_1, SII_3, SII_4, and SIII_4) did not see e-learning as an essential component for TCSL, although there was a sense that it could have a role to play. As seen in the following comments:
There is no doubt that PPT is an excellent means for in-class teaching, but it is not essential to use it. There are so many teachers who can teach very well without using PPT. As long as you can perform strongly in the classroom and the students learn effectively, that is the most fundamental purpose of teaching. [SI_1]

I think pedagogies are varied, and e-learning might not promise to... [pause], that is, with respect to the teachers’ application and the students’ learning I do not think it will achieve the best results. ... In addition, there are so many other ways of achieving better learning outcomes, which makes me think that [e-learning] is not very important. [SII_4]

In my current teaching practice it is not essential, although I won’t refuse to try it if there is an opportunity. [SII_3]

I think e-learning certainly is good [in TCSL], but keep in mind that the computer is merely an aid. [SIII_4]

SI_2 (from Thailand) and SIII_4 (from Norway) both said that they would prefer to have in person, face-to-face interaction as both a CSL student and as a teacher.

At the moment, I am not enthusiastic in using it [e-learning], because I feel learning from the teacher is more effective. We [CSL students] came to Taiwan because we wanted to learn from real Taiwanese people – not machines. [SI_2]

I won’t use it too much in teaching practice because I think students prefer to have [in person] interactions with teachers. [SIII_4]

Some participants outlined limitations of e-learning and were not highly supportive in their attitudes towards TCSL online distance learning. SII_1 addressed her concern
regarding the deficiency of the Web technology itself, whereas SIII_3 and SIII_4 felt that online teaching would deprive them from some of the pleasure of teaching.

*Online? Although this is my research area, I actually prefer the real, in-classroom setting. After I had finished my research project on online video-conferencing, I found that the Web technology is not yet perfectly developed ... I feel that a traditional, in-classroom setting is relatively easier for teachers.* [SII_1]

*I don’t like it. ... I think one of the most important reasons that I want to be a teacher is to be able to interact with others, get to know a lot of people, and to derive enjoyment from teaching students. Without this, I would feel that this job is little more than endlessly correcting homework assignments. ... The teachers [teaching through online video-conferencing] would be pretty much like robots, that is, there is no real sensation of interpersonal relationships.* [SIII_3]

On the other hand, although SIII_3 mentioned that although he has no interest in online teaching, he and one of the instructors, I_1, both expressed a strong willingness to apply e-learning in their TCSL practice as they assumed it will become an indispensable means of teaching.

*SIII_3: I think we will need these [e-technologies] in the future. It is evident that [CSL] students are so fond of using these [ICT tools]. All the students like to search for helpful software programs or websites. Students are so fond of using computers, and they use computers all the time. So I feel I have to keep up with the students. In the future it will be essential to use computers in order to meet teaching objectives.*

*R: Do you think e-learning has become essential?*

*I_1: Yes, because we now are in the e-era where I think it is indispensable. If I were a TCSL teacher I think I would use it in my classroom.*

The findings discussed above demonstrate that the majority of participants did not perceive e-learning to be indispensable in TCSL. The two administrators regarded it merely
as one of a number of approaches for assisting TCSL practice, and two of the four instructors and five of the 11 students did not perceive e-learning to be at the forefront of essential approaches for TCSL. Indeed, only two of the 17 participants (an instructor and a student) considered that e-learning had become indispensable in TCSL and strongly supported its application.

4.2.2.4 TCSL Teachers’ E-Learning Competence and Job Opportunities

In regard to participants’ perspectives on the impact of teachers’ e-learning competence in relation to employment opportunities, two diverse opinions became apparent in the collected data. Some participants across all three groups (A_1, I_3, SI_1, SII_2 and SIII_1) considered TCSL teachers’ e-learning competence to be insignificant in obtaining job offers, whereas others (I_1, I_2, SI_2, and SIII_5) had a contrary opinion, believing that relevant e-learning skills could be advantageous for job acquisition.

In view of overseas job opportunities, administrator A_1 and student SII_2 proposed that, based on their experience, TCSL teachers’ e-learning competence was immaterial with respect to job application success.

So teaching overseas, e-learning eh ... [pause] not really ... [pause] not important. ...Based on our actual experience [in the Institute], and our profound understanding [of overseas TCSL situations], it [e-learning] plays merely a trivial role in job application success. Like I just said, it would be good if you have it. But if you don’t, it will not harm your overseas job prospects. [A_1]

They didn’t ask me about it [my e-learning relevant skills]. They asked me about my German capability. I felt there seemed to be little or no requirement for digital teaching skills in Europe. [SII_2]

Correspondingly, with regard to TCSL job opportunities in Taiwan, one of the instructors (I_3) and two students (SI_1 and SIII_1) stated that e-learning skills were not listed as essential criteria for TCSL teachers in Taiwan at the time of the research. For example, I_3 stated:
At present, it [e-learning skills] seems not to be a requirement [for TCSL teachers].... I’ve never heard of anyone [of the Master’s students] who received a formal job offer because of their e-learning abilities. [I_3]

Further, SI_1 and SIII_1 reflected that they had known many senior TCSL teachers working in prestigious CSL institutions in Taiwan who had limited e-learning knowledge and computer-related practices facilities in their teaching (not even PPT presentations). These two students argued that this did not prevent them from being excellent teachers who achieved excellent results with their students. They supposed that a lack of e-learning related skills did not affect TCSL teachers’ careers either with respect to obtaining jobs or in their professional competence.

On the other hand, two instructors (I_1, I_2) and two students (SI_2, SIII_5) held a contrary opinion, suggesting that possessing e-learning related skills could be a positive factor for TCSL teachers in their job applications.

I think it [e-learning] must be a great help in applying for [TCSL] jobs. Maybe not every organization would put it high on the list of criteria, but it could be regarded positively if an applicant possessed such skills. [I_1]

Of course it will [help in securing a job]. I think e-learning is a skill. It would always be good if you have additional skills. If by chance in the position you are applying for such skills are regarded as important, then it would be a plus. [I_2]

In terms of teachers’ careers, it could enhance the value of their contribution and strengthen their professional standing. [SI_2]

It will, for sure. If you have such a capability, you would certainly be more highly regarded. I am planning to go back to Beijing to work, and now there are many [emphasised] companies there that run only [emphasised] distance learning courses. [SIII5]
These comments show that there are clearly differences of opinion regarding the importance of e-learning competence with respect to job applications and job performance. Although there are differing opinions, with the intrusion of technology into all aspects of our lives, it might be reasonable to expect that e-learning competence will increasingly be required for language teachers in the future.

4.2.2.5 Subsection Summary

This large subsection, Participants’ perspectives on e-learning in TCSL (4.2.2), examined the research participants’ perspectives on e-learning in TCSL. This consisted of analysing responses in four areas: 1) perspectives on the role of CBT in TCSL practice; 2) the role of WBT in TCSL; 3) attitudes towards e-learning; and 4) e-learning competence and job opportunities and performance. This section was orientated to the perceptions and attitudes towards e-learning by the major stakeholders. However, it is also important to explore how these attitudes and perspectives influence e-learning practices in the Master’s program.

The first of these the findings indicated that CBT could be beneficial in assisting Chinese character learning and improving pronunciation. However, over-reliance on the computer for developing Chinese character writing skills at the expense of handwriting practice was considered to be a possible issue. Similarly, some concern was raised about the degree of precision possible in correcting pronunciation.

Whilst nine of the 17 participants acknowledged that online distance learning had some benefits for CSL students, especially those living in non-Chinese speaking environments, a few were averse to the consequent loss of real in-person contact. Certainly it was acknowledged that WBT offered CSL students extended learning opportunities; at the same time this might be problematic for students and teachers alike, some not being prepared to engage in ‘extra’ work outside of the classroom. Nevertheless, given the pervasive nature of online social media, WBT was seen as offering some potential.

The findings in regard to participants’ attitudes towards e-learning in TCSL reveal that, despite the fact that most of the participants perceived e-learning as an inevitable trend in the field of TCSL, the majority across all three groups did not attach much importance to
it. Indeed, only two of the 17 participants expressed a desire to apply e-learning in their future teaching practice.

Whilst there are clearly differing opinions regarding the importance of e-learning skills with respect to job prospects and professional performance, it might be concluded that, with the intrusion of technology into all aspects of our lives, it might be reasonable to expect that e-learning competence will increasingly be required for language teachers in the future.

4.2.3 E-Learning in TCSL in Practice

Whereas the previous subsections focused on participants’ conceptual understanding of e-learning with respect to TCSL, this subsection focuses on their perspectives on e-learning from a more practical point of view. The issues that were paramount in this regard were 1) practical Computer Based Technology (CBT) applications in TCSL, and 2) practical Web Based Technology (WBT) applications. The relevant data derives from participants’ personal experiences or recounted observations.

4.2.3.1 CBT Applications in TCSL in Practice

Although e-learning was generally perceived to be a trend for future CSL teaching and learning, and all types of currently available e-tools were mentioned by the participants, the impression they gave was that there was relatively little practical application of CBT in TCSL. Indeed, when discussing the application of e-learning in CSL in classroom practice, based on their personal teaching and/or learning experiences in Taiwan as well as overseas, the majority of the participants across all three groups (administrators, instructors, and students) and subgroups indicated that the application of e-technologies in classroom practice was insignificant. Further, it appeared that CSL classrooms were also commonly insufficiently equipped with ICT-related facilities.

The lack of use of e-learning in CSL teaching experiences in Taiwan, was noted by SII_2 and SII_3, both of whom had four years teaching experience in one of the most prestigious CSL institutes in Taiwan:

Our institute rarely used digital-related teaching materials. ... There was just very little. Because we have one hour, or I should say that we have [only] 50
minutes facing students. ... most of the time was used for drilling oral practice. The lesson time went very quickly. [SII_2]

Comparably, it seems very few people use it (e-technologies), as far as I know, like ... [name of institute] or the institute that I work for. [SII_3].

A similar picture was also provided by participants who had overseas teaching experience, for example A_1, I_3 and SI_1 in the USA, and SII_2 in Germany. A_1, who had had one year TCSL experience at Harvard University and had visited CSL programs in more 100 universities around the world, commented:

Is it obligatory to use the computer in the classroom? Not necessarily. In the whole TCSL [program] at Harvard University, there was just no space [emphasised] for using computers. Many universities in the world have persistently used drill practice and have not seen a need to use computers in the classroom. [A_1]

Similarly, I_3, who had had two years’ TCSL experience in a university in the USA, emphasised that she did not apply ICT-related elements in the classroom when she was teaching Chinese in the university.

R: So, when you were teaching in 2005-06, did you use any computer-related or any e-learning elements in your classroom? I_3: No, it was just not relevant. R: Not relevant at all? I_3: That’s right.

SI_1, who was an in-service TCSL teacher with five years’ experience in a university in the USA, mentioned that she and her co-teachers seldom used e-learning related elements; indeed, using CDs as a listening teaching experience was the only technology-related activity she could think of:
Basically, in our school, we don’t apply much e-learning. Generally, we play audio recordings; we have a listening class and the textbooks for that [normally] come with CDs. We use them as part of course activities. That’s it. [SI_1]

To give one more example, SII_2 shared her one year of teaching experience as a TCSL intern-teacher in a university in Germany. She also indicated that e-technology was rarely used by teachers in CSL classrooms when she was there.

In regard to CSL learning experiences – as distinct from CSL teaching – student participants SIII_3 (Norwegian) and SIII_4 (American) both mentioned that, when they were learning CSL in their respective countries and in Taiwan, some teachers did occasionally use PPT. Other than that, they rarely saw language teachers using e-technologies in the classroom.

In reflecting on the use of e-technology equipment, many of the participants stressed that a lack of ICT-related infrastructure and classroom facilities in Taiwan and universities overseas was common. For example, with respect to Taiwan it was suggested:

**R:** What’s the situation like in Taiwan?

**A_2:** It seems not every classroom has e-facilities.

**SII_2:** I think a lack of facilities is quite a big problem. ... In our classroom there are no so-called hardware facilities. Because it is [normally] a small class with four students, we hardly use digital-materials.

**R:** Was there a computer in the classroom when you were studying Chinese?

**SI_2:** No, and even now there is still no computer. The teachers have to bring their own computer.

This situation was not confined to Taiwan: a similar situation was also evident in other countries according to the participants. For instance, SII_2 described her personal experience in Germany as follows:
**R:** How about the university you taught at in Germany and the use of digital-materials there?

**SII_2:** Even less than Taiwan. Using equipment was not that convenient; it was all locked in cupboards. So, it was not until very late [in the teaching year] that I found out there were computers in the classroom. No teacher had mentioned to me that they were locked in the cupboards.

The findings presented in this subsection are interesting in that, whereas in earlier sections participants perceived e-learning to be an inevitable trend in the field of TCSL, there was not a great deal of importance given. In this subsection it suggest that participants were familiar with e-learning, but there was a lack of e-learning infrastructure and e-learning was seldom applied in TCSL classroom practice. It appears this was not seen to be an issue as they felt the traditional teaching-learning method of drill practice was best practice and this did not require the same degree of technology. It might be surmised that for this reason they tended not to see the paucity of e-learning practices as being an issue.

### 4.2.3.2 The Application of WBT in TCSL Practice

The following discussion on the application of WBT in TCSL focuses, firstly, on online tutoring courses available in Taiwan and Mainland China, and, secondly, on some existing online learning websites mentioned by the participants. This is in part influenced by the extent of differences in market demand between Taiwan and Beijing (China). To take Taiwan first, according to SII_1 and SII_2, CSL online tutoring programs in Taiwan seemed not as popular as they were expected to be,

> Of course, everyone says this market is huge, but ... there are still very few online CSL tutoring courses available in Taiwan. [SII_1]

> There once was a company called TutorABC that invited our language institute to join them to run [online] ‘TutorChinese’, but it did not work out in the end. ... I think students who come to Taiwan to learn Chinese would prefer to learn Chinese from real people [teachers] and not a computer. So, at the moment,
distance learning is more for the students who are not able to come to Taiwan, but even this has rarely happened. [At my language institute] there has only been one case in five years of someone enrolling in a Chinese class by distance learning. [SII_2]

In contrast, SIII_5, who was an exchange student from Mainland China, remarked that the market for CSL online tutoring had expanded rapidly in big cities in China, for example, Beijing:

There are a lot of companies running this kind of online distance-learning [program] in Beijing City. ... I know of a classmate of mine who worked in Beijing for a Korean company that runs an online CSL institute ... and the market has been expanding rapidly. ... It [online tutoring] is very convenient, because Beijing is such a huge a city and transportation is terribly congested. ... So if I have a short two-hour tutoring lecture every day, then I have to squeeze into the terribly crowded subway and travel for a considerable distance, and this would involve me in long hours travelling back and forth. But, if I could do it from home, then I would only need to turn on the computer. [SIII_5]

These two examples suggest differing viewpoints. On the one hand, SII_2 suggested that some foreign students go to a lot of trouble to study CSL in Chinese-speaking countries because they prefer to learn it with ‘real’ people face-to-face. On the other hand, SIII_5, speaking from her own experience as a language tutor, postulated a practical argument for synchronous online tutoring – namely, that it saves teachers (and students) considerable and ‘unnecessary’ travelling time. This difference in viewpoint might be explained by the fact that although Taiwan is a small and overpopulated region, it does not have the traffic problems found in Beijing, and so CSL students can much more easily access ‘real’ TCSL teachers without having to spend a great amount of time in travelling. Conversely, in a big city like Beijing, where traffic congestion is a severe problem, CSL online tutoring courses offer a convenient ‘solution’ to the burden of travel – one that is welcomed by teachers and
foreign students alike. Certainly, this helps to explain why CSL online tutoring courses are embraced differently in different geographic regions where Chinese is the first language.

4.2.3.3 Subsection Summary

In summary, in looking at e-learning in TCSL in practice (4.2.3), differing viewpoints and contradictions between the participants’ perspectives have been revealed. With respect to CBT applications in TCSL in practice, although most of the participants regarded e-learning as an inevitable trend in TCSL – and acknowledged the availability of a wide range of technologies for assisting and enhancing TCSL – their own observations and personal experience suggested that it was not commonly used in practice. Further, ICT-related equipment was generally insufficient in many CSL classrooms in Taiwan as well as several other countries. In discussing the application of WBT in TCSL practice, preferences for online tutoring courses differed with respect to geographic location of Taiwan and Beijing.

4.2.4 Section Summary

This section has sought to investigate secondary research question 1. It focused on three aspects: participants’ perceptions of e-learning, their perspectives on e-learning in TCSL, and their personal experiences and observations in relation to e-learning in TCSL in practice. The first of these, participants’ understanding of e-learning, focused on their understanding of the concept as evidenced in individual interviews with the administrators, instructors and students. In general, and perhaps not surprisingly, the students showed a more overt understanding of the breadth of the term. In part this might have been because there were 11 of them, compared with the two administrators and four instructors. But, more strongly, it might be argued that those coming from an e-generation would be expected, not only to have a greater acquaintance with the term, but also the application of e-technology in general.

In examining participants’ perspectives on e-learning in TCSL, the research looked at what they saw to be the role of CBT and WBT in TCSL practice; their attitudes towards e-learning in TCSL; and the relationship between TCSL teachers’ e-learning competence and job opportunities. With regard to the first of these, CBT and WBT in TCSL, it was
suggested that CBT could assist in learning Chinese characters and improving pronunciation, and WBT offered potential for the provision of online distance learning, after-class online self-learning, and online social media interaction. At the same time, negative aspects were raised, including the undesirability of relying primarily on computer software to type Chinese characters as this could detract from developing adequate handwriting skills. Further, it was suggested that CSL online distance learning might detrimentally limit teacher-student ‘real’ in-person interaction.

The findings reveal contradictions between participants’ views on the future of e-learning in TCSL and their own attitudes towards applying it themselves. Although most of them acknowledged the potential of e-learning in TCSL, only a few envisaged embracing it themselves. With regard to the relationship between e-learning competence and job opportunities, while two instructors (I_1, I_2) and two students (SI_2, SIII_5) acknowledged that this could be beneficial in the future, in reality it was observed that job positions currently did not specify the need for e-learning skills.

Finally, with respect to participants’ personal experiences and observations in relation to e-learning in TCSL practice, it was generally acknowledged amongst the three groups that not only in Taiwan, but in many other countries, e-learning was not strongly evident in TCSL classes. Further, classrooms were commonly seen to be poorly equipped with regard to ICT-related facilities. The interviews also drew attention to differences in attitude to online tutoring courses between Taiwan and Beijing, which relate to the peculiar situation in Beijing where there is acute traffic congestion making it difficult to travel to and from classes for many teachers and students. At the time of the interviews, the market for CSL online courses was relatively limited in Taiwan compared to Beijing where it was flourishing.

4.3 Participants’ Intended Curricula in Relation to E-Learning

This section addresses secondary research question 2: “What intentions and/or expectations did the major stakeholders have in relation to e-learning in the TCSL Master’s program?” It focuses on identifying and interpreting the participants’ intended curricula in relation to e-learning within the Master’s program. In this research, the term ‘intended
curriculum’ refers to “a goal-directed educational plan (or plans) that involves the intentions (expectations or desired aims) for particular knowledge and skills to be taught or learned, and the learning plan (or plans) designed for achieving the intended goals (or expected outcomes)” (cf. section 2.1.4).

Hence, the findings discussed in this section will focus first on the expectations of each of the three groups of participants regarding the essential competencies that Master’s students require in relation to TCSL in general; secondly, and more specifically, the section will examine the intended e-learning related knowledge and skills that could be included in the Master’s program; and thirdly, it will investigate the envisaged teaching plans of the administrators and instructors, and the learning plans of the students, with respect to e-learning. This will lead to a discussion of similarities and differences regarding the ‘intended curriculum’ with respect to e-learning among the three groups of participants (administrators, instructor, and students). To assist in succinctly presenting the results, the discussion will make use of tables. It should be noted that the responses presented in these tables are examples of what was said rather than all of the responses of all of the participants. The purpose of this was to illustrate trends.

4.3.1 Administrators

The interviews with the two administrators drew attention to three main issues in relation to the intended curriculum: 1) the essential competencies the TCSL Master’s students were expected to possess, 2) the e-learning related capabilities the students were expected to acquire by the end of the program, and 3) their plans for enhancing students’ e-learning capabilities
Table 4.7 The essential competencies identified by administrators expected of students

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being proficient in Chinese language knowledge and skills</td>
<td><em>S/he [the Master’s student] is expected to be proficient in Chinese language, especially in Chinese pronunciation. [A_1]</em></td>
</tr>
<tr>
<td></td>
<td><em>Enhancing students’ language competence is one of our core objectives; it includes Chinese language and foreign languages, as well as the comparative analysis of Chinese language and other languages. [A_2]</em></td>
</tr>
<tr>
<td>Being proficient in traditional, face-to-face classroom pedagogy</td>
<td><em>As a TCSL teacher, you have to teach well in the classroom, because classroom teaching is the norm in L2 teaching in Taiwan. [A_1]</em></td>
</tr>
<tr>
<td></td>
<td><em>Effective classroom teaching pedagogy is a prerequisite. [A_2]</em></td>
</tr>
<tr>
<td>Having a strong knowledge of Chinese linguistics</td>
<td><em>That is, Chinese linguistics, which involves Chinese syntax, Chinese pragmatics, semantics, etc. [A_1]</em></td>
</tr>
<tr>
<td>Being knowledgeable in the theories of L2 acquisition</td>
<td><em>Language acquisition, that is, knowing how non-native Chinese speakers learn Chinese. [A_2]</em></td>
</tr>
<tr>
<td>Being able to adapt well to the cultural diversity found in different teaching environments</td>
<td><em>We should say that all our students are expected to have the ability to teach abroad. ... They need to understand the pedagogy and be competent in relating to and interacting with foreign students. [A_1]</em></td>
</tr>
</tbody>
</table>

**Reflections:**
1. The administrators’ expectations regarding the capabilities of the Master’s students focused mainly on what existed in traditional qualifications for TCSL teachers.
2. E-learning related competence was not mentioned by the administrators as an important criterion in terms of the objectives of the Master’s program.
Table 4.8 The e-learning capabilities expected of Master’s students by the end of the program

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
</table>
| Not requiring/expecting the students to apply e-learning related knowledge or skills in the classroom | *E-learning is not part of the mainstream in terms of TCSL practice, and there are not many chances for them [the Master’s students] to use it in their teaching.* [A_1]  
We do not require our students or teachers to apply e-learning in their teaching. [A_2]  
We expect our students are able to teach effectively even when they have no teaching aids at hand. ... That is, I always assert that it [e-learning] is merely a supplementary aid that cannot become a core or essential component of teaching. [A_2] |
| Being proficient in using e-learning related skills and knowledge for pre-class preparation | Of course, pre-service teachers would need to be able to use computers to help them prepare for class handouts. They have to know what websites to go to and how to transform materials downloaded from websites into teaching materials. [A_1] |

**Reflections:**

1. The administrators did not believe it necessary that students apply e-learning skills in the classroom, and they did not consider this aspect to be an essential (core) element for inclusion in the Master program.
2. Proficiency in using e-learning related skills and knowledge in preparing for classes was considered important.
3. Neither of the administrators mentioned online distance teaching as an expected e-learning capability that the Master’s students need to learn about.
Table 4.9 The administrators’ plans for enhancing students’ e-learning capabilities

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offering two e-learning specific electives from a choice of more than 30 electives (of which students had to choose five). [Taken from the Institute’s website.]</td>
<td>The two e-learning specific electives were <em>Computer-assisted Instruction in Chinese</em> (電腦輔助教學) and <em>Information Processing in Chinese</em> (中文資訊處理) [Taken from the ‘Curriculum Framework’ for the Master’s program on the Institute’s website.] These are both taught by A_1.</td>
</tr>
</tbody>
</table>
| Not envisaging adding any more e-learning focused courses into the program | *I don’t think we need to arrange more e-learning specific courses* [A_1]  
*Relatively speaking, e-learning has no ultimate importance. ... And, it would have implications for the existing structure of the program, you know! For instance, our Master program requires 36 credits – so how many credits of e-learning [specific courses] would you include?* [A_1]  
*We have only 36 credits for the Master program, and the e-learning specific courses are fixed – the two that we already have. We have no plan to add new courses in this regard.* [A_2] |
| Integrating e-learning into general courses                                | *Of course there could be so-called potential learning that might arise with developments in digital technology. But this would not result in the need for an additional individual course. I would envisage it simply being incorporated into an existing course.* [A_2] |
Providing extracurricular activities

<table>
<thead>
<tr>
<th>Reflections:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Both of the administrators regarded the existing two elective e-learning courses as being adequate. There were no plans to expand the number of such courses.</td>
</tr>
<tr>
<td>2. Rather than expanding the number of e-learning specific courses, it was considered that integrating the need for any additional e-learning into existing general courses and providing extracurricular activities, such as workshops, were adequate in addressing any further e-learning ‘requirements’.</td>
</tr>
<tr>
<td>3. It could be argued that the extremely small proportion of e-learning electives (two) among an overall offering of more than 30 electives was relatively ‘unbalanced’. Further, it is of concern that neither administrator envisaged that the number of electives would be increased. Such a lack of emphasis on e-learning in a Master’s degree of this nature has strong implications for the subsequent teaching of those who graduate from the program. Not only will they not have been presented with a wide range of personal and teaching skills with respect to e-learning – but they may not be exposed to the potential benefits of e-learning in second language acquisition.</td>
</tr>
</tbody>
</table>

In summary, the capabilities identified by the administrators as key prerequisites for the Master’s students to qualify as TCSL teachers were proficiency in Chinese language knowledge and skills as well as in-classroom teaching pedagogy; knowledge of Chinese linguistics and L2 acquisition; and the ability to adapt to cultural diversity in the teaching environment. The administrators did not perceive e-learning related knowledge and skills as essential capabilities for their Master’s students and, accordingly, did not expect them to apply much e-learning in face-to-face CSL classroom teaching. The notion of competence in online distance teaching was not even mentioned as an expected e-learning capability for students. At most, acknowledgement was made of the possible use of e-tools for pre-lecture preparation, such as making teaching aids. They had somewhat limited expectations of any future need to enhance students’ e-learning capabilities, believing that the two elective e-learning specific courses (among an offering of over 30) were sufficient and, if necessary,
could be supplemented by integrating aspects of e-learning into more general courses or through the provision of extracurricular activities; to add additional courses would, they believe, affect the overall ‘balance’ of the program. Such an attitude is not conducive to encouraging students to strongly value e-learning and incorporate it into their own teaching.

4.3.2 Instructors

Four main issues were drawn from the data analysis in relation to the curriculum the instructors considered important. The first two parallel those discussed by the administrators: a focus firstly on the essential TCSL competencies that the Master’s students were expected to possess after completing the program, and secondly on the specific e-learning related capabilities that they were expected to develop.

Following this, two further issues were examined – the e-learning capabilities in relation to synchronous online distance learning that the instructors expected the Master’s students to develop, and the instructors’ plans for enhancing students’ capabilities in TCSL synchronous online distance teaching. These two issues were raised because two of the participating instructors (I_1, I_3) were involved in teaching a government-supported synchronous online learning workshop. The workshop was a Taiwan Government-, National Science Council (NCC)-funded TCSL e-learning teacher training project. It was a long-term project that the Institute, which is the focus of this study, had been entrusted to conduct for more than 10 years. This workshop occurred in co-operation with many overseas universities (e.g. in Japan, Germany, and the USA). It provided not only CSL online teacher training but also synchronous online teaching practice opportunities for the Master’s students. All of the students in the Institute were able to access the workshop (offered once a year) – either voluntarily or as a requirement of a particular course they were taking.
Table 4.10 The essential competencies the instructors expected the TCSL Master’s students to possess after completing the program

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Example</th>
</tr>
</thead>
</table>
| Being proficient in Chinese language knowledge and skills | *The phonology, the culture, and the syntax of the language are the core of the teaching, and this is vitally important.* [I_2].  
  *An intimate knowledge of the language is essential* [I_4] |
| Being proficient in pedagogy                    | *Pedagogy is essential for being a good [TCSL] teacher – and this includes knowledge of a range of effective teaching methods.* [I_2]  
  *Effective pedagogy is just as important as the content to be taught – and they should be weighted equally* [I_4] |

**Reflections:**

1. Two of the instructors considered a high proficiency in all aspects of the Chinese language, along with advanced pedagogical skills, to be essential capabilities for the Master’s students.
2. Neither of these instructors identified e-learning related skills and knowledge as essential competences to be acquired by the Master’s students.
Table 4.11 Instructors’ perceptions of e-learning related capabilities that the Master’s students were expected to develop

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-learning is not seen to be essential in traditional classroom teaching</td>
<td>‘Real person’ face-to-face classroom teaching is still the best way for language learning. ... It seems that most educators don’t consider e-learning to be an essential capability for a TCSL teacher. [I_3]</td>
</tr>
<tr>
<td>Being able to use e-learning related skills and knowledge to assist in preparing teaching aids.</td>
<td>They [the Master’s students] should be able to use e-learning to assist in preparing teaching materials. ... The students have to have basic computer skills, including editing and web-page design. [I_4]</td>
</tr>
</tbody>
</table>

Reflections:

1. Two of the instructors made no mention of any e-learning capability that they expected the Master’s students to develop. Of the remaining two, one regarded the development of e-learning related capabilities as unimportant, and the other acknowledged its importance only in relation to the preparation of teaching aids.
2. None of the four instructors made any mention of the Master’s students needing to develop online distance teaching skills in regard to e-learning.
Table 4.12 The e-learning capabilities in relation to synchronous online distance learning
the instructors expected the Master’s students to develop

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Being proficient in using relevant hardware and software</td>
<td>More important is to teach these [CSL] student-teachers how to use hardware and software. Even those who belong to the digital natives still need to be taught how to use new software programs. [I_1]</td>
</tr>
</tbody>
</table>
| Being proficient in performing effective online interactions | [Online teaching skills] include body movements, using guided questions, and developing interaction skills that get across the barrier of the screen. [I_1]  
  In online video conferencing, the student teachers have to learn how to pose questions [taking account of the fact that they are on camera and there can be a time-lag], design activities [in the light of the space constraints], and correct errors. [I_3]  
  In online video conferencing, implementing role-play activities needs some particular skills to make it work. [I_3] |
| Being skilled in online intercultural (cross-cultural) communication | [Because subtleties can sometimes be missed in online teaching] an even stronger understanding of cross-cultural communication is important. [I_1] |

Reflections:
According to the responses of the two instructors who were involved in the government-
supported synchronous online learning workshop, the essential skills that the Master’s students were expected to obtain were: relevant hardware and software skills, teaching skills that recognised the special requirements of effective online video-conferencing teaching, and an ability in cross-cultural communication skills that acknowledges any lack in subtlety resulting from the barriers of the screen and the web technology itself. (With regard to this last point, it is worth noting that e-learning nonetheless has the potential to bridge some ‘cultural barriers’ and save the embarrassment that may arise for people from different cultural backgrounds in ‘real’ face-to-face communication).

Table 4.13 The instructors’ plans for enhancing students’ capabilities in TCSL synchronous online distance teaching

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providing a 15-hour workshop</td>
<td><em>I organize a [TCSL synchronous distance learning] workshop [once] every year. The duration of the training might differ slightly every year, but is normally about 15 hours [5 sessions x 3 hours]. [I_1]</em></td>
</tr>
<tr>
<td>Providing practicum opportunities immediately after the class</td>
<td><em>The practicum is very important as well. ... If the students are given an opportunity to apply their activity designs to video-conferencing teaching right after a class, it will help them to become more aware of any particular issues. [I_3]</em></td>
</tr>
</tbody>
</table>

**Reflections:**

1. It was stressed earlier that the Master’s program did not provide formal courses for synchronous online distance learning, rather, there was a 15-hour workshop offered once a year.
2. One of the instructors suggested that providing an opportunity for students to put into practice what they had learned in a class immediately after the class itself was an excellent way of reinforcing the learning.

Similar to the findings for the administrator group presented in Tables 4.7 and 4.8, the instructors stressed the importance of proficiency in the Chinese language and strong pedagogic skills in TCSL for qualified teachers. Strong e-learning related skills on the part
of the Master’s students were not expected. In examining e-learning abilities in relation to synchronous online distance learning that the instructors expected the Master’s students to develop, the findings presented in Table 4.12 drew attention to several. These raise a number of pertinent considerations. Table 4.13 highlighted the 15-hour government-sponsored online learning workshop that was available to the students who were interested in working further in this field. The workshop provided not only relevant theory, but important practical experience.

4.3.3 Students

The notion of the ‘intended curriculum’, as previously discussed, refers to desired aims, requisite knowledge and skills, and appropriate teaching and learning plans. With respect to the students’ intended curriculum in relation to e-learning, four main issues can be discerned. As with the preceding two groups, the first issue interprets the essential TCSL competencies the Master’s students are expected to learn or improve as a result of completing the program. The second issue concerns students’ attitudes towards enhancing personal e-learning competence, whilst the third examines the e-learning related knowledge and skills they intended to learn or improve during their period of study within the program. The final issue examines the students’ intended plans for enhancing personal e-learning related capabilities during the Master’s study.
Table 4.14 The essential TCSL competencies the Master’s students expected to learn or improve after completing the program

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSL teaching competences</td>
<td>Of the two, it’s my [CSL] teaching ability that I want to improve – not my e-learning ability. [SI_1]</td>
</tr>
<tr>
<td></td>
<td>I want to improve personal [CSL] teaching ability but not e-learning ability. [SII_1]</td>
</tr>
<tr>
<td></td>
<td>For the new comers [in TCSL] like us, what we really need is the [CSL] teaching skill. [SIII_1]</td>
</tr>
<tr>
<td></td>
<td>I think the most important thing [to me] is the actual [CSL] teaching skills. [SIII_4]</td>
</tr>
<tr>
<td></td>
<td>The main thing I want to improve is the ability to interact and communicate with [CSL] students as well as class-management. [SIII_5]</td>
</tr>
<tr>
<td>Language teaching theories</td>
<td>I want to learn the theories of language teaching [SI_1]</td>
</tr>
<tr>
<td>Chinese linguistics</td>
<td>The two most important subjects I want to learn are [Chinese] linguistics and [CSL] teaching techniques [SII_4]</td>
</tr>
<tr>
<td>Chinese language skills</td>
<td>I think the most basic thing to be proficient is [Chinese] language skills. [SIII_5]</td>
</tr>
</tbody>
</table>

**Reflections:**

1. CSL teaching capabilities, language teaching theories, Chinese linguistics, and Chinese language skills were the knowledge and skills that the Master’s students intended to learn or improve.
2. E-learning related capabilities were not mentioned as a major concern in relation to the essential competencies the students hoped to obtain from the program.
Table 4.15 Students’ attitudes towards enhancing personal e-learning competence

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
</table>
| No stated desire to improve e-learning related capabilities | I want to improve my teaching ability but not my e-learning ability [SI_1]  
No, I never thought of it (e-learning), because I don’t think I will use this in the future. [SII_1]  
I think whoever wants to become a good TCSL teacher should not spend too much time on e-learning. Learning about language structures is much more important than learning about e-learning. [SIII_1]  
I’m not interested in it at this moment. I don’t think that distance learning is as good as some say. [SIII_4] |
| Stated desire to improve e-learning related capabilities | I will take them [the e-learning courses] because it [e-learning] will be the trend in the future. [SI_2]  
I feel I will need it [e-learning competence], it is the trend, and I hope we can have expert instructors who will be able to teach us about it. [SII_2]  
I want to improve my e-learning capabilities. I think my [future] students would be interested in it [e-learning] as well. [SII_4]  
By the time I become a teacher, I will need to use e-learning. I felt this is very important; it’s not just desirable, but essential. Everyone will use it in the future. If language teachers don’t know how to use it they will be out of sync with their students and colleagues. [SIII_3]  
I want to learn about e-learning [distance learning] and I will need it, because, apart from |
classroom teaching, it will become one of the important aspects of [CSL] teaching. [SIII_5]

Reflections:

1. These examples show some mixed reactions towards e-learning, some students saw little or no relevance, but others had a much more positive attitude and were strongly committed to its importance in CSL teaching and learning. This is evident across all three student sub-groups. The failure to recognise the importance of e-learning is particularly interesting in that this cohort of participants, unlike the instructors and administrators, mostly come from the e-learning generation.

2. In comparison with their attitudes towards e-learning in TCSL (4.2.2.3), not surprisingly, with one exception (SII_4), those who did not see its relevance were much less likely to be interested in enhancing their personal e-learning competences. SII_4 did concede that if needed, it could be done through self-learning.
<table>
<thead>
<tr>
<th><strong>Major foci</strong></th>
<th><strong>Examples</strong></th>
</tr>
</thead>
</table>
| **Ability to effectively integrate e-learning into TCSL practice** | *The teacher could show us how to use the available software programs to assist TCSL practice. [SI_1]*  
*I want to learn how to search for e-learning related resources and how to apply them [in my teaching practice] – they’re the two main issues for me. [SII_4]*  
*Web-search is now very easy and handy. So we don’t have to learn how to make our own [software] programs – just where to go. And I would like to learn how to use them and integrate them into my teaching practice, including using them as a platform for student-teacher interaction. [SII_2]*  
*I don’t need to learn how to use the software, because nowadays most of the software programs are user-friendly. … I want to learn how to use them in my teaching. [SIII_3]* |
| **Using available software in the preparation of teaching aids.** | *I want to improve my video editing skills. Does it count [as part of e-learning]? I hope I will be able to edit video clips, for instance, for teaching the syntax of a phrase. (SII_4)*  
*I want to learn something about making teaching aids. I want to be able to edit video clips and use audio software. [SIII_1]*  
*I first want to learn how to use the more commonly used computer software programs, for instance, the making of video clips. [SIII_2]* |
<table>
<thead>
<tr>
<th>Knowledge about available e-tools</th>
<th><em>I would be interested in the courses that teach us what software programs or websites are beneficial for CSL learners.</em> [SIII_4]</th>
</tr>
</thead>
<tbody>
<tr>
<td>The basic concept of e-learning</td>
<td><em>I want to learn the whole concept of e-learning, such as its history and all that it involves.</em> [SI_1]</td>
</tr>
</tbody>
</table>

**Reflections:**

1. Using e-tools for preparing teaching aids and effectively applying e-technology in TCSL practice were the two main goals identified by the Master’s students.
2. Online distance teaching capabilities, for instance synchronised online video-conferencing, was not mentioned.
Table 4.17 Students’ intended plans for enhancing personal e-learning related capabilities during the Master’s study

<table>
<thead>
<tr>
<th>Major foci</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taking semester-long relevant courses</td>
<td><em>I hope the program will provide some e-learning specific courses and introduce us to more popular e-learning software. [SIII_3]</em></td>
</tr>
<tr>
<td>Attending seminars</td>
<td><em>They could invite guest speakers who are specialised in digital teaching materials to give us lectures. [SIII_1]</em></td>
</tr>
<tr>
<td></td>
<td><em>It would be helpful if they invite more guest lecturers who are professional and expert in this area. [SIII_3]</em></td>
</tr>
<tr>
<td>Attending short-term workshops</td>
<td><em>Becoming competent in e-learning won’t take me more than a few days, one to two weeks – or one month at the most. I don’t think I would need more [formal] courses. Short-term workshops may help. They don’t need to be a whole semester; a couple of days for a workshop would be quite enough. [SIII_1]</em></td>
</tr>
<tr>
<td>Self-learning</td>
<td><em>The Internet is very handy nowadays. If I want to learn any software programs, I need only Google and will receive responses right away; it is not really necessary to learn it through [formal] courses. ... I think I only need a platform through which the institute could pass information on to us, and that would be quite enough. [SII_4]</em></td>
</tr>
<tr>
<td></td>
<td><em>E-learning application capability? I don’t need to do anything formally; if I need it, I can access information from a useful website. (SIII_4)</em></td>
</tr>
</tbody>
</table>
**Reflections:**

1. Most significantly, only one student saw the need to take formal, semester courses in e-learning. Interestingly, he was the only student who expressed a strong willingness to apply e-learning in his future teaching. He also liked the idea of seminars about e-learning. Some others favoured less formal seminars, workshops, or self-learning.

2. This suggests that the notion of there being additional, semester-long relevant courses in e-learning to the two already offered was not, overall, seen to be important.

The findings presented in Table 4.14 has shown that e-learning related abilities were not seen to be a major concern in terms of what the students expected to learn or improve as a result of completing the program. This attitude concurs with that of the administrators and instructors. Table 4.15, regarding the students’ attitudes towards enhancing personal e-learning competence, revealed that some saw it having little or no relevance, whereas others were much more positive. Table 4.16, which addressed the e-learning related knowledge and skills that students wished to learn or improve, emphasised the use of e-tools for preparing teaching aids and the effective application of e-technology in TCSL practice. No mention was made of online distance learning. As for their intended plans for enhancing personal e-learning abilities (Table 4.17), only one student expressed a desire for additional formal, semester courses, whereas others considered the possibility of taking seminars, workshops, or merely engaging in self-learning.

**4.3.4 Section Summary**

This section addressed secondary research question 2: “What intentions and/or expectations did the major stakeholders have in relation to e-learning in the TCSL Master’s program?” The findings discussed in this section focused on three aspects: firstly, the expectations of each of the three groups of participant’s regarding the essential competencies that Master’s students require in relation to TCSL in general; secondly, and more specifically, it examined the intended e-learning related knowledge and skills that could be included in the Master’s program; and thirdly, it investigated the envisaged teaching plans of the administrators and instructors, and the learning plans of the students, with respect to e-learning.
With regard to the first of these, the findings showed that there was little or no commitment by any of the three groups to developing e-learning competence. With regard to the second aspect, the intended e-learning related knowledge and skills that might be included in the program, e-learning was seen by the groups primarily in relation to the preparation of lectures and the development of teaching aids, while the fostering of online distance learning skills was not an expectation. Of the three groups, the students had the highest degree of expectation with respect to the development of e-learning capabilities. Within each of the three student sub-groups, whilst there were those who had high expectations, there were others whose expectations were relatively low. This having been said, across the three sub-groups there was some evidence of a desire to become familiar with key available e-tools and to effectively integrate e-learning into their teaching practice.

The third aspect of this section focused on the envisaged teaching plans of the administrators and instructors, and the learning plans of the students, with respect to e-learning. It was seen that the administrators had limited expectations of any future need to enhance students’ e-learning capabilities, believing that the two elective e-learning specific courses were, essentially, sufficient. Whilst the instructors, between them, also had somewhat limited expectations. Two were teaching a government-sponsored 15-hour synchronous online distance learning workshop; one of them suggested the desirability of students having the opportunity to put into practice what they had learned immediately after each class. As a group, some of the students saw the need for seminars, workshops, or self-learning with respect to e-learning – but not the need for any additional formal, semester-long courses.

4.4 Participants’ Enacted Curricula in Relation to E-Learning

The previous section examined participants’ intended curricula: that is, their intentions and goal-directed educational plan with respect to their curricula. This section aims to exemplify participants’ enacted curricula as a means of addressing secondary research question 3: “How did these major stakeholders enact their expectations in relation to e-learning in the TCSL Master’s program?” The term enacted curriculum in this research refers to “a practical action-related process that involves the operation of the intended
curriculum” (see also section 2.1.4). Hence, the examination of the participants’ enacted curricula focuses on what actually happened when participants’ intended curricula were carried out by the three main groups of participants. The findings of this section first present how the administrators enacted their intended curricula, followed by how the instructors received the administrators’ intended curricula and how they enacted their own intended curricula and, finally, how the students enacted curricula corresponding to the administrators’, the instructors’ and their own intended curricula.

4.4.1 Administrators

As discussed in the section on the Administrators’ Intended Curricula (section 4.3.1), although e-learning related capabilities were not considered requisite to the completion of the Master’s degree, they were not completely excluded from the program. The administrators intended that the students would have access, if they chose, to three means of enhancing their e-learning related knowledge, skills, and applications in TCSL. The plans involved: 1) providing two e-learning specific courses, 2) integrating e-learning into general courses, and 3) providing extracurricular activities such as seminars and workshops. The following discussion will examine how the plans of the two administrators were actually carried out within the Master’s program. It should be noted that the administrators variously performed two roles: firstly, one of management, and secondly and not infrequently, that of instructor or teacher. The following discussion, therefore, encapsulates both of these roles.

4.4.4.1 Providing Two Elective E-Learning Specific Courses

In the year the interviews took place, there were two e-learning specific courses, *Computer-assisted Instruction in Chinese*, and *Information Processing in Chinese*, listed as electives in the area of *Chinese Pedagogy*. These two courses had been taught by A_1 only for some years. According to A_1, *Computer-assisted Instruction in Chinese* was primarily designed to introduce the students to current or contemporary e-learning technologies and skills relevant to TCSL. Since the Master’s students were presumed to be familiar with at least basic ICT, such skill training was not considered necessary: “The students have no
need to learn computer skills because they are already good at using computers; they won’t have any problem in this regard” [A_1].

Computer-assisted Instruction in Chinese involved e-learning knowledge and skills as a means of assisting the main language skills such as pronunciation, listening, speaking, reading and writing. The course focused not only on enhancing the students’ abilities to select appropriate e-tools for different language skills accordingly, but also on ensuring their ability to use them most effectively. In other words, the students were not encouraged to blindly apply whatever e-tools they had learned in all the sectors of their teaching (A_1).

A_1 used Chinese-character teaching as an example to illustrate his point that it is a student’s ability to choose the appropriate e-tool according to the situation that is more important than just knowing how to use the tools per se:

There are many skills necessary in Chinese-character learning that a TCSL teacher has to cover. Computer technology might be helpful in teaching certain skills, but not necessarily suitable for teaching others. In other words, in the whole range of Chinese-character teaching, computers could be used positively or negatively, depending on the content and the learning situation. ... If students don’t know how to make appropriate choices, they could make mistakes. This course therefore provides training in this regard. [A_1]

It should be noted that a required component of the course, Computer-assisted Instruction in Chinese, was the TCSL synchronous online distance learning workshop that was discussed in the previous section in relation to the instructors. It is worth mentioning here that despite the fact that A_1, who had been the main instructor of the course and the project leader of this government-funded TCSL online distance learning project for years, did not identify online distance learning as one of the essential e-learning capabilities that the Master’s students should acquire.

The other elective e-learning specific course, Information Processing in Chinese, was designed to develop Master’s students’ abilities in relation to Chinese characters. It involved learning Unicode and Big5 (two systems used to assist Chinese word processing) and the use of computer technologies to create a corpus of Chinese characters (A_1).
Although this course was still listed as an elective course in the program, it seemed it was rarely offered.

_We now hardly offer ‘Information Processing in Chinese’ these days. In the past, many people might not have been familiar with Chinese word processing, but these days students in elementary schools learn how to use it. ... In general, our Master’s students’ ICT-related competencies today have exceeded that very basic level._ [A_2]

The standard of students’ ICT skills had improved over the years to render a course of this nature no longer necessary.

### 4.4.1.2 Integrating E-Learning into General Courses

Integrating e-learning into general (non-e-learning specific) courses was another intended approach planned for the enhancement of the Master’s students’ e-learning capabilities. The analysis of this approach focused on the extent to which e-learning related knowledge and skills were actually taught in general courses, and on the e-tools used to assist the teaching process. The findings indicate that two administrators adopted different approaches in this regard. A_1, who was a specialist in Educational Technology and in charge of the two elective e-learning specific courses in the Master’s program, stated that he did not include e-learning related knowledge and skills as part of his non-e-learning specific (general) courses; further, he mentioned nothing in relation to the use of e-tools to assist his teaching:

**R:** Have you included any e-learning related training in your Chinese Language Instructional Design classes?

**A_1:** No. [In this course] every student has their own project. We teach them how to deal with different approaches to language teaching and to design their language classes accordingly.

**R:** Is the Media and Chinese Language Instruction course in some way associated with e-learning?
**A_1:** Media covers a very wide range, such as learning or teaching Chinese through television, movies, and radio – and this is not part of e-learning.

On the other hand, A_2, although a specialist in linguistics, not only included e-learning related knowledge and skills in two of her courses, *Chinese Dialects Teaching Materials and Methods* and *Chinese Acoustic Phonetics*, but also used e-tools in two other courses: *Chinese Language Practice Abroad* and *Chinese Language Teaching Practicum*. As she described it, *Chinese Dialects Teaching Materials and Methods* includes a component entitled ‘Web-resources of Taiwanese dialects’. This component was designed to instruct students in how to collect information from relevant websites, analyse the collected information, and then work together to set up a website for sharing online resources.

In her *Chinese Acoustic Phonetics* course, the students were introduced to software programs designed for Chinese acoustic phonetics analysis. In addition to being introduced to theories of Chinese acoustic phonetics, the students were expected to learn how to use software to analyse Chinese acoustic phonemes and conduct experimental designs for the utilization of such software. A_2 presumed that the students who completed this course were highly likely to use this type of software in their teaching to help CSL students improve their Chinese pronunciation. She emphasised that it was sufficient to include these e-learning skills within the course rather than provide a separate course.

*E-learning is not offered as one individual course. But I might introduce them to software programs in a course like Chinese Acoustic Phonetics, or Chinese Language Teaching Practicum, or any other course that involves Chinese pronunciation.* [A_2]

With regard to using e-tools to assist classroom teaching, A_2 used WBT asynchronously as well as synchronously. In her *Chinese Language Teaching Practicum*, the Web was used asynchronously as a platform for posting students’ presentations for peer sharing and criticizing:
I video-taped my students’ TCSL simulation presentations, then posted the clips online for them to have a chance to review their performance, learn from each other and obtain peer feedback. [A_2]

A_2 also used WBT synchronously for interviewing scholars overseas online in her Chinese Language Practice Abroad classes. The software used in her class was Adobe Connect:

*The students and I all have to learn how to use this software. This type of e-tool could help save time, and it is free from the restrictions of time and location.* [A_2]

However, A_2 also emphasised:

*But I am still able to deliver lectures without the help of the media. So, this media is merely a teaching aid but not the major element of my classes; I still have to keep my class going if it happens that we don’t have the Internet or the Internet connection fails.* [A_2]

Although A_2 was the current director of the Master’s program and had extensive experience involving e-learning in her teaching, she stressed that it was not compulsory for instructors to include e-learning elements into their course content, or to use e-tools in their teaching. They were free to make these decisions for themselves. However, she indicated that if any instructor wished to use e-learning in their courses, they would have the support of the institute.

4.4.1.3 Providing Extracurricular Activities

One more intended plan for assisting the Master’s students to develop their e-learning capabilities was the provision of relevant extracurricular activities such as conferences, seminars and workshops, or keeping them informed of TCSL e-learning related training activities run by other organizations. For example, the institute had been co-hosting a Chinese Internet Education biennial conference for more than 10 years. As for workshops and seminars, A_2 stated:
For activities like workshops or guest speakers, we might consider offering them only if the teachers or students suggested a need for them. ... I organise them and take on the role of facilitator, passing on the relevant information to the students, and I strongly encourage them to participate in such activities. For example, many of our students have attended the TCSL teacher e-learning training programs funded by the Taiwan Ministry of Education because I posted the details on our online bulletin board and informed the students and instructors about it in person. [A_2]

4.4.1.4 Subsection Summary

In summary, the two administrators’ intended plans for enhancing the Master’s students’ e-learning competence entailed 1) providing two elective e-learning specific courses, 2) integrating e-learning into general courses, and 3) providing or facilitating relevant extracurricular activities. In relation to the first of these, in practice only one e-learning elective had been offered in recent years. In terms of integrating e-learning into their personal teaching, the two administrators were quite different with A_1 essentially ignoring it, and A_2 being much more positive and proactive. At the same time, A_2 did acknowledge that e-learning was not regarded as being essential to the program. A_2 was receptive to suggestions from instructors and students for the offering of extracurricular activities.

4.4.2 Instructors

This section presents two main issues regarding the instructors’ enacted curricula; that is, what they actually did. It should be noted that none of the four instructors had taught either of the two specific e-learning electives. Hence, the first issue of instructors’ enacted curricula deals with their enactments in accordance with the administrators’ intended plans in regard to the integration of e-learning in their teaching of general courses. The second issue looks at how the instructors’ intended plans for developing the Master’s students’ e-learning capabilities were implemented in relation to the TCSL synchronous online distance learning government workshop (which was the only specific e-learning focused teaching that the instructors undertook – and even this was only taught by two of them).
4.4.2.1 Integrating E-Learning into General Courses

Here, attention will be given to the instructors’ integration of e-learning into general courses, with particular reference to the e-learning content of the courses and the e-tools that the instructors used in their teaching. Three of the four instructors (I_1, I_2, and I_4) indicated that they did not include e-learning related elements in their general course content. I_1 said that she had not even thought of introducing her collection of online CSL learning resources to her Master’s students before the interview took place:

*My classes are mainly in two areas, linguistics and language pedagogy, including Chinese pedagogy. You are now making me realise that I should have included digital elements in my classes. Mainly, I suspect it’s probably because none of the papers in my selective readings had mentioned e-learning that I didn’t think of including it into my lectures. But in fact, I have collected quite a few Chinese online learning websites, and I should have introduced them to the students.* [I_1]

I_2 indicated that his courses did not involve e-learning related elements because of the peculiarities of the courses:

*The courses I have been teaching are associated more with comparative analysis of English and Chinese, including Chinese syntax, therefore I wouldn’t have a need to put a special emphasis on e-learning in my classes.* [I_2]

However, he did emphasize that he always encouraged his Master’s student to improve their e-learning capabilities:

*I see e-learning as one of the pedagogical approaches. I am in favour and supportive of any attitude or approach that is helpful in better delivering lecture content. So I always encourage my Master’s students to enhance their e-learning capabilities, such as attending e-learning related training workshops.* [I_2]

Somewhat similarly, I_4, who had been teaching courses such as *Chinese Language Teaching Methods and Materials, Psycholinguistics,* and *Seminar in Second Language Acquisition,* showed limited interest in involving e-learning elements as part of the courses’ content, but he did encourage students who were interested in e-learning to take relevant courses:
Actually I hardly include this [e-learning] in my classes. I might introduce some relevant readings to the students, but this won’t be the main focus of my classes. I won’t spend too much time in introducing it. If students show interest in this area I always suggest and encourage them to take Professor A_1’s classes [the specific e-learning elective courses]. [I_4]

With regard to using e-tools to assist classroom teaching, one instructor I_2 indicated that he did not use any e-learning technologies to assist his teaching practice:

I don’t really need to use it [e-learning] in my class because of the class mode. The nature of the class is such that the students present their papers and I provide feedback. [I_2]

It might be argued that such an approach limit the benefits or uses of e-learning. Only slightly stronger was the approach of I_1 and I_4, both of whom indicated using the e-tool, Modular Object-Oriented Dynamic Learning Environment (Moodle):

I_1: The classes I’m teaching now are all Master’s degree courses, and Moodle is the only [ICT related] tool I am using now.

R: Nothing else?

I_1: No.

I_4: I tend to have more chances to use the platform [Moodle] when I am teaching big classes. If the class is small, I would prefer to use traditional e-mail to deal with the matters. [I_4]

He further explained that he would use Moodle for collecting and marking assignments or posting announcements and supplementary teaching materials.

Whilst I_3 made no mention of using any aspect of e-learning in her teaching of general courses, it is not necessarily the case that she ignored it. Her focus was strongly on the TCSL synchronous online distance learning government workshop that she taught.
4.4.2.2 TCSL Synchronous Online Distance Learning Workshop

The TCSL synchronous online distance learning workshop taught by I_1 and I_3 was a government-funded teacher training project. The aim was to prepare pre-service TCSL teachers in the use of synchronous video-conferencing software, such as JoinNet, to teach Chinese online. These instructors indicated that the workshop was normally of 15 to 18 hours’ duration, varying slightly in different years. It was delivered in three-hour lectures weekly, with each lecture focusing on one particular subject such as hardware and software familiarisation, and the development of various online CSL teaching skills. After completing the course training, the Master’s students were assigned one or two hours’ of online teaching practicum working with CSL students in foreign countries. Former students were sometimes invited to share their experiences.

The workshop aimed to develop skills associated with synchronous online teaching that differed from traditional classroom teaching. Such skills, as mentioned by I_1 and I_2, include online interaction skills, online question guiding, online class activity design, and online student oral error correction. The workshop also contained a section that especially focused on online interaction skills.

*There are so many little features to be conscious of, such as eye-contact and body posture in front of the webcam. A teacher who has had no [online teaching] experience will tend to look at the screen and not the webcam, and that makes the student at the other end feel that the teacher is not looking at him or her. So the teacher has to learn how to look at the webcam and the screen at the same time. Also, teachers sometimes sway back and forth in front of the webcam and that blurs the images at the other end. So, the teachers have to learn appropriate body movements. [I_1]*

Learning how to adjust to the lag caused by transmission on the line, to avoid voice-overlapping during online conversation, was the other point mentioned by I_1.

In regard to online class activity design, I_3 mentioned that the instructor would normally begin by providing sample model activities for the Master’s students to practise online. After this, students would be asked to design their own 15-minute online class
activity. I_3 also cautioned that some activities, such as role-play, might work well in traditional classroom settings, but might not be effective with online video-conferencing.

Towards the end, the workshop involved practicum opportunities for the Master’s students to teach foreign CSL students online:

*We will arrange teaching practice opportunities for the students. The CSL students could be in different countries and at different levels of achievement. For example, when we originally began conducting the workshop we cooperated with universities in the States; last year, we worked with the students in Japan. [I_1]*

However, I_3 pointed out that it would be ideal if the Master’s students could really apply their online class activity design immediately after each class so that be able to test what they learned from the class in a real online teaching situation. However, the practicums were scheduled after completing the whole training courses:

*They did not practise online teaching right after my class. They would do their practicums after the whole training courses were completed and it would be one or two months later. [I_3]*

One more problem mentioned by I_3 was that there were no instructors to provide supervision when the Master’s students were carrying out their online teaching practice:

*Supervising them when they engage in their online teaching practicum? No, because it is distance learning, it is online, they can freely choose wherever they like for the practicum, and they might decide to do it at home. [I_3]*

One enactment that was not mentioned in the instructors’ intended plans (Section 4.3.2) was that of students and others sharing their course experiences.

*We arranged meetings for experience sharing. Besides peer sharing, we also invited former students who had completed the workshop to share their experiences with the Master’s students. [I_1]*

Such a sharing activity could have strong pedagogical value.
4.4.2.3 Subsection Summary

The findings in regard to instructors’ enacted curricula focus on two main issues: the instructors’ enactment of the integration of e-learning into general courses, and the government-supported synchronous online distance learning workshop. The results suggested that the integration of e-learning into (formal) general courses was rather insignificant – three of the four instructors indicated that they did not involve e-learning knowledge and skills in their course content. However, two of these three instructors mentioned the e-tool, Moodle, and all three, whilst not incorporating e-learning into their own teaching, were open to its possibilities. One of the three was already considering adding e-learning elements into her course content, and the other two had been encouraging their students to explore the possibilities of e-learning for themselves.

Two of the instructors did teach the TCSL synchronous online distance learning workshop, one of these being the instructor who was considering introducing e-learning into her general courses. As discussed, this government-sponsored workshop developed TCSL skills associated with synchronous online teaching that differed from traditional classroom teaching. Two concerns that were identified related to the practicum component: the time gap between lectures and the practicum, and a lack of supervision of the practicum. Commendably, former students of the workshop were invited to share their experiences.

4.4.3 Students

The analysis of the students’ enacted curricula focuses on what they did to improve their e-learning capabilities during their enrolment in the Master’s program. It involves their learning with respect to the courses within the Master’s programs, their extracurricular activities, and their self-learning.

4.4.3.1 Learning within the Master’s Programs

As mentioned previously, the Master’s program offered two e-learning specific elective courses, Computer-assisted Instruction in Chinese, and Information Processing in Chinese, as electives. Of the eleven students, SIII_2 was the only student who had taken Computer-assisted Instruction in Chinese, and SII_2 and SII_3 were the only two students
who had taken *Information Processing in Chinese*. These two students were in their last semester of the program. It will be recalled that A_2 had mentioned that this was no longer offered on a regular basis. Both students stated that the contents of the course were rather broad and basic:

*I felt that the course was rather broad. It mostly taught us how to put things onto a computer. I remember that we started with how to make PPT – very basic stuff. And this is the only [e-learning related] course that I have ever taken in the program.* [SII_2]

*I took 'Information Processing in Chinese'. It was taught by Professor A_1. ... We learned basic computer skills, like making webpages, what else? ... [pause], searching for online resources, and [Chinese] input skills.* [SII_3]

Commenting on *Computer-assisted Instruction in Chinese*, SIII_2 mentioned that, in addition to an introduction to the current situation regarding computer-assisted learning, one of the most beneficial sections of the course was the synchronous online distance learning workshop.

In response to a question on the course content, S_1, SII_2, SIII_2 and SIII_3 said that no e-learning knowledge and skills were included in their general courses:

*No! What they taught were [Chinese] syntax, fundamental theories, and teaching methods.* [SI_1]

*No! The courses I have taken were mostly about theories of education, like educational cognition, psychology, or Noam Chomsky and the like.* [SIII_2]

*In fact, e-learning is hardly mentioned in this Master's program, unless you attend some [relevant] seminars.* [SIII_3]
SII_3 responded that although the teachers she had taken courses from did not involve e-learning as part of the course content, they always encouraged the students to independently explore e-learning related knowledge and skills.

In response to the same question, other students (SII_1, SIII_1, SIII_5) provided different information, stating that the courses they had taken, such as *Theories and Applications of Chinese Characters* and *Study of Language and Culture*, had included e-learning related elements. In *Theories and Applications of Chinese Characters*, SII_1 indicated that she had learned various computer software programs for analysing Chinese words and phrases, and designing materials for teaching Chinese characters. SII_1, SIII_1 and SIII_5 stated that the synchronous online distance learning workshop was a component of the course *Study of Language and Culture*.

It should be noted that the workshop could be included as a component of e-learning specific elective courses, or of any general course (not only *Study of Language and Culture*) as well as simply being an extracurricular activity.

When the students were asked if the teachers used e-tools, they mentioned PPT, Moodle, digital audio-visual devices, and Adobe Connect (software for video-conferencing), with the first two being those most frequently mentioned. SIII_1 somehow doubted if PPT could be regarded as an e-tool. Moodle was mostly used by teachers to post course-related materials and to collect homework assignments, according to SII_3, SII_4, SIII_1, and SIII_3. SII_1 added that the use of digital audio-visual devices was limited: “Only one-way, [there was] no online access or interaction”. Adobe Connect was used in *Chinese Language Teaching Practicum* for interviewing scholars overseas during the class (SIII_5).

### 4.4.3.2 Synchronous Online Distance Learning Workshop

Five students (SII_1, SII_4, SIII_1, SIII_2, SIII_5) had attended the government-funded synchronous online distance learning workshop as one of the sections of a course they had taken. SIII_2 attended the workshop as part of the e-learning specific course *Computer-assisted Instruction in Chinese*, whereas SII_1, SIII_1 and SIII_5 took it as part of the general course *Study of Language and Culture*. As described by all of them, the
workshop contained five to six three-hour classes on different topics, with one or two online practicums. The topics included hardware and software familiarization, synchronous online video-conferencing teaching skills, and cross-culture communication issues. SII_1 and SIII_1 indicated that cross-culture adjustment issues rather than hardware and software familiarization was the main focus of the training. SIII_5 pointed out that the online teaching skills such as teacher-student interaction, classroom questioning, and error correction were very different from the traditional approaches.

4.4.3.3 Learning through Extracurricular Activities

In terms of enhancing personal e-learning capabilities through extracurricular activities, three students (SII_1, SII_2, and SIII_1) had attended a TCSL teacher e-learning training program funded by the Taiwan Ministry of Education (as distinct from the synchronous online distance learning workshop). This program, described in the Introduction chapter, aimed to improve TCSL teachers’ abilities to effectively integrate their e-learning knowledge and skills into TCSL practice. However, according to SII_1 and SII_2, the courses they attended focused mainly on how to use the e-tools but rarely involved pedagogical training on how to practically integrate these skills into TCSL practice:

That training program introduced us to a lot of [ICT] tools, but it did not really teach us how to use them in our teaching practice. And the way he [the teacher] used the e-tools for teaching seemed not practical to me. [SII_1]

The training program mostly focused on techniques such as online information processing, but there was very little on the pedagogical application of these techniques [SII_2]

It should be noted that the majority of those teaching this program, although IT specialists, were not CSL teachers.

A further two students (SII_2 and SIII_2) had been assistants for National Science Council (NSC) research projects and had attended a CSL e-learning related conference co-hosted by the Institute. They mentioned three NSC research projects that they had been
assistants for: one concerned digital technology in relation to Chinese character learning (SII_2), another was concerned with online interactive teaching materials design (SII_2), and the third one focused on the evaluation of synchronous online distance learning (SIII_2); A_1 had been the leader of all three projects.

4.4.3.4 Learning through Self-Directed Learning

In addition to what they learned within the Master’s program and extracurricular activities, a number of students indicated that they improved their digital capabilities through self-directed learning. Using the Web as a source for learning, receiving assistance from classmates, and exploring independently were the three most common forms of self-directed learning raised in interviews. For example,

*I go online, it’s super handy, like Yahoo+ or some blogs. I’ve learned a lot from Lien’s TCSL e-learning blog. This blog has a really useful e-learning pack that contains a lot of useful stuff.* [SII_3]

*Nowadays they [software programs] are very user friendly, very convenient. I can learn very quickly from websites and use them right away. I don’t need training or to be taught by others.* [SIII_3]

*If I need to use it, I’ll search online. I can find what I want myself.* [SIII_4]

SIII_1 and SIII_2 said that they would learn from classmates.

**R: How about self-learning?**

**SIII_1:** I will ask classmates.

**SIII_2:** As for the special functions of Excel or Word, I will learn from classmates who are expert in it.

ICT has become increasingly user friendly and is taken up by the digital natives who adapt new e-technology. Three of the students (SII_3, SIII_1, SIII_2) stated that in many
cases ICT skills could be learnt by self-exploration, without needing any form of instruction from others:

*I’m interested in computers, and I mainly acquire new skills through self-learning. Actually, people around my age all have some basic skills such as PPT, or Word, or something like that. … Although I can’t write software programs, I love to try and use all kinds of programs – like, computer software or online software programs for webpage design. [SII_3]*

*I found and figured out many PPT functions by myself, I think [SIII_1]*

*A few days ago, I found … [pause] that I could actually insert subtitles onto YouTube’s film clips. I tried it myself, and I was able to do it. You just have to keep trying – and that’s how I learned to do it by myself: [SIII_2]*

It would seem that students belonging to the digital native generation are, in general, much more familiar with the world of ICT than the students of previous years. This, of course, has some implications for the nature and degree of ICT skills that need to be taught in the Master’s program.

4.4.3.5 Subsection Summary

This subsection examined students’ enacted curricula in relation to the enhancement of e-learning competences from four perspectives: the formal courses within the Master’s program (e-learning electives, e-learning content in general courses, and instructors’ use of e-tools), the government-funded synchronous online distance learning workshop, relevant extracurricular activities, and self-learning.

Of the formal courses that comprised the Master’s program, only two of the students had taken the elective *Information Processing in Chinese*, which was described as rather broad and basic and – as one of the administrators had noted – had rarely been offered in recent years. A third student had taken the elective *Computer-assisted Instruction in Chinese*, which included the government-sponsored synchronous online distance learning workshop; this, he commented, was the most impressive aspect of the course. Of the
general courses, two – *Theories and Applications of Chinese Characters* and *Study of Language and Culture* – were identified as having involved e-learning knowledge and skills as part of the course content. The findings also indicated that, considering the breadth of ICT e-tools that were available, teachers in this Master’s program made relatively little use of them. Given the overall lack of attention to e-learning, as well as the fact that it was not extensively modelled by their teachers, it is not surprising that the students’ enacted curricula experiences were, overall, relatively limited.

Five of the students had attended the government-funded synchronous online distance learning workshop because it was one of the required components of a course they had taken. One student suggested that the workshop attached more importance to cross-cultural communication skills rather than on familiarization with the technology. Another indicated that she learned many teaching skills that were very different from the traditional approaches to teaching.

Most of the extracurricular activities that the students engaged in were funded by the Taiwanese government, for example, a TCSL teacher e-learning training program (attended by three students), and the National Science Council (NSC) research projects, headed by instructors from the Institute (in which two of the students were assistants). It was seen that the TCSL teacher e-learning training program focused on the exploration of e-technology and not pedagogical training, and this could be due to the fact that most of those teaching it were IT experts and had little or no experience in TCSL.

Finally, it has been seen that there was a strong tendency for Master’s students to become familiar with the use of ICT tools through self-directed learning in conjunction with the Web, classmates, or other, independent exploration.

### 4.4.4 Section Summary

The findings presented above addressed secondary research question 3: “How did the major stakeholders enact their expectations in relation to e-learning in the TCSL Master’s program?” by examining their perspectives of their enacted curricula. The discussion focused on the three groups of participants’ (administrators, instructors, and students) report of enactments corresponding to their own as well as other groups’ intended curricula.
The administrators’ enacted curricula addressed three issues: 1) providing two elective e-learning specific courses, 2) integrating e-learning into general courses, and 3) providing e-learning relevant extracurricular activities. The instructors’ enacted curricula focused on their enactment of the integration of e-learning into general courses and the government-supported synchronous online learning workshop. The students’ enacted curricula focused on three aspects: 1) within the Master’s program 2) through extracurricular activities, and 3) through self-learning. The findings discussion now moves to report on how this enacted curriculum is experienced within the Master’s program.

In terms of the two elective e-learning specific courses offered in the Master’s program, of those in the administrator and instructor groups, only one administrator had had experience in teaching them, and only three of the Master’s students had taken one of the courses.

As for integrating e-learning elements into general courses, among the administrator and instructor groups, only one administrator appeared to include e-learning elements in her course content. She was also the one who used synchronous online video-conferencing (Adobe Connect) in her lectures. Despite the extensive availability of ICT tools, relatively few were mentioned across all three groups.

Two of the instructors and five students had experience with the government-supported synchronous online distance-learning workshop. They all concurred that the skills taught were different from traditional approaches to teaching. Importantly, one instructor was critical of the fact that the workshop did not provide actual teaching practice immediately after each lecture and, further, that there was no arrangement for on-site instructor-supervision of the students’ practicums.

Most of the extracurricular activities identified were government-supported e-learning related training programs or research projects. Finally, whilst the administrators were supportive in their attitude towards students’ enhancement of their e-learning competence, they were, at best, facilitators rather than active providers.
4.5 Participants’ Experienced Curricula in Relation to E-Learning

This section presents research findings corresponding to secondary research question 4: “What did these major stakeholders experience in relation to e-learning in the TCSL Master’s program?” The analysis focused on examining participants’ experienced curricula. As described in the Literature Review, the term experienced curriculum in this research refers to “the actual outcomes and experiences resulting from enactments of the intended curriculum” (see also section 2.1.4). This is seen in the following analysis of participants’ experienced curricula.

4.5.1 Administrators

The discussion of administrators’ experienced curricula focuses first on the actual outcomes resulting from their enacted curricula (the implementation of their intended curricula) within the programs, followed by the consequences of these outcomes in the application of e-learning in TCSL practice and their impact on students’ e-learning competence in relation to their job applications.

4.5.1.1 Within the Master’s Program

The following discussion of the administrators’ experienced curricula focuses on the program’s course design in relation to: the elective e-learning specific courses; the integration of e-learning into general courses; and the government-sponsored synchronous online distance learning workshop.

In reference to the design of the Master’s program with respect to the elective e-learning specific courses, A_1 stated that there had not been any change for the 16 years he had been on the faculty at the Institute. Further, he stated that he did not perceive there would be a need for change in this regard. A_2, who had been there for 15 years, confirmed that the fundamental structure of the course design in relation to e-learning had remained basically the same. However, as mentioned in the discussion of the administrators’ enacted curricula (section 4.4.1), some subtle adjustments had been made as a result of the ongoing rapid development and continuing changes in technology in the educational field, for example, one of the elective courses Information Processing in Chinese had rarely been taught in recent years.
In discussing the integration of e-learning elements into general courses, the course *Acoustic Phonetics* was one example singled out during the interviews. A_2, the major instructor for the course, reported that there had been no significant change regarding the introduction of software programs as part of the course content. However, due to the rapid development of ICT and the continual emergence of new software, the software programs introduced have correspondingly varied. A_2 further recalled that, in the earlier days, the first software program used for the course was installed in computers placed in the laboratory. Students who wanted to use the software had to go to the laboratory to use the computers there. Nowadays, the software programs are much more easily accessible and portable. Students can save them on USBs from computers, or download them from the Internet, and use them wherever they want. Further, many new software programs for enhancing Chinese pronunciation continue to be developed and many are free online. Besides the software introduced in class, students might also use other software that suits their personal needs.

*I have to constantly update myself as well. For instance, I am personally familiar with the set of equipment that we have in the Chinese Acoustic Phonetics course, but the students might be more accustomed to using other free software programs [for pronunciation learning]. I just have to keep up with them.* [A_2]

It would seem, given the experience of A_2, that the focus of integrating e-learning content into general courses should not be so much on specializing in particular programs, but, from a pedagogical perspective, ensuring that students will be able to adopt or adapt new programs to assist in their own teaching and their students’ learning. This pedagogical focus should be a major thrust of any e-learning component in general courses; it transcends the ‘impermanence’ of software programs, many of which can quickly become obsolete.

The government-supported synchronous online distance learning workshop was discussed at length. A_1 reported that their Institute had run it once a year for about 10 years. On average, about seven to eight Master’s students each year had participated in this teacher training. Both administrators highlighted some restrictions in synchronous online learning. In acknowledging the differences between traditional classroom teaching and
synchronous online learning, A_1 suggested that the latter could restrict some classroom interaction activities such as role play:

*It is very easy for a language teacher to guide his or her students to perform role-play interactions in a traditional classroom setting, but very difficult to perform them online. There may be two or three CSL students on the other side of the line facing the computer screen in a small room, and that restricts many role-play learning activities.* [A_1]

Another perceived disadvantage related to hardware. A_2 proposed that hardware problems such as poor network transmission, poor sound quality transmission, and network lag that could be disturbing in online communication presented some major barriers for conducting synchronous online distance learning. She further stated:

*Currently, [synchronous online learning] is subordinate to regular class teaching in TCSL. In other words, only where you cannot teach face-to-face would you choose to use online learning. Online learning might be suitable for learning that does not require interaction, such as browsing; whereas learning that requires intensive interaction, such as language learning, would not be suitable for learning online.* [A_2]

Clearly, both administrators had a somewhat limited conception of online learning and the possibilities it offers.

### 4.5.1.2 E-Learning Application in TCSL Practice

Based on their own experience, both administrators posited that e-learning played an insignificant role in TCSL. A_1 stated that he had initially held a supportive attitude towards e-learning when he first entered the field of TCSL, but this changed:

*Similar to many inexperienced people, when I first entered the field of TCSL I regarded computer skills to be very important, and assumed that if all of my students could learn how to use a computer it would be helpful in their future teaching. ... But after I had visited more and more CSL classrooms in universities overseas, I realised that that is not the case. In many universities overseas, they...*
mostly perform drill practice, and the computer is useless in the CSL classroom.

[A_1]

A_1 emphasized that the Institute tried its best to enable the Master’s students to undertake an overseas practicum during their enrolment. He further stated that, after having such TCSL experience, the students would have a better idea about what knowledge and skills were useful and what were not. A_2 stated that many of the senior or graduated students who had taught CSL overseas came back to the school to share their experiences, often drawing attention to the inadequate technology facilities in classrooms. It was not uncommon for them to comment that not all classrooms had computers or access to the Internet for teacher and student use; consequently, teachers had to be prepared to use chalk or whiteboards.

4.5.1.3 E-Learning Competence and TCSL Job Application

In considering the Master’s students’ future job possibilities, A_1 suggested that prospective employers’ demand for e-learning capabilities would be minimal:

40% of our graduated students are teaching in highly prestigious universities overseas, and many of them have no e-learning related skills. The job positions normally do not require e-learning capabilities. ...Based on our actual experience and comprehensive understanding of the real situation abroad, it [e-learning] plays a mere trivial role. But, as I have said, it would be good if one has such skills, but it won’t prevent a person without them from obtaining a job overseas.

[A_1]

4.5.1.4 Subsection Summary

The findings in relation to administrators’ experienced curricula address three main issues: the actual occurrence of e-learning within the design of the Master’s program, the administrators’ experience or observations of e-learning in TCSL practice, and the Master’s degree students’ e-learning competence in relation to TCSL job applications.

In regard to the first issue, it has been seen that the e-learning specific courses within the Master’s program had basically remained the same for at least 15 years and,
furthermore, no major changes were envisaged in the near future. However, relatively minor changes occurred due to the rapid and constant development of technology in the educational field, such as no longer offering the course designed to teach students basic computer skills, and the need to keep abreast in some general courses of newly available software. The discussion of the second and third issues has thrown some light on why e-learning education was neglected in the administrators’ intended curricula. Based on their personal experience, e-learning was rarely applied in CSL classrooms overseas with which they had some familiarity (this was partly, at least, associated with a lack of facilities), and e-learning skills had little or no relationship to TCSL job application success for their recently graduated students.

4.5.2 Instructors

The following analysis of the instructors’ experienced curricula focuses mainly on the synchronous online distance workshop. Their feedback was gained from the interviews with the researcher and reflects their own insights into what they taught as well as student comments. In addition, they discussed technology and recruitment issues, and the workshop design.

4.5.2.1 Instructors’ Teaching

Principally, the instructors’ comments on their own teaching were based on their perception of student satisfaction with the workshops. According to I_1, student feedback from questionnaire surveys expressed a high degree of satisfaction. She further posited that after completing the workshop, students indicated that they had become acquainted with more approaches to TCSL. Moreover, many acknowledged that they needed this type of training.

This raised the problem of a lack of experienced instructors skilled in online teaching. I_3 felt there was a big gap between online teaching and traditional classroom teaching in terms of teaching theories and skills, therefore, having actual synchronous online teaching experience (or at least online video-conferencing experience) was crucial. At the same time, she also stated that, in reality, there were too few instructors in Taiwan who were qualified for employment in the Institute and who had, additionally, synchronous online language
teaching experience. Unfortunately, she opined, the majority of the Institute’s instructors who taught the workshop did not have such experience.

4.5.2.2 Technology and Recruitment Issues

The instructors raised two major issues. The first related to the software used for the synchronous online video-conferencing, namely JoinNet, a program designed especially for language teaching. This software was reported to be unstable and the quality of the sound transmission was poor. Indeed, I_1 and I_3 both mentioned the ‘lag’ or delay involved in transmission. The second issue, raised by I_1, was that it was difficult to recruit CSL students in other countries who would be willing to be taught by the students undertaking the workshop. Many were reluctant to participate because they did not know how to use the software, and there was a lack of teachers to assist them.

4.5.2.3 Workshop Design

In addition to the problem of locating CSL students in other countries who would be willing to be taught by the students enrolled in the workshop, a further issue is the inadequate time the course allows for them to practise synchronous online teaching, as was raised much earlier in Section 4.4.2.2. As the workshop was designed, there was scope for only one teaching practicum – but the need for more than this, and for them to be conducted immediately after the class itself, was strongly advocated by I_3. Indeed, she noted that the students were not given an opportunity to apply what they had learned until one or two months later. This, she said, was not sound pedagogy. She went so far as to suggest that when they did have an opportunity to engage in an online practicum it was often not of value. For these reasons I_3 advocated arranging for students to have not just one, but several, practicum experiences immediately following the individual workshop classes.

Another pedagogical deficiency identified by I_3 was the course design’s lack of supervision and effective evaluation and analysis of the video recording of each student’s practicum. As mentioned in relation to the instructors’ enacted curricula, there was no formal mechanism or arrangement for them to provide instructions or guidance when the Master’s students were engaged in their online practicum. The software had a built-in audio-visual recording function and the Master’s students were required to submit the
recording of their practicum. However, there was no arrangement for them to be given feedback. Most perceptively, I_3 suggested that an analysis of the students’ practicum video clip, together with the means for following this up with corrections and suggestions, was vitally important for the enhancement of students’ online teaching capabilities.

4.5.2.4 Subsection Summary

These findings gleaned from the instructors suggest that, although student feedback revealed a high degree of satisfaction with the synchronous online distance workshop, there were, at the same time, some issues. These involved hardware and software deficiencies – such as poor online transmission quality and some instability in software design – and the absence of technical training for the CSL students on the other side of the line. A major drawback in the course design was a lack of sufficient online practicum opportunities and the absence of instructor feedback on the students’ practicum performance. A final deficiency was the lack of any TCSL program instructors who were also expert in synchronous online learning.

4.5.3 Students

The examination of the students’ experienced curricula focused on four aspects: their experience in relation to e-learning within the Master’s program; the synchronous online distance learning workshop; their personal TCSL experiences in relation to e-learning; and the relevance of their e-learning competence to job applications.

4.5.3.1 Within the Master’s Program

The analysis of students’ e-learning related experience within the Master’s program examined, firstly, whether they experienced or were aware of any changes in relation to e-learning education whilst enrolled in the program and, secondly, if their personal e-learning capabilities improved during this period. In examining the first of these, particular attention was given to those who had graduated and those who were in their final semester, that is, the six participants representing SIII_1 and SIII_2 respectively. All of them stated that they did not feel there were any changes in the approach to e-learning education within the program during their period of study. The students were questioned with regard to their
personal improvement in e-learning during their enrolment. Four students (SII_2, SII_4, SIII_1 and SIII_3) pointed out that they did not take any e-learning specific courses and received no e-learning related training within the program. Consequently, they did not feel that they had received any help from the program in this regard. SII_2 reflected that she had improved very little in her e-learning capabilities. SII_4 stated that she did not take any e-learning focused courses because she was not interested. SIII_1, who was in her second year of study, opined that although she had received little in the way of e-learning training from the Master’s program, she was confident that her e-learning abilities were sufficient to enable her to cope with respect to TCSL. SIII_3, who was approaching the end of his first year, stressed that the current software was very user-friendly, and he could become acquainted with it by himself without the need for any formal training.

On the other hand, three students (SI_1, SII_3, and SIII_4), at different stages within and post the program, reflected that their e-learning capabilities improved. All of them spoke positively about their introduction to online-learning, which they welcomed as a new approach and saw as different from traditional TCSL pedagogy, yet they saw it as offering possibilities for enhancing their own teaching, including access to online resources.

4.5.3.2 Synchronous Online Distance Learning Workshop

Five of the students (SII_1, SII_4, SIII_1, SIII_2, SIII_5) had completed the synchronous online distance workshop. Four issues were raised in their interviews:

1) **Easy software familiarisation:** Learning how to use the online video-conferencing software was not problematic for the students. For example, SIII_5 considered herself to be a ‘computer idiot’, yet she had no trouble in using the software after a short period of practice. SIII_2 and SIII_5 agreed that the three-hour training session on using the online video-conferencing software was quite enough.

   *It was not difficult at all. Once you learn it, and use is often, you easily adapt to it.*
   *[SIII_2]*

2) **Hardware and software deficiencies:** Issues that affected the overall success of the student practicums were poor quality online network connections; software incompatibilities at both ends of the transmission; and online lag, which caused
interruptions in communication. Even though they had completed the workshop, SII_1 and SII_4 said that they would not consider online video-conferencing teaching unless the network technology could be improved, and SIII_1 said she still preferred face-to-face classroom teaching.

3) **Insufficient time of training:** SII_1 and SIII_2 suggested that a 15-hour workshop was not enough; students needed much more time to acquire adequate skills in synchronous online distance teaching. They believed it would be preferable if the workshop could be expanded to become a formal full-time course.

4) **In need of expert teachers:** SII_1 and SIII_1 emphasized the need to have instructors who were both highly skilled in TCSL and had online teaching experience. They commented on the lack of expert online TCSL teachers and lamented that, where they could be found, most did not have a PhD degree and were thus not qualified to be instructors in the Master’s program.

### 4.5.3.3 Students’ Personal TCSL Experiences in Relation to E-Learning

The Master’s students’ use of ICT in their teaching practice or practicum was rather basic. The ICT tools most frequently mentioned by them were PPT and online audio-visual resources. Eight students across all three subgroups (SI_1; SII_1, 3, 4; SIII_1, 2, 3, 4) indicated that PPT was the ICT tool that they used the most in their own personal TCSL classrooms or in the 100 hours of practicum that they were required to undertake for the Master’s degree. SIII_1, SIIII2 and SIII_4 felt that they seemed to rely too much on PPT when they were teaching in summer camps or in their practicum. But in order to better engage students’ attention, SII_1 and SII_4 favoured using online audio-visual resources such as video clips from YouTube. Two students (SII_3 and SIII_1) mentioned that they used online social media such as Facebook for posting the vocabulary of the lessons to be taught, or for introducing useful CSL learning websites to help their students prepare for the classes or enhance their Chinese language skills. Apparently, the e-tools used by these students were not specifically designed for TCSL, but modified from personal use.
4.5.3.4 Relevance of Students’ E-Learning Competence to Job Applications

Based on the students’ personal experience, competence in e-learning had not been one of the prerequisites for TCSL positions. SII_2 and SII_3 not only had experience in TCLS in Taiwan but also overseas, and neither of them had been asked about their e-learning skills when applying for a TCSL position. SII_2 spoke of her experience in a job interview for a position in a German university:

They didn’t ask me about it [e-learning relevant skills], but, of course, they asked me about my fluency in German. I felt there seemed to be very little acknowledgement of the need for digital learning in Europe. [SII_2]

SII_3 spoke about her job interview for a position in a university in the USA:

The interview focused strongly on my English abilities, especially in speaking, because you have to use English to teach over there. [SII_3]

SII_4, who was graduating from the program, had already received an offer from a language institute in the USA:

R: Regarding the offer, did they ever ask about your competency in e-learning?

SII_4: No. My e-learning skills were not a concern to them. As far as I know, they use very little e-learning in their classes there.

4.5.3.5 Subsection Summary

The findings presented above related to the students’ learning experiences and outcomes within the Master’s program, in the synchronous online distance learning workshop, in the personal experiences of e-learning in TCLS, and the relevance of their e-learning competence to job applications.

The students’ confirmed the administrators’ comment that there had been no changes to the e-learning component in the design of the program during their enrolment. Four students stated explicitly that their e-learning knowledge or skills did not improve as a consequence of the program itself, whereas three others, representing all three groups, did acknowledge some improvement, especially in online-learning and the ability to search and use online resources.
Three problems were raised in connection with the design of the synchronous online distance learning workshop: the inadequacy overall in terms of training time (approximately 15 hours), a lack of expert instructors to present it, poor timing of the practicums, and deficiencies with the hardware and software. Students in general suggested expanding the workshop to become a formal, full-time course, and employing instructors who not only have a high degree of experience in TCSL, but who are also highly skilled in online video conferencing teaching. A third problem was seen to relate to the technology aspect of the workshop. Whilst five students expressed confidence in their ability to use the online video-conferencing software, stating that the three hours allocated to this were sufficient, they commented that deficiencies with the hardware and software, such as the poor quality of online network connections, dissuaded them from determining to actually use online-teaching themselves.

From the students’ personal experience in the use of e-learning in their TCSL practice external to the program, and in the program’s requirement of 100 hours of practicum, it was evident that the e-tools they had used were rather basic; PPT and online audio-visual resources being the e-tools most frequently used. However, two students also mentioned using online social media such as Facebook for assisting CSL students’ after-class learning.

Finally, the findings presented in this sub-section indicated that the students’ e-learning competence seemed to be of little importance in their TCSL job applications in Taiwan and overseas. The findings presented above related to the students’ learning experiences and outcomes within the Master’s program, in the synchronous online distance learning workshop, in the personal experiences of e-learning in TCLS, and the relevance of their e-learning competence to job applications.

4.5.4 Section Summary

The findings presented in this section address secondary research question 4: what the three groups of administrators, instructors and students experienced in relation to e-learning in the TCSL Master’s program. Overall, despite the escalated development of educational technology in L2 learning that had been occurring, such developments had not been strongly reflected in the Master’s program design for nearly 15 years. At the same time,
most of the students had become at least somewhat acquainted with basic ICT. Because of this, a basic course included originally to teach students basic ICT skills was no longer needed, but was surprisingly still listed. Further, new developments in ICT were reflected to some extent in general courses.

A focus of the section has been on participants’ perceptions of and experiences with the government-funded synchronous online distance learning workshop, which was a stand-alone option for all students and was included by some instructors as a possible component of a course they were teaching. Although there was some support for the three hours given to familiarizing the students with the technology relating particularly to video conferencing, the hardware and software deficiencies were such as to dissuade some students from entertaining this as a viable possibility in their own teaching. Furthermore, one of the instructors raised the issue of the problems caused by insufficient practice, exacerbated by a lack of instructor feedback on the students’ online practicum performances. The same instructor, along with some of the students, drew attention to the importance of having the workshop delivered by those who were not only expert in online video-conferencing, but also experienced in TCSL; at the time this was considered to be lacking. Finally, there was some feeling amongst the students that this government workshop needed to be expanded into a formal full-time course.

In terms of participants’ personal experiences with e-learning in TCSL, one administrator indicated that e-learning was rarely applied in CSL classrooms overseas. Responses from the students indicated that the e-tools they used in their teaching were rather basic and not TCSL-specific.

Finally, responses from one of the administrators and three of the Master’s students who were in their last semester of the degree, suggested that little if any importance was placed on e-learning in job description specifications for TCSL positions in Taiwan and overseas. The discussion on the participants’ personal experience in relation to the role of e-learning in TCSL, as presented in this section, can be seen to provide some explanation for the neglect of e-learning enhancement in participants’ intended curricula.
4.6 Chapter Summary

This chapter has presented the findings arising from an analysis of the data obtained from interviews with the three cohorts of research participants (administrators, instructors and students) from one of Taiwan’s most prestigious TCSL graduate institutes. After presenting demographic data relating to all participants, the chapter was structured around the four secondary research questions that have been identified as necessary in answering the primary research question: “How did the major stakeholders of the case study conceive of the role of e-learning education in TCSL Master’s programs in Taiwan?”

The following chapter discusses key issues arising from the findings in terms of the available literature and particularly in relation to models, which explore the effectiveness of e-technology use in language teaching and learning. The final chapter will look at the implication of this discussion for e-learning in TCSL in Master’s degree programs in Taiwan as well as more generally.
Chapter 5: DISCUSSIONS OF THE FINDINGS

Chapter 3 presented the methodology of this study in relation to a qualitative case study approach, which aims to understand the relationship between e-learning education and a TCSL Master’s program in Taiwan. This chapter discusses the findings from the interviews in relation to issues raised in the literature. The discussion in this chapter focuses upon the three key issues that arose from the research.

The discussion of the first issue will focus on the attitudes towards e-learning of the three major groups of stakeholders. Although the literature suggests there are learning and employment benefits to e-learning, this section will outline that the three groups in this study did not consider it an essential component of the Master’s program and it was not a valued component of learning. Second, the discussion will focus on the marginalization of the major knowledge domains of TPCK within the curriculum in the Master’s program. Thirdly, this chapter will discuss how, despite the global trend towards online distance learning in the field of TCSL, it was not prioritized in the intended or enacted curricula across the three major groups of the participants.

5.1 The Value of E-Learning in TCSL

The data from the three major groups show that e-learning related knowledge and skills were not considered as essential competencies for the Master’s students by the administrators and the instructors. This result supports Zheng’s (2005) findings that suggested that TCSL pre-service teachers’ e-learning related education and training was neglected and, therefore, inadequate in most of the programs provided by universities. Similarly, in Wang, Moloney and Li’s (2013) study, which adopted Shulman’s (1987) pedagogical content knowledge (PCK) model for analysing the contents of TCFL teacher education curricula, TCSL teachers’ e-learning related capabilities were not considered as part of the main objectives within the investigated curriculum. This suggests that, since Zheng’s study in 2005 (nearly a decade ago), despite the radical development of e-learning technology in the L2 educational sector, e-learning capability enhancement generally
remains a neglected component of TCSL teacher preparation programs in contexts similar to that of this research.

As this research is methodologically informed by an interpretivist theoretical perspective, it seeks to understand more thoroughly this situation and to better understand why e-learning capability enhancement has been so neglected in the Master’s program. Based on the findings and relevant reviewed literature, three possible factors that are suspected to have impacted upon participants’ intentions in enhancing the Master’s students’ e-learning capabilities, include:

1. Participants’ perceptions about e-learning in TCSL
2. Participants’ prior experience in relation to TCSL in practice
3. Participants’ perspectives on the relationship between TCSL teachers’ e-learning competence and job opportunities

5.1.1 Participants’ Perception of E-learning in TCSL

As interpreting in the reviewed literature (section 2.2) e-learning could be seen as a hybrid of two main elements: the ‘e’ that indicates the ICT enterprise in general, and the ‘-learning’ that indicates how individuals obtain and/or construct knowledge and skills with the assistance of ICT (Andrews & Haythornthwaite, 2007). Hence, for obtaining a comprehensive understanding of participants’ perception of e-learning in TCSL, the following discussion involves participants’ general knowledge of e-technology (i.e. the ‘e’ in e-learning) and their perception of the role of e-learning in TCSL (i.e. the ‘learning’ in e-learning).

5.1.1.1 Participants’ Knowledge of Technology

Garrett (2009b) argued that one of the reasons that L2 teachers had no interest in using e-technology in their teaching was due to their lack of e-technology related knowledge, skills and experience. This is not surprising given the speed with which the e-revolution has exploded in the past two decades. The reviewed literature indicates this fact, describing how e-learning has experienced a rapid evolution through computer (or IT) to ICT (with the advent of Web technology), and the more recent m-technology (mobile computing) joining the e-technology enterprise. Before the advent of the Web, computer-
Based technologies were the core of technology applications in the field of e-learning (e.g., Andrews & Haythornthwaite, 2007; Harasim, 2012; Nicholoson, 2007; Yuan, 2007). Because of the rapid and continuous development in electronic and web technologies and their use in educational settings in recent decades, many new tools were not mentioned in many of the earlier definitions, such as Web 2.0 (e.g., course management systems (CMS), blogs, wikis), social media (e.g., Twitter, Facebook), and mobile learning (e.g., mobiles cells, pads, laptops) are recent additions to the e-learning empire (Garrison, 2011; Jenkins et al., 2011) (see also section 2.2). Hence, Chaka (2009) suggests that along with the evolution of ICTs, e-learning in the field of L2 education has been impacted not only by computer-based and web-based technology but also by mobile-based technology. In addition, based on a survey of technology-enhanced learning in UK higher education institutions in 2008, Jenkins (2011) reports that mobile computing is becoming one of the most popular e-learning tools in the educational sector. Keeping up to date with changes in any profession has always been difficult for most practitioners. Hence, it is not surprising that some educators (e.g., administrators or teachers) who are less familiar with contemporary educational technology might have limited desire to include e-learning teaching and training in their programs.

However, research findings from this study did indicate that participants in all three groups (some much more than others) were aware of such developments in e-technology and possessed substantial knowledge in this field. The two administrators, who both had considerable years of service as director of the Master’s program (one as the former director (seven years, 2001-2007) and the other as the current director (four years, 2007-present) of the program), also appear to have had considerable research experience in relation to e-learning in the field of TCSL. For example, the former director had been a research leader in many of the government supported e-learning related TCSL research projects. The synchronous online distance learning teacher training program was one of the research projects that had been led by him and conducted in the institute for more than 10 years. The current director had also led a government supported e-learning project in relation to improving Chinese pronunciation. Although during the interviews, the current director had shown her uncertainty about the meaning of e-learning and neither of them
provided an explicit definition of e-learning, the evidence shows that they had kept up to date with the newly invented ICT technologies, for example, Second Life\(^9\) and m-learning. In the instructor group, although all of the four instructors had experience in engaging in some government supported TCSL e-learning related research projects and two of them had been instructing in the TCSL synchronous online learning workshop, none of them provided explicit definitions of e-learning during the interviews. However, the findings indicated that they, to some extent, had kept up to date with the contemporary e-learning related tools or programs, for example, Web 2.0, online social media, Cloud computing, CALL, synchronous online distance education, and online assessment programs.

In regard to the student groups, it is evident that students took account of a relatively broader range of e-technology as they included CBTs (such as PPT, CDs, DVDs, multimedia, and language learning software), WBTs (such as e-mail, online dictionaries, online language learning software, online audio-visual recording tools, Moodle, Voice Raid, YouTube, Blogs, Facebook, and Google sharing), and using MBTs (such as iPhone and iPad) for teaching and learning as part of the e-learning enterprise. However, it could be argued that this might be due to the comparably much larger number of participants in the group (11 students) compared with two administrators and four instructors, and their e-generation background (nine of the students were born after 1980).

The literature review described the sweeping changes in e-technology in recent decades and its wide acceptance is evident in the fact that the participants in this study in general appear to possess a good knowledge of contemporary e-technology. Hence, this research suggests that the reason given by Garrett in 1991 for L2 teachers’ lack of a desire to apply e-learning is not applicable for the current situation in TCSL in Taiwan. This finding also serves to highlight the huge changes in awareness, perceptions and use of e-learning in little more than two decades.

However, what is also apparent in this discussion is that most of the e-technologies mentioned by the participants, especially by the student group, were commonly used in their daily lives but not necessarily for the purpose of L2 teaching and learning.

\(^9\) Second Life: the online three-dimensional modelling software that allows users to create intractable virtual objects.
5.1.1.2 Participants’ Beliefs in the Role of E-Learning in TCSL

In the field of L2 education, CALL (computer-assisted language learning) is commonly used as an equivalent term to e-learning in the educational sector in general (e.g. Chaka, 2009; Lafford, 2009; Levy, 1997; Stockwell, 2012b). Much reviewed literature agrees that CALL in the field of L2 education should not be viewed as simply using and keeping up with the latest ICT inventions (e.g., Garrett, 2009a; Levy, 1997). Besides concerns about technology itself, Garrett (2009a) proposes that CALL also involves the whole range of theories in L2 learning, acquisition, and pedagogies. However, the findings of this research show that most of the participants seem to intuitively perceive e-learning simply as ‘using ICT related tools in teaching’, and did not attach much importance to it, although the great majority of them (16 of the 17 participants) to some extent did perceive e-learning as an inevitable trend in the field of TCSL.

Furthermore, the findings in relation to participants’ attitudes towards e-learning (section 4.2.2.3) indicate that e-learning was not perceived as an essential part of TCSL by most of the participants. For example, it was commonly perceived by the participants across all three major groups (two administrators, two of the four instructors and five of the 11 students) merely as one of many approaches for TCSL practice and was not superior to any other approach, and one instructor asserted that it could not be the norm in TCSL practice and would not replace the traditional classroom setting. One of the students, who was in her last semester of the Master’s program, stated that she did not consider using e-learning in her teaching in the future, and another student, who was in her second year of study, considered learning about language structures is of primary importance and that any e-learning teaching should not be undertaken to the detriment of this. Only two of the 17 participants (one instructor and one student) expressed a desire to apply e-learning in their future teaching practice.

This result confirms Chapelle’s (2009) finding that, in the late 1980s, computer technology was viewed by the large body of L2 teachers as an optional add-on to assist L2 learning practice, and my study strongly suggests this has remained unchanged in current L2 education in Taiwan.
One of the features that has been highlighted as one of the important approaches in L2 education in recent decades is the integration of authentic and natural language learning environments in L2 teaching and learning settings (Chapelle, 2009; Ciccone, 1995; Garrett, 2009b; Sturm et al., 2009). Lafford (2009) proposes that CALL facilitates “social networks with non-native and native speakers of the target language for various forms of professional, academic, and social activity” (p. 680). With the help of contemporary web technologies such as text-chat, voice-chat, online video-conferencing, and audio-blogs, CALL enables online digital collaborative activities such as multi-way synchronous/asynchronous communications. These online communication activities provide L2 learners with opportunities to easily access authentic materials and interact with native speakers synchronously or asynchronously without space or time constraints (Garrett, 2009b; Kruk, 2011; Levy, 2009) (see also section 2.3.3.1). However, in the discussion of e-learning application in TCSL during the interviews, the participants across all three groups (the administrators, instructors, and some students) believed that traditional classroom settings remained the norm for TCSL practice, with e-learning playing merely a trivial role in such settings.

Although many advantages and disadvantages of using computer-based and web-based technologies in enhancing TCSL were raised, the discussions of computer-based technology were mainly focused on particular language skill improvement (e.g. Chinese character construction, pronunciation), while discussions on web-based technology focused on online distance learning and the popularization of online social media. The potential for applying e-learning to the integration of authentic and natural language learning environments in TCSL classroom settings seemed to be overlooked by the participants. Nor had any importance been attached to the function of social networks that enables the connection of L2 learners and native target language speakers through online multi-way synchronous/asynchronous collaborative activities.

The reviewed literature also indicates that there is a rapidly growing tendency for the L2 learner to use mobile devices to access Web 2.0 applications such as podcasts, blogs, wikis and RSS (Rich Site Summary) for language learning purposes (Chaka, 2009). Gesche (2009), Milne (2007), Lafford (2009) and Sturm et al. (2009) all agree that the rapid
development of web-based and portable wireless technologies enable L2 learners to have social interactions with native target language speakers as well as other learners whenever and wherever they want. Although some of the students were shown to be aware of the potential of using mobile devices and Web 2.0 applications for TCSL, it was more to do with how those elements had invaded their (and their future students) daily lives than with TCSL pedagogy. One of the administrators also perceived m-learning to be one of the possible means for L2 learning, but seemed to have no intention of or plans for enhancing her students’ capabilities in the application of m-learning to TCSL.

The findings in relation to the administrators’ intended curriculum indicate that one of the objectives of the Master’s program was to prepare their students to be able to teach abroad. One relevant question arises: would it not be better if the teacher could use e-technology to integrate (or create) authentic language learning environments for their students, who have no opportunity to go to the target language speaking countries, or create (organise) collaborative learning environments with other language learners?

Based on the discussion above, it could be concluded that participants’ lack of knowledge in contemporary e-technology was not a reason for their neglect of e-learning application in TCSL as suggested by Garrett in 1991. Rather, it could be their lack of appreciation for the role that e-learning could play in TCSL. E-learning was not perceived by most of the participants across all three major groups to be an essential tool for TCSL. They seemed to fail to recognize the possibilities of using web-based and mobile-based technology for integrating authentic and natural language learning environments into face-to-face classroom settings. The creation of social networks through web-based and mobile-based technology to facilitate L2 learners’ social constructive language learning through online communication with native target language speakers was disregarded.

5.1.2 Participants’ Prior E-Learning Experiences in TCSL Practice

Some researchers have suggested that, in the field of L2 education, the use of e-tools for teaching and learning seems not to accord with contemporary available ICT. For example, Garrett (2009a) proposes that the use of e-technologies in L2 teaching and learning has not kept pace with the development of e-learning technology in the L2
educational sector. Similarly, Zhang’s (2010) research on a Taiwanese government supported *Digital Language Learning Program* reports that the application of e-learning in TCSL practice in Taiwan seemed not to be keeping up with the current vigorous development of e-technology. The following discussion of the impacts of participants’ prior e-learning experience in TCSL practice on their intention in e-learning enhancement focuses on two major aspects: the use of e-tools in traditional classroom settings and online distance learning.

Stockwell (2012a) states that the mode of classroom settings, for example face-to-face or distance, could have a direct effect on an institution’s support for technology equipment (i.e. what equipment would be available for the teachers and students to use) and, therefore, could cause a direct impact on the teachers’ and students’ experience in the use of technology for teaching and learning. He also suggests that face-to-face classroom settings had relatively less need of e-technology.

The research findings in this regard seem to accord with Stockwell’s suggestions. As mentioned earlier, the traditional face-to-face classroom setting was regarded by many of the participants across all three groups to be the norm for current TCSL practice. Both of the administrators proposed that the foremost goal of the Master’s program was to prepare their students to perform effective face-to-face classroom teaching in Taiwan and/or overseas. Drill-practice was considered to be the dominant form for traditional face-to-face TCSL classroom practice, and many of these participants asserted that this type of teaching was carried out well without any ICT assistance. Correspondingly, the findings in relation to participants’ prior experience in CSL teaching and/or learning also indicate that e-learning related technology was rarely used in face-to-face classroom settings in Taiwan or in many other foreign countries that had been mentioned by the participants, such as the USA, Germany, or Norway. Furthermore it was also reported that CSL classrooms were commonly insufficiently equipped with ICT related facilities (see section 4.2.3.1).

One more point worth mentioning is that, based on the literature review and online document survey of this research, TCSL online learning seems to be becoming pervasive even ubiquitous nowadays (e.g., eChineseLearning, 2006; Yao, 2009). However, the traditional face-to-face classroom setting was still perceived by the majority of the
participants as the norm for current TCSL practice. The training in this regard within the Master’s program was fairly limited. As mentioned in the findings chapter, a government sponsored 15-hour synchronous online distance learning workshop was the only relevant training provided once a year by the Master’s program.

Also, some of the students, whether or not they had attended the workshop, made it clear that they were not interested in being an online teacher in the future; two main reasons provided by the students were the various technological barriers and a lack of ‘real’ in-person interaction. Furthermore, except for the practice in the synchronous online distance learning workshop, none of the participants had ever actually been an online teacher, and none of them had taken CSL online learning courses.

Hence, participants’ prior lack of or limited experiences in the use of e-technology in TCSL classroom practice and their limited experience in online distance learning could be considered as two of the causes for the neglect of e-learning capability enhancement in the Master’s program.

5.1.3 Participants’ Perspectives on the Relationship between TCSL Teachers’ E-Learning Competence and Future Employment

As far as e-learning competence and job opportunities in TCSL go, the findings indicate that the participants in general seemed to overlook the increasing probability that e-learning capability is becoming a prerequisite in gaining employment in TCSL, and that they seemed to disregard the vast, ever-expanding online TCSL job market in a world increasingly changed by technology.

A relevant document survey for this research project indicates that there seems to be an increasing tendency to include e-learning capabilities as one of the prerequisites for L2 teachers. For example, as mentioned in the introduction (section 1.1), e-learning capabilities were promulgated as one of the prerequisites for a qualified TCSL teacher by Chinese and Australian educational authorities. *Modern Education Technique and Its Application* was specified as one of the requirements for a qualified TCSL teacher by a Chinese government-funded organization, the Office of Chinese Language Council International (Hanban, 2007). The Australian Department of Education, Employment and
Workplace Relations specified that one of the standards for TCSL teachers’ pedagogical competence is that teachers be “informed and critical users of technology in language teaching and use technology both to support learning and as a basis for learning to communicate using technologies” (DEEWR, 2008, p. 6).

However, based on participants’ personal experiences and observations, most of the participants still held the view that e-learning related capabilities played rather an insignificant role in job applications. In regard to overseas job applications, according to one of the administrators, 40% of the graduates from the institute had received teaching positions from prestigious universities around the world. The administrator stated that those positions did not require ICT related skills and many of the students were accepted without having had e-learning related experience. Some of the instructors predicated that, although e-learning capabilities might add extra credits to the pre-service teachers’ job applications, a lack of e-learning capabilities would not have a critical effect on position acquisition. One of the instructors even stated that she had not yet seen any TCSL teacher hired because of his or her e-learning capabilities. Many of the students, based on their personal experiences, also agreed that they received job offers either in Taiwan or overseas without any enquiries about their e-learning related capabilities. Participants, who considered e-learning capabilities to be insignificant in TCSL job applications, seemed to fail to recognize the impacts of the radical developments in technology on the L2 education sector, and despite their previous experiences internationally, seemed not to be aware that e-learning capability has now been added as one of the key standards for TCSL teachers internationally.

Furthermore, the findings indicate that some students, although being aware of the possibility that they might be required to use e-technology in their future careers, still did not feel the need to develop their e-learning capability during their Master’s study. Being of the e-generation, they believed that they could easily learn how to use new e-tools if they needed to. However, as mentioned earlier, a qualified TCSL teacher nowadays is required not only to be an ‘informed’ modern technology user (Hanban, 2007), but, more importantly, also a ‘critical’ user (DEEWR, 2008). Hence, this research would like to suggest that, one of the reasons for the Master’s students considering e-learning
competence development to be inessential in their Master’s study could be due to their failure to see the difference between being an ‘informed’ technology user and ‘critical’ user.

One more issue worth discussing in this section is that, similar to the participants’ prior experience in relation to e-learning applications, they clearly preferred employment in traditional TCSL classroom teaching situations, and seemed to disregard online-teaching (or virtual-classroom) job positions. Similar situations were found in China as well. Although the employment rate of the Master’s program graduates in Taiwan had not been raised as an issue during the interviews, obtaining a TCSL offer could be extremely difficult for young TCSL graduates in China. According to Wang, Moloney and Li’s (2013) research, the TCSL job vacancies were far fewer than the number of the graduates; in fact only 10% of the annual 15,000 TCSL graduates from 258 universities in China were able to obtain TCSL positions, and only one percent of these were overseas positions. Yet, Wang, Moloney and Li’s (2013) research showed that, despite the ever flourishing online CSL courses as mentioned in the previous subsection and that had also been mentioned by a student participant who was an exchange student from China, online teaching positions seemed not to be taken into account as one of the job options for the TCSL graduates in China.

In summary, one could conclude that participants held the view that TCSL teachers’ e-learning capability plays rather an unimportant role in job acquisition, and this could be one of the major reasons for the neglect of e-learning capability development in the Master’s program. The discussion also suggested that participants’ viewpoints in this regard could be due to their prior personal experiences where e-learning capability had not being a requirement for TCSL job applications. However, they seemed to fail to recognize the impact of the development of the technology on the CSL educational field such as the changes to the international standards for TCSL teachers and the vast online teaching opportunities. Furthermore, the Master’s students’ over-confidence in their use and adoption of e-technology could be one of the possible reasons for the failure to properly develop their e-learning capability.
5.1.4 Section Summary

This section discussed the three main factors that might be presumed to have effects on participants’ neglect of e-learning in their intended curricula, and they were: 1) participants’ perception of e-learning in TCSL, 2) their prior e-learning experiences in TCSL practice, and 3) their perspectives on the relationship between TCSL teachers’ e-learning competence and job opportunities. The first factor involved two issues: participants’ knowledge of e-technology and their beliefs in the role of e-learning in TCSL. This research suggests that participants’ lack of appreciation for the role that e-learning could play in TCSL, rather than their lack of knowledge of e-technology, was one of the reasons that caused the neglect of e-learning enhancement in participants’ intended curricula. Participants’ prior limited experience in the use of e-learning in traditional CSL teaching and limited involvement in online distance learning, which could possibly explain their failure to see the extensive potential of web-technology and mobile-technology, were issues related to the second factor. The third factor was the participants’ belief that TCSL teachers’ e-learning capability was unimportant in job acquisition. This belief could be due firstly to participants’ lack of awareness of the changes in technology that have reformed the CSL teaching and learning environment (such as the change in the standards for TCSL teachers internationally and the rapid growth of online teaching), and, secondly, the Master’s students’ self-confidence in their everyday e-technology capabilities, which does not take into account the differences between being an ‘informed’ use and a ‘critical’ user (as required by international standards).

These findings reinforce the argument that participants’ attachment to the traditional face-to-face classroom teaching mode, their lack of awareness of how technology has reformed the CSL teaching and learning environment, and the students’ uncritical self-confidence in e-technology were the main causes of the neglect of e-learning in the participants’ intended curricula.

5.2 Evaluation of Participants’ Curricula with TPACK

The discussion in the previous section 5.1 suggested that e-learning related capability enhancement was, to a certain degree, neglected in participants’ intended curricula for
various possible reasons. However, e-learning education was not completely eliminated from the Master’s program. The research results indicate that participants did have intended plans, enactments and consequential experiences in relation to e-learning enhancement within the program. To provide an in depth understanding of e-learning education within the Master’s program, this section will move forward to examine participants’ three types of curricula (intended, enacted, and experienced) in relation to e-learning education by applying Mishra and Koehler’s (2006) *Technological Pedagogical Content Knowledge (TPACK)* framework. I will begin by reminding the reader about the meaning of the relevant terms in this framework before applying them to my case study findings.

### 5.2.1 Brief Review of TPACK

The theoretical framework TPACK was first proposed by Mishra and Koehler (2006) primarily for evaluating pre-service teachers’ knowledge of effective e-learning applications, and consequently helping pre-service teachers to develop such capability in their teaching practice (see section 2.4.1). However, as discussed in the literature review chapter, this framework can also profitably be used for evaluating TCSL programs and promoting TCSL pre-service teachers’ e-learning capabilities (see section 2.4.1.5).

TPACK has as its predecessor Shulman’s (1987) theoretical framework Pedagogical Content Knowledge (PCK) that involves three core elements: content knowledge (CK), pedagogical knowledge (PK), and pedagogical content knowledge (PCK). Mishra and Koehler (2006) add technology knowledge (TK) and, therefore, technological content knowledge (TCK) and Technological pedagogical knowledge (TPK) to form a TPACK model.

Because CK, PK and PCK that are originally adopted from Shulman’s PCK framework do not take e-learning into account, the evaluation of the participants’ curricula will focus on the three knowledge domains that are technology involved, and they are: TK, TCK and TPK.

#### 5.2.1.1 Technology Knowledge (TK)

The evaluation of pre-service teachers’ technology knowledge (TK) targets their knowledge and skills around contemporary available e-learning technology. In Mishra and
Koehler’s (2006) and Schmidt et al.’s (2009) study, TK refers to the whole range of educational technology, from standard technologies to advanced digital technologies. However, since this research is centred on TCSL teacher preparation, the terms ‘technology’ in TK here more narrowly related to CALL-related technology, which comprises computer-based, web-based and the recently prevalent mobile-based technologies.

5.2.1.2 Technological Content Knowledge (TCK)

Technological Content Knowledge (TCK) looks not only for pre-service teachers’ knowledge of available technology that relates to their teaching subject content (Mishra & Koehler, 2006), but also their capabilities in selecting appropriate technology corresponding to specific subject content (J. B. Harris & Hofer, 2011; Schmidt et al., 2009) (see section 2.4.1.2). In this research, TCK, therefore, refers to TCSL pre-service teachers’ abilities in selecting appropriate e-tools for specific CSL learning contents based on their knowledge and understanding of CSL learning theories and e-technologies.

5.2.1.3 Technological pedagogical knowledge (TPK)

As TCK primarily looks for pre-service teachers’ ability in deciding what e-technology to use for enhancing CSL teaching and learning, technological pedagogical knowledge (TPK) looks for their abilities in how to effectively integrate selected e-tools into corresponding pedagogical strategies and, therefore, create new teaching approaches (Schmidt et al., 2009, p. 125). Hence, in addition to an understanding of existing technology tools and the ability to select suitable tools, this type of knowledge also involves the ability to apply corresponding pedagogical strategies and awareness of the potential of particular technologies in enhancing (or altering) teaching approaches (Mishra & Koehler, 2006). TPK in TCSL could refer to L2 educators’ abilities in providing sound pedagogical designs for effective e-learning applications (Salaberry, 2001; Stockwell & Tanaka-Ellis, 2012).

In summary, TPACK refers to a form of complex knowledge the merges the three basic knowledge domains TK, CK, and PK, and the relationship between them (Archambault & Crippen, 2009). It is teachers’ understanding of how to appropriately
integrate technologies into teaching strategies when teaching specific content-based materials (J. B. Harris & Hofer, 2011). Mishra and Koehler (2006) also propose that for an effective integration of technology into teaching practice, it is crucial for teachers to thoroughly understand such a relationship and use “this understanding to develop appropriate, context-specific strategies and representation” (p. 1029).

The following discussion will present the evaluation of participants’ curricula in respect to three e-learning knowledge domains (TK, TCK, and TPK) of TPACK model within the formal courses provided by the Master’s program.

5.2.2 Evaluation of Participants’ E-Learning Curricula in the Formal Courses of the Master’s Program

In my study, the findings suggest the inadequacy of e-learning enhancement in relation to the formal courses within the Master’s program. Two main categories that were drawn upon to analysis the curriculum of the formal courses of the Master’s programs: 1) the two elective e-learning specific courses, and 2) the integration of e-learning in general courses. With respect to the first of these, there were only two e-learning specific courses listed among more than 30 electives (of which students had to choose five), and in practice only one of the electives had been offered in recent years. None of the four instructors had taught the two e-learning specific courses, and only three of the 11 students reported taking one of the electives.

In regard to the integration of e-learning in general courses, among the administrator and instructor groups, only one administrator had included e-learning related content and used e-tools in her teaching. The students reported that there were two general courses they had taken that had involved e-learning knowledge and skills as part of the course content. Furthermore, only a few e-tools (e.g. PPT, digital audio-visual means, Moodle, and Adobe Connect) had been mentioned as being used in class teaching in comparison with the contemporary ‘vast enterprise’ of available ICT. However, to provide a more comprehensive discussion about e-learning education within the formal courses of the Master’s program, the following discussion will focus on the three e-learning related
knowledge domains, TK, TCK and TPK, of the TPACK model to examine these e-learning relevant formal courses.

5.2.2.1 The Need for TK Enhancement

First, the research findings indicate that students’ TK enhancement seemed to be disregarded in these relevant formal courses in participants’ intended as well as enacted curricula. As discussed in the previous section (5.1), the participants across all three major groups were aware, to a certain degree, of technology for education purposes, and Master’s students nowadays were considered to possess adequate TK before they enrolled in the program. For example, the administrators seemed to take for granted that their Master’s students were digital natives. They were, therefore, presumed to possess adequate ICT skills and needed no further education in this regard: “The students have no need to learn computer skills because they are already good at using computers; they won’t have any problem in this regard” (A_1). As a result, one of the two electives, Information Processing in Chinese, which was designed primarily for developing students’ basic ICT skills, had rarely been offered in recent years. Furthermore, the other electives, Computer-assisted Instruction in Chinese, as well as the three general courses that involved e-learning elements as part of course contents, Chinese Dialects Teaching Materials and Methods, Chinese Acoustic Phonetics, and Theories and Applications of Chinese Characters, were reported to exclude ICT skills enhancement as part of their course objectives.

However, TK in TCSL nowadays covers a much broader range than just basic ICT knowledge and skills. For example, with the accelerated expansion of wireless and mobile technologies, Web 2.0 tools (e.g. course management systems (CMS), blogs, Wikis), mobile computing and podcasting are now part of the e-learning enterprise (Garrison, 2011; Jenkins et al., 2011) and, therefore, are widely used in the field of L2 education (Chaka, 2009; Lafford, 2009; Sturm et al., 2009; S. Wang & Vasquezm, 2012). Furthermore, with the rapid development of technology, Bateson and Daniels (2012) and Mishra and Koehler (2006) also address the importance of the L2 teachers’ capabilities in efficiently keeping up with and adapting to the advent of new technology. As mentioned earlier in subsection 5.1.1.1, students’ TK was mostly for daily life usage but not necessary for the purpose of
L2 (and/or TCSL) in particular. This research would, therefore, argue that advanced TK improvement is considered necessary for pre-service TCSL teachers in order to cope with the modern language learning environment in their future teaching careers.

5.2.2.2 TCK in General Courses

Although students’ TK enhancement was not taken into account in these formal courses, relevant findings indicate that there were three general courses involving TCK as part of course contents. Based on the descriptions of the participants who had engaged in these courses, they introduced students to particular e-tools for the different specific language skills they contained and, therefore, were considered TCK elements. For instance, in the course *Chinese Dialects Teaching Materials and Method*, the students were taught how to search, collect, and analyse online Taiwanese dialect-relevant teaching materials; in the course *Chinese Dialects Teaching Materials and Method*, the students were introduced to the software programs that were designed for analysing Chinese acoustic phonemes; and the course *Theories and Applications of Chinese Characters* involved software programs that allows users to analyse Chinese words and phrases and design teaching materials for learning Chinese characters.

The discussion above also seems to suggest the insignificance of TCK involved in the general courses of the Master’s program when compared with the various language skills and the vast number of available e-tools, which keep on coming. For example, despite of the fact that there are four essential language skills, listening, speaking, reading and writing (Garrett, 2009a; Mitchell, 2000), the findings showed that the e-tools introduced to the Master’s students were merely focused on the analysis of Chinese acoustic phonemes or the structures of Chinese characters. Also, evidence from Google search engine showed that there were numerous CSL-related software programs designed for different language skills in particular. These software programs could be in the forms of audio, mp3, videos, games, or flashcards, etc., and were available online or offline (see section 1.1). However, the students seemed to receive comparatively limited information in this regard from the formal courses of the Master’s program. The use of web-based and mobile-based technology to enrich the authenticity and cultural context of TCSL teaching materials (TCK) as suggested
by Hampel and Stickler (2005) seemed not considered by the instructors as part of their course content.

Furthermore, the general courses discussed above seemed to focus more on introducing content-specific e-tools. Students’ TPK competence, how to effectively apply such technology in their TCSL practice, seemed not to be addressed.

5.2.2.2 TPK in an E-Learning Specific Course

One e-learning specific course, Computer-assisted Instruction in Chinese, is found to include not only TCK but also TPK. This course was mainly taught by one of the administrators. It is necessary to remind readers here that, in the Master’s program, the administrators played two roles; policymaker and instructor (see section 4.4.1). According to the administrator, this course was mainly designed to introduce the students to currently available TCSL-related e-learning technologies and skills. However, rather than teaching the students how to operate hardware and software (TK), the course was focusing more on improving students’ ability to select appropriate e-tools for assisting different language skills accordingly (TCK) and to develop their ability to effectively apply e-technologies in their future teaching (TPK). The administrator emphasized that how to select a right e-tool for certain language teaching situation is far more important that just knowing how to use the tools (see section 4.4.1).

Garrison (2011) and Mason and Rennie (2006) also suggest that a sound pedagogical scheme or learning strategy is considered to be crucial in selecting and integrating proper e-tools into teaching practice. Such a sound pedagogical scheme or learning strategy is believed to be underpinned by a comprehensive understanding of the learning theories in relation to e-learning (see section 2.2.2). However, the research findings suggest that the enhancement of L2 (or TCSL in particular) learning theories in relation to effective integration of appropriate available technologies into L2 teaching content (Garrett, 2009a) seems to be missing in the formal courses of the Master’s program.

It is also agreed among scholars (e.g., Chapelle, 2009; Ciccone, 1995; Garrett, 2009b; Sturm et al., 2009) that the use of available ICT to assist in the creation of authentic and natural language learning environments in traditional face-to-face teaching practice and
performing collaborative L2 learning activities, such as engaging language learners in communication and interaction with peers or native speakers of the target language, has become one of the most emphasized foci in relation to e-learning in L2 education in recent decades. However, the development of students’ TPK as how to optimize the advantages of modern web-based and mobile-based technology in traditional face-to-face classroom settings, such as creating virtual authentic learning environments or performing online multi-way synchronous/asynchronous collaborative L2 learning activities that enable the connection of L2 learners and native target language speakers, was overlooked in the Master’s program’s formal courses as well.

5.2.3 Section Summary

This section discussed participants’ curricula within the formal courses provided by the Master’s program by applying Mishra and Koehler’s (2006) TPACK framework. Three e-learning related knowledge domains from the framework, TK, TCK, and TPK, were examined. Firstly, in regard to TK enhancement, this research suggests that it is necessary to add advanced TK education into the Master’s program’s formal courses. Although the findings indicate that, to certain degree, the participants across all three major groups were aware of technology and the Master’s students were considered to possess adequate TK before they enrolled in the program, TK in the modern L2 educational environment covers a much broader range than just basic ICT knowledge and skills. Hence, in addition to the improvement of advanced TK knowledge and skills, the students’ ability to keep up with and adapt to the advent of new technology is also considered important and should be included in the program’s course design.

This research also suggests the TCK in the formal courses of the Master’s program is insignificant. The students seemed to receive very limited information in comparison with the various language skills and the vast number of available e-tools, which keep on coming. There were three non- e-learning specific formal courses (Chinese Dialects Teaching Materials and Method, Chinese acoustic phonemes, and Theories and Applications of Chinese Characters) that were reported to involve TCL as part of the course contents. However, the TCK introduced in these courses was merely focused on the e-tools for two
specific language features (Chinese acoustic phonemes and Chinese character structures). Also the use of modern ICT, such as web-based and mobile-based technology for enriching TCSL teaching materials with authenticity and cultural context, were not seen in the research findings.

The enhancement of the students’ TPK could be found in one elective e-learning specific course, *Computer-assisted Instruction in Chinese*. This course was designed mainly for improving the students’ abilities in selecting appropriate e-tools for a particular purpose of TCSL. However, during the interviews, the learning theories of e-learning that are essential for underpinning the pedagogical scheme or learning strategy for applying selected e-tools for TCSL practice, were not mentioned by the participants across all three major groups. Also, the students’ abilities in the use of modern web-based and mobile-based technology for creating virtual authentic language learning environments and/or performing online multi-way synchronous/asynchronous collaborative learning activities seemed to be disregarded in the formal courses of the Master’s program.

Based on the discussion in this section, is it evident that there were problems with the adequacy of e-learning education in all three e-learning related knowledge domains, TK, TCK and TPK, within the formal courses of the Master’s program. Also, participants in general had somewhat limited expectations of any future need to enhance students’ e-learning capabilities within the program because the extremely small proportion of only two e-learning-specific electives (with one of them no longer being provided) out of an overall offering of more than 30 electives was considered sufficient. It could be argued that such an attitude might discourage the students from enhancing their personal e-learning capabilities and incorporating them into their future teaching practice.

5.3 Limited Experience in TCSL Synchronous Online Distance Learning

The Master’s program had been providing a synchronous online distance learning workshop once a year for more than 10 years for students who were interested in this area or who were required to take this workshop as part of a course. In this research sample, one of the administrators was the project leader, two of the four instructors had either organized
and/or taught some classes of the workshop, and five of the students from subgroup II and III had attended the workshop.

According to the literature review and online document survey, online learning seems to be becoming a growing practice in CALL. For example, according to Yao’s (2009) report on a survey of current Chinese CALL in the USA, Chinese CALL relied heavily on web-based technology, one-on-one online tutoring courses were widespread, and the number of online CSL institutes run cooperatively by organizations from China and the USA had expanded significantly. Similarly, the online document survey also indicates that there were various TCSL online institutes that provide various synchronous online audio-visual courses available for CSL learners worldwide. These include eChineseLearning, based in China, which advertises ‘Live Teacher from China’ (eChineseLearning, 2006), and in Taiwan, one CSL institute’s Mandarin Training Center, which started a distance CSL learning program, MTC Online, providing pilot courses for five universities overseas in 2011, and officially recruiting students worldwide in 2012 (MTC Online, 2012). The online CSL courses enable overseas students to take real-time online Chinese lessons wherever they are.

However, despite the evident trend of increasing CSL online learning, and the Institute’s long-term support of the workshop, the traditional face-to-face classroom setting was perceived by the majority of the participants as the norm for current TCSL practice. Further, some of the students expressed that they were not interested in being online teachers in the future. They gave two main reasons, which were various technological barriers and a lack of ‘real’ in-person interaction. Students’ limited use of e-learning in traditional CSL teaching and a lack of online distance learning involvement, combined with the students’ lack of knowledge about the possibility of web-technology and mobile-technology, could also contribute. Other issues identified include: instructors who were lacking in synchronous online language teaching experience or who had limited pedagogical skills for the online learning environment; the poor quality of synchronous online video-conferencing, with hardware and software issues (such as poor online transmission quality, network connection issues and some instability in software design); a
lack of sufficient online practicum opportunities and the absence of instructor feedback on the students’ practicum performance.

While newer technologies used in distance education have opened up a wide range of possibilities for language teaching that were not previously possible (see Chapter 2 for a discussion), there are still some limitations in what can be taught through distance education when compared with face-to-face environments (Stockwell, 2012a). The instructional mode may also be influenced by the technologies that are available. For institutions that offer exclusively distance education, such as the Open University in the UK or Universitat Oberta de Catalunya in Spain, technology takes on an immediate and central role for many aspects of instruction, and such institutions need to ensure that they have stable and good quality technology so that instruction can be carried out smoothly. In contrast, in institutions where the instruction is almost exclusively face-to-face, there may be somewhat less of a need to use technology for instruction, making administrators less likely to dedicate money and resources to state-of-the-art technology (Stockwell, 2012a), which may have been the case with this Master’s program.

Despite the growth of technology-based language teaching and learning materials via Web technologies, social media, and mobile devices, in this program students were only exposed to online learning at a ‘novice’ level in terms of Compton’s (2009) framework for teachers’ levels of technological, pedagogical and evaluation skills (see Chapter 2).

There was some evidence in the research that students were provided with opportunities to use technology and acquire pedagogical information and evaluation skills, but their ability to apply the pedagogical knowledge and identify impact on learning outcomes will need to be addressed through experiences such as supervised practica if they are to reach Compton’s (2009) ‘proficient’ or ‘expert’ levels of technological, pedagogical and evaluation skills as teachers.

5.3.1 Section Summary

This section has addressed the issue of participants’ limited experience in TCSL synchronous online distance learning. The radical development of the e-environment in the field of L2 education makes it possible for online learning to become a growing practice in
Chinese CALL. Such a trend also creates an increasing demand for online TCSL teachers worldwide. The Master’s program provided a 15-hour synchronous online distance learning workshop once a year as preparation for their students who were interested in online teaching. However, the majority of the participants still considered the traditional face-to-face classroom setting to be the mainstream of current TCSL in practice in Taiwan. The possible reasons for this included the various technological barriers related to such learning, a lack of ‘real’ in-person interaction on-line, students’ lack of online distance learning experience, and students’ lack of advanced knowledge about web-based and mobile-based technology.

The research findings indicated that in such a short-term workshop, the Master’s students were only exposed to online learning at a novice level in Compton’s (2009) framework for levels of teacher expertise with e-learning. Both the instructors and students expressed the need for extended pedagogical training and online practicum opportunities. Such training and opportunities could improve the Master’s students’ chances of reaching the proficient or even expert levels of Compton’s (2009) framework. Instructor feedback on the students’ practicum performance that was considered crucial for correcting and improving students’ online teaching performance was shown to be absent in the workshop practice. One more important issue raised in this discussion is the need for expert instructors who are experienced in synchronous online language teaching.

5.4 Chapter Summary

The primary purpose of the chapter was to discuss important issues that arose from the research findings and check the findings against the existing relevant literature. Three key issues were discussed in this chapter. The first issue considered participants’ perceptions of the value of e-learning in TCSL and suggested three probable factors that had effects on participants’ perspectives on the importance of students’ e-learning development in their intended curricula. The second issue was highlighted by applying Mishra and Koehler’s (2006) TPACK framework to evaluate participants’ curricula in relation to the formal courses of the Master’s program. Finally the third issue related to participants’ limited experience in relation to TCSL synchronous online distance learning.
With respect to the first issue, participants’ perceptions of e-learning in TCSL, their prior e-learning experiences in TCSL practice, and their perspectives on the relationship between TCSL teachers’ e-learning competence and job opportunities are proposed as the three main factors that caused the participants to disregard e-learning as an important capability for the Master’s students. The discussion in this section highlighted the argument that participants in general failed to be aware of the radical developments in technology-reformed CSL educational environments and, therefore, continued to believe that traditional face-to-face classroom teaching should be the norm for TCSL. Students’ uncritical self-confidence in using e-technology is also considered one of the factors that led to the devaluation of the development of e-learning capabilities within the Master’s program.

The discussion of the second issue in this chapter related to Mishra and Koehler’s (2006) TPACK model, suggests an insufficiency of e-learning education in all three e-learning related knowledge domains, TK, TCK, and TPK, within the formal courses of the Master’s program. This research makes the conclusion that the Master’s program not only needed to provide more advanced TK education for their students, but also needed to take into consideration their students’ ability in keeping up with and adapting to the advent of new technology in the program’s formal course design. In terms of the insufficiency of TCK education within the formal courses, this research concludes that students’ ability in the use of advanced web-based and mobile-based technology for enriching TCSL teaching materials with authenticity and cultural context should be taken into account in the formal course design. The discussion of this issue also indicates the need for reinforcing the students’ knowledge in relation to the learning theories of e-learning, which seemed to be overlooked by the participants across all three major groups, so as to improve their TPK. Furthermore, improving the students’ abilities in the use of modern web-based and mobile-based technology for creating virtual authentic language learning environments and/or performing online multi-way synchronous/asynchronous collaborative learning activities was also considered important for the students’ TPK enhancement.

The third issue relates to an increasing demand for online TCSL teachers worldwide due to the radical development of ICT in the field of L2 education. The discussion on this issue also highlights participants’ limited experience in TCSL synchronous online distance
learning and the need to provide the students with more extended pedagogical training and online practicum opportunities. Providing instructor feedback on the students’ practicum performance (which was absent in the workshop practice) and seeking more experienced instructors in TCSL synchronous online learning are also considered important for effectively enhancing the students’ online teaching capabilities.

Over all, participants in general had somewhat limited expectations of any future need to enhance students’ e-learning capabilities within the program, and it could be argued that such an attitude might dampen the students’ desires to enhance their personal e-learning capabilities and incorporate e-learning into their future teaching practice.
Chapter 6: CONCLUSION

This study was conducted in the current educational context of Taiwan. The study investigated e-learning in relation to the various curricula among the different stakeholders in a TCSL Master’s program, using a mixed methods approach. This involved several semi-structured, qualitative interviews with administrators, instructors and students to collect detailed and descriptive information about their perceptions, perspectives, and experiences in relation to e-learning in TCSL practice in general, and a specific Master’s program. A document survey was also conducted to supplement information gathered through interviews. This qualitative data was analysed to create a case study that captures an extensive understanding of e-learning in relation to a TCSL Master’s program in Taiwan. This chapter provides an overview of the thesis and discusses implications for further research in line with the main findings.

6.1 Overview of the Thesis

This thesis presents a case study focusing on the role of e-learning in a Master’s degree for teaching Chinese as a second language (TCSL) in an institute in a university in Taiwan. Chapter 2 examined the recent literature on the topic. In this thesis, e-learning refers broadly to all forms of teaching and learning facilitated by electronic and information communication technologies (ICT). Since a Chinese CALL program was first developed in the 1970s, computer-assisted and web-based Chinese language instructional software programs have become significantly more available for language teachers and learners. More recently, an increasing tendency to involve e-learning in CSL (Chinese as a Second Language) instructional designs has also been echoed in a myriad currently available language learning software programs and a rapidly expanding number of semi- or fully-online language courses. An expansion in the number of CSL learners worldwide, and the increasing number of overseas college students in Taiwan has created a need to ensure that teachers in TCSL (Teaching Chinese as a Second Language) are adequately trained in the implementation of e-learning.
Learning Chinese as a second language has become a topical issue around the world in recent decades (ATCSL, 2010; Y. Zhang, 2009). More than 30 university ancillary CSL centres have been established in the recent decades in Taiwan (Ministry of Education, 2010). To meet the enormous and ever-growing demand for TCSL teachers at home as well as worldwide, Taiwan has seen the development of nearly 20 universities and institutes providing formal TCSL teacher preparation Bachelor and/or Master’s degree programs since the first TCSL graduate institute was established in 1995 (ATCSL, 2010). Due to the increasing awareness of the rapid development of ICT (information communications technology) that has had a great impact on almost every aspect in our daily life as well as the field of education, there have been calls for a greater emphasis on e-learning implementation in the field of L2L (second language learning) (Kessler, 2005). In the field of TCSL more specifically, e-learning application competence has also been included as one of the capabilities in the standards for TCSL teachers. In addition, TCSL online learning seems to be becoming pervasive, even ubiquitous, nowadays (cf. eChineseLearning, 2006; Mandarin Training Online, 2012). In recent years, e-learning has been promoted by official and commercial actors in almost every aspect in the field of education in Taiwan. However, there is evidence there is generally insufficient teacher training in terms of the integration of e-learning knowledge and skills into language teaching pedagogy, including CSL teacher education.

In Taiwan, TCSL teachers seem not to be trained to meet with such global needs in this e-era. It had been reported that the TCSL teachers were generally inadequate in the use of e-learning related technology in their teaching practice (Zhang, 2010). In response to the needs of promoting competence in TCSL teachers’ e-learning application, the Taiwanese government funded a five-year TCSL teacher e-learning training program from 2008 to 2012. This program aimed at preparing TCSL teachers to develop and be able to integrate their e-learning knowledge and skills into TCSL practice so as to cope with current technology-rich language learning environments (echinese, 2012). However, my own experience in attending the program and other evidence suggests that the reaction from the in-service TCSL teachers was less than enthusiastic, with few teachers interested in attending the courses. Furthermore, a brief review of relevant websites suggested that
formal TCSL teacher preparation programs in Taiwan showed little evidence that they planned to adequately prepare their graduates with the e-learning-related knowledge and skills that might be required for adapting to today’s technologically advanced language learning environment. This evidence suggested that a more comprehensive and deeper review of the situation in TCSL training in Taiwan was called for, such as an in depth investigation of e-learning education within Taiwanese TCSL Master’s programs to understand what was being planned (i.e. the intended curriculum), what was actually happening (i.e. the enacted curriculum) and the outcomes (i.e. the experienced curriculum), particularly in relation to three models for evaluating pre-service teacher preparation in the field of e-learning, namely Mishra and Koehler’s (2006) TPACK (Technological Pedagogical Content Knowledge), Hampel and Stickler’s (2005) Seven-Level Skills Pyramid and a reformed model proposed by Compton (2009).

Chapter 3 outlined the research that aimed to explore the relationship between e-learning education and TCSL Master’s programs in Taiwan. A solid understanding of such a relationship was sought, in the first place, by exploring the existing literature and clarifying the meanings of e-learning more generally, investigating conceptual frameworks of curriculum, and then researching the developing role of e-learning, firstly in CALL (computer-assisted language learning), and secondly in teacher preparation programs teaching Chinese as a second language (TCSL).

This study sought to add to this research by conducting an in depth inquiry into the major stakeholders’ perceptions of the role of e-learning in TCSL in terms of their intended, enacted and experienced curricula of e-learning within a TCSL Master’s program. The research design involved a qualitative case study selected to allow the researcher to study this particular social phenomenon by accessing information provided by different groups of individuals within one learning community, in this case, a TCSL graduate institute in Taiwan. The study is framed by an interpretivist theoretical perspective and grounded in a constructionist epistemology. The primary research question was “How did the major stakeholders of the case study conceive of the role of e-learning education in a TCSL Master’s program in Taiwan?” Secondary research questions broke this main question down into several sub-questions, which inquired into the various stakeholders’ perceptions
of the role of e-learning and their intended, enacted and experienced curricula (cf. Billett, 2006) in a Master’s program. The case design employed in this study is an embedded single-case design (Yin, 2009).

Qualitative data collection methods and data analysis techniques were chosen that could facilitate an extensive understanding of e-learning in relation to the TCSL Master’s program. Using both purposeful and snowball sampling, 17 stakeholders were recruited from administrators, instructors and students at different stages in their course in the case study program. Semi-structured, face-to-face, audio-recorded interviews were conducted for collecting detailed and descriptive information about participants’ perceptions, perspectives, and experiences in relation to e-learning in TCSL practice as well as the Master’s program. Thematic data analysis (Braun & Clarke, 2006) was applied to the interview transcripts to examine, interpret and generate the findings. A document survey was also conducted to supplement information-gathering through interviews.

The findings in Chapter 4 suggested that perspectives and experiences varied among the participants generally, but not always, in expected ways. Firstly, within this Master’s, e-learning was not a valued component of the program. The administrators and instructors did not believe it necessary that students apply e-learning skills in the classroom, and they did not consider this aspect to be an essential (core) element for inclusion in the Master’s program. Similarly, they felt that online distance teaching was not an expected e-learning capability for their Master’s students. It could be argued that an extremely small proportion of e-learning electives (two) among an overall offering of more than 30 electives was relatively ‘unbalanced’. Such a lack of emphasis on e-learning in a Master’s degree of this nature has strong implications for the subsequent teaching of those who graduate from the program. Not only will they not have been presented with a wide range of personal and teaching skills with respect to e-learning but they may not be exposed to the potential benefits of e-learning in second language acquisition.

In relation to students, there were mixed reactions towards e-learning. This is evident across all three of the student sub-groups. The failure to recognise the importance of e-learning is particularly interesting in that this cohort of participants, unlike the instructors and administrators, mostly come from the digital native generation. Using e-tools for
preparing teaching aids and effectively applying e-technology in TCSL practice were the two main goals identified by the Master’s students and online distance teaching capability, such as synchronized online video-conferencing, was not mentioned despite its importance and rise within CSL. From these general findings, three significant issues arose and were discussed in Chapter 5.

The first issue considered participants’ perceptions of the value of e-learning in TCSL and suggested three probable factors that had effects on participants’ perspectives on the importance of students’ e-learning development in their intended curricula: participants’ perceptions of e-learning in TCSL, their prior e-learning experiences in TCSL practice, and their perspectives on the relationship between TCSL teachers’ e-learning competence and job opportunities. All three main factors appeared to contribute to the participants disregarding e-learning as an important capability for Master’s students.

The second issue was illustrated by applying Mishra and Koehler’s (2006) TPACK framework to evaluate participants’ curricula in relation to the formal courses of the Master’s program. The analysis suggests an insufficiency of e-learning education in all three e-learning related knowledge domains, TK, TCK, and TPK, within the formal courses of the Master’s program. The research concludes that the Master’s program not only needs to provide more advanced TK education for students, but also needs to take into consideration their ability in keeping up with and adapting to the advent of new technology in the program’s formal course design. In terms of the insufficiency of TCK education within the formal courses, this research concludes that students’ ability in the use of advanced web-based and mobile-based technology for enriching TCSL teaching materials with authenticity and cultural context should be taken into account in the formal course design. A need was also indicated for reinforcing the students’ knowledge in relation to the learning theories of e-learning so as to improve their TPK. Furthermore, improving the students’ abilities in the use of modern web-based and mobile-based technology for creating virtual authentic language learning environments and/or performing online multi-way synchronous/asynchronous collaborative learning activities was also considered important for the students’ TPK enhancement.
The third issue related an increasing demand for online TCSL teachers worldwide due to the radical development of ICT in the field of L2 education. The conclusion is drawn that there is a need to provide the students with more extended pedagogical training and online practicum opportunities. Providing instructor feedback on the students’ practicum performance (which was absent in the workshop practice) and seeking more experienced instructors in TCSL synchronous online learning are also considered important for effectively enhancing the students’ online teaching capabilities. to participants’ limited experience in relation to TCSL synchronous online distance learning despite

6.2 Implications of the Study and Suggestions for Future Research

This thesis added to the research of e-learning. Specifically for this case study recommendations for this program include:

- It is imperative in future TCSL programs that greater attention is given to e-learning
- Engaging more instructors who could be expert in both TCSL and e-learning practice
- Development of specialized online TCSL teacher preparation
- Extend the synchronous online distance workshop to be a formal course of the Master’s program
- Involve more e-learning in general courses to prepare students to not only be informed but also critical creative user e-learning users
- Engaging more government supported e-learning related research projects and encouraging their Master’s students who are interested in this field to participate as assistant in the projects.

More broadly, the main findings of the study discussed above imply that follow up research studies are needed several areas:

1. Similar studies could be undertaken with students studying either TCSL or other Asian languages in other contexts (that is, in a recognised language school training program offering a corresponding Master's degree in the teaching of a second
language, and ideally one that attracted foreign students as well students from its own country, for example, in Japan or Thailand.

2. It would also be interesting to follow-up the participants in the present study (particularly the 11 students and the instructors) to ascertain if their attitudes and practices regarding TCSL had changed in the intervening years. That is, it might be conjectured that some of them at least may now be incorporating e-learning into their teaching much more than they envisaged at the time of this study. Of course, the technology itself would already have changed dramatically since they were interviewed for the present study.

3. It would be interesting to observe as well as interview participants such as those in this study to see how consistent practice is with reports of practice about the place of e-learning in TCSL.

4. This research was conducted with a relatively small number of people in a single institute. It cannot be said that it applies to a broader population. A future research project might attempt to obtain a broader sample by doing a survey of participants across a number of institutes to whether the findings apply more generally or not.

5. More in-depth research is needed for exploring the role of e-learning in TCSL in a variety of learning settings; both the traditional in-class face-to-face setting and virtual online setting and the blended of the two.

6.3 Conclusion

By exploring one case in depth, this study confirms the literature, which indicated a general neglect of a significant role for e-learning in TCSL professional education, both in terms of applying up-to-date theories for L2 learning and in terms of preparing teachers for the explosive growth in international demand for CSL on-line teaching and learning. It adds to this research by providing insights into the perspectives underlying current practice by the three major sets of stakeholders in TCSL education, administrators, instructors and students, by drawing out the implications of the findings in terms of theoretical as well as practical perspectives, and by providing helpful recommendations for future research.
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