

Abstract

The planning and promotion of a foreign or second language education in the primary school seems a worldwide trend. English and Chinese, as global communication media, are particularly emphasised recently. In Taiwan, learning English is regarded as a Foreign Language study (hereafter referred to as 'EFL'), as it is far different from learning English as a Second Language (hereafter referred to as 'ESL'), or as a First Language (hereafter referred to as 'L1'). In the learning environment of L1 or ESL, it is necessary to use English in daily life, such as, going to school, going shopping and even watching television. However, in EFL learning environments, learners have limited opportunity to practice English particularly speaking and listening in authentic contexts with other speakers of compatible age and interest. This foreign language learning situation also occurs for Australian students of Mandarin. Therefore, this research project assumed that Information and Communication Technology (hereafter referred to as 'ICT') can enhance opportunity for structured practice and development of spoken language, both in and out of the classroom for second language (hereafter referred to as 'L2') students, is a potentially powerful application and warrants trial and evaluation.

This research explores the potential for ICT technology to be integrated into the practice of second language teaching pedagogy, to enhance current teaching theory in support of second language teaching and acquisition. The trans-national and cross linguistic language learners in Taiwan and Australia used of Yahoo messenger program, as well as the transference of the resource of instruction between young learners and machine. This research project provided a twelve-week ICT intervention for Taiwanese English-based learners and Australian Mandarin-based learners to practice their target languages, and students were given the same topic weekly to prepare their conversation weekly. The project recruited similar age Australian and Taiwanese students (at the range of ten to eleven), and they have learnt their target language for three years in their own countries. Through language testing of students (pre- and post-intervention), observation of students, and individual interviews with teachers and parents, the researcher sought to build a rich, ethnographic account of the learning activities and identify and evaluate the effects of on-line exchange program for a twelve-week period in terms of students' speaking and listening competence as well as students' motivation, language performance, and cross-culture awareness.

Major findings on the reporting ICT intervention for the exciting L2 learning outcomes (especially on speaking and listening competence) and cross-culture

awareness for Taiwanese-based learners of English and Australian-based learners of Mandarin supported the hypothesis that the integration of ICT, collaborative learning, and TBL into the language learning classroom is a useful strategy in foreign/second language learning environments. These outcomes contribute to the literature relevant to SLA, learning motivation, computer-assisted instruction, TBL, collaborative learning, and cross culture theory, and make the six elements to be practical in language pedagogy which provide a transdisciplinary approach to the enhancement of language teaching in Australia and Taiwan. The study has the potential not only to improve students' second language acquisition, but also advantage language curriculum. If the suggestions and model of the ICT-integrated into language learning adopted by the teachers, schools, and educational departments, it would improve the achievement for students, and benefit to parents, teachers, and schools who involved language learning environment.

Key Words: ESL, L1, L2, ICT intervention, and Cross-culture.

Incorporating an On-line Exchange Student
Language Program within Second Language
Curricula: A Case Study of Taiwanese Primary
School Students Working with Australian Students

By

Meng-yi (Monica) Huang

S0157045

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Declaration

This work has not been previously submitted for a degree or diploma in any university. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except where due reference is made in the thesis itself.

Name: Signature

Date: 20/12/2011

Chapter One: The Second Language Teaching and Learning Environment in Australia and Taiwan

1.1 Statement of Thesis

The rapid proliferation and development of information and communication technology (ICT) is a worldwide trend. This technology has applications in a wide variety of fields, such as aeronautics, medicine, business, and education. The Internet has been widely used in the field of foreign language teaching, especially in E-mail (Electronic Mail), BBS (Bulletin Board System), chat rooms, and blogging (Ding 2008). The exploitation of Internet resources in the language classroom benefits both teachers and students. It has been noted that effective instruction requires providing information, guiding learning, providing opportunities for practising, and assessing learning. Information and communication technology (ICT) can create rich learning environments to facilitate these learning factors. The triangular relationship (teacher-student-computer) and associated interactions create directly engaging and active language learning spaces, ICT is not yet widely integrated in language teaching classrooms.

English as a foreign language has been taught as a compulsory subject at primary schools for over nine years in Taiwan (Lee 2008); at the same time, Australian students are encouraged to learn Mandarin (Patty 2007). However, the effective development of language proficiency by Taiwanese pupils is limited and frustrated by a pedagogy and curriculum which is heavily dependent on rote-learning, quizzing and testing. In addition to this, Taiwanese English language students work within an unsupportive environment at school, in their family lives, and in the community with

regard to opportunity for real language practice. Lee (2008) records the poor proficiency outcomes for Taiwanese students despite years of English study. This foreign language learning situation also occurs for Australian students of Mandarin (Orton 2008) who live in an English dominated community.

The purpose of this study is to design, implement, and explore a technologised, real-time language learning syllabus for second language learners. It is assumed that learning outcomes for Australian and Taiwanese primary school students will be improved by authentic second language communication opportunities between culturally, linguistically and geographically distant EFL classrooms supported by Yahoo Messenger technology. In particular, it is expected that speaking and listening skills, as well as learner motivation, and attitude towards cultural exchange will be enhanced. Therefore, this research explores issues and outcomes for trans-national and cross-linguistic language learners from Taiwan and Australia arising from the use of technologised communicative media to develop second language proficiency.

1.2 The Scope of the Second Language Learning Environment in Taiwan

The Asia Society (2009) reports that the planning and promotion of a foreign or second language education in primary schools seems to be a worldwide trend and that English as a global communication medium, is particularly emphasised. In northern Europe, children start to learn English in the third or fourth grade, and Russia has more than one thousand primary schools that start English classes from the second grade. In Asia, particularly Hong Kong, Singapore, and the Philippines, students start learning English at a very early stage in primary school. Mainland China mandates English courses for fifth- and six-grade primary pupils. Recently, in 1997, South

Korea started teaching English to third-grade students. Lee (2008) reports that Japan also began an experimental English teaching program in public schools in the spring of 2002 and initiated a nationwide survey to collect public opinions on English education in primary schools.

In Taiwan, learning English is regarded as Foreign Language study (English as a Foreign Language, hereafter referred to as 'EFL'), as it is quite different from learning English as a Second Language (hereafter referred to as 'ESL'). In the ESL learning environment, it is necessary and possible to use English in daily life, such as going to school, going shopping and watching television. In contrast, in EFL learning environments, learners have little opportunity to practice English, particularly speaking and listening, in authentic contexts with other speakers of compatible age and interest. Therefore, a pedagogical technique that can enhance opportunities for structured practice and development of spoken language by EFL students both in and out of the classroom, is a potentially powerful application of ICT and warrants trial and evaluation.

According to a report by the Cambridge Examinations Centre (2005), Taiwanese parents invest a great deal of effort and income into their children's English education while their children are young, but testing results do not show clear and obvious improved competence. Primary school English education continues to depend on English 'cram' schools in Taiwan. It is common that students who attend regular after-school or cram schools may study for four hours or more in Taiwan in addition to their regular school day. Cram schools are private schools that train their students to meet particular goals, most commonly to pass the monthly or entrance examinations, in a short period of time.

An examination of a ten-year educational reform project (Lee 2008) shows that although Taiwan's educational expenditure as a proportion of GDP (Gross Domestic Product) has fallen; compared with nine years ago the number of English cram schools has more than tripled (Lee 2008). However, attending cram school is not positively correlated with children's English ability and grades according to Cambridge Examinations Centre (2005). From 2002 to 2009, the number of English cram schools grew to over 1000; nevertheless, the ranking of Taiwanese children's English ability compared with other Asian countries has ranked between the fifth and sixth (Figure 1).

Therefore, it could be argued that English education should not continue as a subject any longer at Taiwanese primary schools, if the way it is taught goes unchanged. Pedagogical innovation is not the norm in Taiwan (Chang 2009), so the national language curriculum remains examination-focused. However, the curriculum is unsuccessful in improving language ability, even as measured by examinations. Taiwanese education authorities can and should consider changes in learning and teaching methods to introduce a more practical focus to effectively assist learners to develop their language skills, particularly speaking and listening, during their long periods of study.

**Figure 1: Taiwanese Children's English Ability Comparison Asian Area
2007-2009**

Ranking / Year	2007	2008	2009
1	Malaysia	Malaysia	Malaysia
2	India	Hong Kong	India
3	Indonesia	India	Indonesia
4	Philippines	Indonesia	Hong Kong
5	Hong Kong	Taiwan	Taiwan
6	Taiwan	Philippines	

Source: Cambridge Examinations Centre 2009 (Abridged)

1.3 Objectives, practices, and limitations to Taiwanese English Language Curriculum

1.3.1 Curriculum

For twenty million Taiwanese non-native speakers, learning English is an increasingly mandatory challenge. It is commonly accepted that English competence leads to much-sought-after social status, power, wealth, and further education opportunity. Therefore, many Taiwanese regard proficiency in English as critically important to their careers, as well as to the international status of the community and its members (Pai 2000). English instruction was integrated into the primary curriculum for grades five and six in 2001. Third and fourth graders then began weekly English courses in 2003. Due to an increasing demand for English-proficient citizens both in the public and private sectors, during the following three years, a series of educational reforms in the English curriculum were initiated by the Ministry of Education (Taiwan Ministry of Education 2006).

The Ministry of Education Grade 1-9 Curriculum Guidelines (2006) for primary schools had the following aims:

- Develop students' interest in learning English;
- Develop students' speaking and listening comprehension;
- Build students' implementation of living English; and
- Bridge the connection with continuing learning at junior high school.

According to these guidelines, grade 3 and 4 students should be taught English that emphasises speaking and listening comprehension, which constitute essential skills for 'living English' as opposed to an academic knowledge of the language. Fifth and sixth grades, on the other hand, are focused more intently on learning grammar and memorising at least 500 vocabulary items; the curriculum is principally geared to ensure that students pass the mid-term and final exams.

1.3.2 Assessment of English Proficiency

Brown (2004, p. 19) defines an effective test as: (1) not excessively expensive; (2) usable within appropriate time constraints; (3) relatively easy to administer; and (4) having a scoring/evaluation procedure that is specific and time-efficient. Whilst such features may be necessary to an efficient language test, they are not adequate to ensure that a test does in fact measure the range of linguistic skills and knowledge constituting true competence, particularly in respect to listening and speaking which are difficult to assess by the written feedback typically sought in school language tests. Well constructed language tests can evaluate students' learning outcomes and, in turn, allow instructors to evaluate and improve their language teaching and learning methodologies. Brown (2004, p. 42) notes that the current trends in language

assessment ‘focus on communicative and process-oriented testing that seeks to transform tests from anguishing ordeals into challenging and intrinsically motivating learning experiences.’ Whilst language testing offers important evaluative information for language teachers, tests in wide use in schools in Taiwan are not yet process-oriented and their capacity to evaluate listening and speaking skills remains problematic.

Taiwanese English exams emphasise writing and reading comprehension, and Taiwanese English teachers ignore listening and individual oral tests (Wang 2008). Most of the primary English tests are achievement tests, which place emphasis on vocabulary, spelling, and grammar, using multiple-choice and cloze tests that involve filling in a missing word. Ajideh & Esfandiari (2009) argue that language tests such as cloze tests only measure a learner’s passive linguistic competence and reading skills; they do not directly measure a student’s performance ability. Thus, the results of paper- and pen-based tests cannot properly measure the learners’ speaking competence and listening comprehension. Therefore, Taiwanese teachers have limited knowledge concerning the communicative abilities and interests of their students other than their ability to write and read short segments of unconnected text. As is evident from Taiwan’s declining comparative English proficiency outcomes (Figure 1), many Taiwanese students do not perform well on traditional paper- and pen-based English tests, which fail to test the achievements of English learners in ‘living English’ proficiency. Taiwan’s English teaching and learning pedagogy and assessment system appears to be failing to achieve adequate proficiency outcomes on several levels. In this context, the importance of innovative pedagogical methods aimed at promoting higher levels of achievement demonstrated through assessment structures and generating learner performances of ‘living English’ is paramount.

1.3.3 Teaching

The teaching methodology used the traditional whole-class lecturing method is considered to be one of the major causes of the generally low English proficiency and decreasing interest in English learning in Taiwan (Tseng 2003). When using this method, 'the English teacher dominates the floor by speaking throughout the classroom session, and the students simply sit and listen. They (the students) seldom initiate talking' Tseng (2003, p. 136).

Lin and Chen (n.d.) find three major problems with the Taiwanese system – the shortage of English teacher training programs; the two-hour a week learning limitations; and a complex phonetics system. Firstly, 80% of primary English teachers have graduated from an English Literature Department which rarely offered relevant English Language Teaching courses for delivering such skills as pronunciation and listening comprehension or the teaching methods that facilitate this. Secondly, English has been taught as a stand-alone, non-integrated subject, and English instruction classes have only been taught two times a week, equalling 80 minutes in total. This is not adequate for the grade school students, as they are not instructed within a whole English environment, and they can only use the target language in class. Finally, 48% of Taiwanese primary school teachers still teach John Samuel Kenyon and Thomas A. Knott phonetic symbols (hereafter referred to as 'K.K. phonetic symbols') which tend to confuse and frustrate pupils in their writing and pronunciation. The long-term domination of the K.K. phonetics strategy in the primary language curriculum has not achieved improved listening and speaking comprehension. Therefore, about 70% of English teachers play tapes or DVDs during English class in order to help students in listening and speaking with K.K. phonetic symbols as an auxiliary aid. An additional

problem is that most public primary schools do not offer after-school English courses due to a lack of English teachers and financial support. So, many Taiwanese learners are not achieving the objectives of their school curriculum in terms of their ability to learn the phonology of English and to recognise and use English in conversation.

Liang (2006) finds that after six years of learning English, most Taiwanese primary students are hardly able to communicate in English due to the fact that there has been too much teaching and too little learning in a traditional classroom in the EFL environment. Lee (2008) finds that 70% of primary teachers believe that the schools should provide computers in language classrooms to integrate technology into language teaching and learning in order to develop students' communicative abilities and interests in class. The student-computer ratio for school classroom is 7:1 (Tainan Shihmen Elementary School 2009). In addition to their desire for greater access to the computer and online technologies, most teachers agree that it is difficult to develop and enhance students' speaking abilities and interests without an *authentic target* such as a *real* person who is a competent or native English speaker.

1.4 Objectives, practices, and limitations to Australian Mandarin Language Curriculum

1.4.1 Curriculum

According to a recent report (Patty 2007), Mandarin will soon become compulsory in some New South Wales public schools. As Australia increases trade, economic and social exchange with Mainland China, more Australian students are encouraged to learn Mandarin as a second language to enhance their job prospects. Australian primary schools provide flexibility in their language curriculum, from kindergarten to

year 6, and schools offer students a minimum of 60 minutes per week of language courses in one of the eight priority languages – French, German, Italian, Spanish, Indonesian, Japanese, Mandarin, and Korean. The NSW Board of Studies (2007, p. 1) specifies the following framework for the Chinese (Mandarin) curriculum:

- Students will continue to experience Chinese in a range of contexts through the integration of listening, reading, speaking and writing skills;
- Students will continue to experience, enjoy and respond to features of the culture of Chinese-speaking communities; and
- Students will continue to gain knowledge of, and develop skills in, the application of grammatical structures.

Australia has adopted and promoted a national policy to offer Language Other than English (LOTE) instruction in public schools since 1987. As a consequence, this policy has led to the proliferation of private language schools offering extra instruction in Mandarin. The current Mandarin curriculum in Australian public schools emphasises language in use and cultural appreciation. Pupils are not only taught Mandarin as a subject, but also provided with cross-cultural instruction. In addition, speaking and listening skills are required to be developed across the entire curriculum by appropriate teaching methodology.

Although the NSW primary Mandarin curriculum sets the overall speaking and listening proficiency goals for students, a lack of opportunity for authentic practice in class and in the community limits achievement of these goals and the motivation of learners. Hence, this research project has the potential to assist NSW primary schools in achieving the first two language learning goals of the Board of Studies framework.

It seeks to accomplish this by means of technological connections that bring together children of similar age and cognitive capacity in task-based language learning activities that enhance the school's existing language curriculum and extend the speaking and listening opportunities and skills and the cross-cultural understanding of the learners. Students are encouraged using selected study materials to explore and share their thoughts in basic conversations on a predictable topic in Mandarin and in English.

1.4.2 Assessment of Mandarin Proficiency

The demand has increased for more meaningful and valid assessment processes and learning outcomes relevant to students' language achievement in various contexts. Teachers seek assessment methods that go beyond the traditional paper-and pen-based and teacher-designed tests. According to K-6 Educational Resource of NSW (2007, p. 3) the most effective methods for assessing the achievement of curriculum objectives are:

- observing and recording student achievement as it occurs, in such forms as oral presentations, movement skills, participation, and language development;
- mapping progress through the collection of student work samples over a period of time (often through print-based products);
- tasks that incorporate the application of understanding and learning processes in a set project;
- analysis of non-print-based work samples in areas such as Visual Arts and Science and Technology); and
- paper- and pen-based testing such as mid-term or final examinations.

The Australian curriculum contains a more wide-ranging series of assessment tasks than that available in Taiwanese language classes. However, the limitations of the curriculum in a foreign language environment remain, in that there are insufficient authentic practice opportunities in class and in the community to ensure Australian primary learners of Mandarin achieve these goals. Thus, the fact that Australian learners of Mandarin are not fully achieving the objectives of the curriculum (Orton 2008) as a consequence of limits to authentic communicative practice.

1.4.3 Teaching

Orton (2008, p. 30) identifies four key challenges for English speaking learners of Mandarin: ‘tones, homophones, characters, and the system of particles and verb complements’. In Mandarin, tone distinguishes syllables that are otherwise phonemically identical. The meaning of $d^{\grave{}}a$, for example, is different from that of $d^V a$ or $d^{\acute{}}a$. Since English syllables are not distinguished by tone, the tone system causes difficulty for English learners in listening comprehension. Orton (2008, p. 33) notes that, ‘without a global sense of how they should sound, it is virtually impossible for learners to develop oral skills.’ Therefore, methods to provide frequent, sustained opportunities to hear the language as it is used naturally and to invite opportunities to use it productively need to be created in Australian primary language learning classrooms. Lin & Fun (n.d.) identify the weaknesses of Chinese Mandarin learning in Australia as a lack of teaching aids, low student motivation, lack of opportunity for students to speak Chinese, and the gap between Eastern and Western culture. Pintrich & Schunk (1996) explain that willingness to communicate builds *real* language competence. In order to be willing to communicate in a foreign language, learners need to be *motivated* to communicate. Classroom learning which is

examination-focused and includes extensive memorization with little real communication in the target language has not been able to generate high levels of motivation in language learners, and large numbers of Australian students discontinue their study of languages other than English once they complete their primary school education and it is no longer mandatory (Kretser 2010). Using a target language with other speakers in authentic communication, on the other hand, has been successful in improving the motivation of learners to continue their language learning. Facilitation of such activities can assist Australian and Taiwanese language teachers guide their students to achieve the speaking and listening outcomes identified by the curriculum.

NSW Board of Studies (2007, p. 1) seeks to clarify its statement of curriculum aims so that they ‘provide more extensive statements of the knowledge, understanding, skills, values and attitudes that each student is expected to achieve as a result of effective teaching and learning.’ It is intended that the outcomes of this study will contribute to more comprehensive language learning criteria in relation to speaking and listening competence as well as cross cultural competence and language learning motivation.

Shu (2010) reports that there are currently 30 million people worldwide learning Chinese and 300 million Chinese people learning English. The number of Taiwanese primary students studying English was approximately 1.6 million in 2008 (MOE 2010) and 80% of pupils in primary school attend so-called ‘cram schools’ after day school (Yu 2008). ‘Cram schools’ are private institutions that students attend after normal school hours; the great majority of cram schools teach English. Between May 2007 and May 2008, 17,648 cram schools were established, including those which have since closed down (Chou n.d.). The turnover of the Taiwanese cram school

industry is valued at NT\$100~150 billion, a sum that is paid annually by over 1.13 million customers of cram schools every year.

A survey conducted by Orton's (2008) reveals that the number of Australian students (Year 10-12) studying Chinese in NSW public school rose from 1325 in 2007 to 4279 in 2008. The number of students at the same level taking Chinese in NSW private schools reached around 19,000 in 2008. These language learning activities, both government and private, involve large numbers of learners and significant expense, yet both Taiwanese-based learners of English and Australian-based learners of Mandarin have little opportunity to use their target language in authentic contexts with other speakers of compatible age and interest. This research is designed to address these limitations for speaking and listening skills development in foreign language learning environments for the many learners and teachers involved.

1.5 Motivation and Limitations of L2 Learners in Non L2 Communities

1.5.1 Motivation of L2 Learners in Non L2 Communities

Gardner & Lambert's work in second language acquisition (1959) identified the most important factors influencing successful learning of a second language as, the social and cultural milieu, individual learner difference and the setting and context. In addition, Gardner found intelligence, language aptitude, motivation, and situational anxiety influence learners' second language acquisition. Motivation in particular has been found to have a powerful influence on second language learning outcomes. Dornyei & Schmidt (2002) identify aspects of second language learners' motivation that contribute to success in second language (hereafter referred to as 'L2') learning:

- the motivated individual expends effort to learn the language;

- the motivated individual wants to achieve the goal, and;
- the motivated individual will enjoy the task of learning the language.

Garate & Iragui (1993) surveyed three hundred and twenty-one high school students in Spain and found that in learning English as a third language, learners' English proficiency was directly proportional to their positive motivation. Two main types of motivation for learning may be distinguished: intrinsic motivation and extrinsic motivation. Extrinsic motivation is motivation by external incentives, such as the value of knowing a language for career advancement or academic grades. Intrinsic motivation, on the other hand, involves rewards closely associated with the subject itself: the learner may be motivated by enjoyment of the mental challenge of learning, for example, or by a positive attitude towards the subject matter. One key form of intrinsic motivation in language learning is integrative motivation.

Dörnyei (2010, p. 5) defines integrative motivation as motivation for learning a language based on 'a positive interpersonal/affective disposition toward L2 group [sic] and the desire to interact with and even become similar to valued member of the community.' Integrative motivation encourages significant communication between different L2 learners using their target language. Associate between intrinsic motivation and language learning can achieve to a success learning strategy.

However, several studies (Yang 2007; Dörnyei & Schmidt 2002; Ely & Lea 2002; Gardner 2001) have found that most English learners are extrinsically motivated: they place particular stress on the practical value of the language. This is particularly true in East Asia, including Taiwan. As Warden & Lin (2000, p. 536) argue:

Lack of integrative motivation among Taiwan EFL learners has significance

for language education in Taiwan, since most EFL classroom techniques are derived directly from Western ESL theory that assumes integration as one of the main motivations.

Su's (2008) found that students' language learning, motivation, and learning strategy development can be efficiently supported by areas of peer learning utilizing a computer network as a platform. In this learning methodology, students learn from and communicate with peers in a collaborative learning environment that stimulates their desire to learn more. Su (2008) illustrates that collaboration can not only increase interaction between peers, but also decrease the anxiety involved in learning a language. This research project will explore how to develop a peer learning strategy that involves connecting students of the same age (Mandarin learners in Sydney and English learners in Taiwan) using ICT technology so that they can use their respective second languages with other learners in order to improve their competence, interest and pleasure in learning and using their target language.

1.5.2 Limitation of L2 Learners in Non L2 Communities

As established earlier, the L2 learning environment in Taiwan has a limited capacity to develop proficient and motivated learners. Chang (n.d.) identifies four limitations that characterise the typical language learning experience of Taiwanese children:

- Students can use English only in class, and there is no opportunity for them to use and practise the target language after school or at home. They lack an environment in which communication in English is rewarding; as a result, they lose their motivation for learning.
- Students do not learn English skills comprehensively; it is, therefore, difficult

for them to apply what they have learned in daily life. Taiwanese students receive formal English instruction in grammar, sentence formation, and translation when learning at school, but little skills practice. As a result, the majority of these students are at the basic level in terms of overall English proficiency.

- There are too many students in the conventional English classroom; it is thus impossible for them to receive drill, feedback, and individual interaction with teachers.
- Taiwanese students are placed under pressure by multiple assessments and tests of English in class, which reduces their motivation and interest.

Although EFL has been taught in primary schools for more than nine years (Lee 2008), the lack of interactive communication is a serious problem in Taiwan. For Taiwanese students, the traditional method involves learning by rote and is test-oriented. As there is no opportunity for them to practice outside school and as students learn subjects separately in Taiwanese schools with no connection among subjects, as occurs in cross-discipline or ‘whole of curriculum’ language learning, passive and isolated study of the language is the only current learning option available. What students do, in traditional teacher-centeredness class, is to memorize and complete tests mechanically. Daly’s (2009) found that the dominant examination system forms the attitudes, expectations, and pedagogies for teachers and students in Taiwan. Taiwanese pupils have been trained to be silent in class and students consider the teachers and textbooks to be authoritative sources of learning (Jin & Cortazzi 1998). The resulting pedagogical practices, at all levels of the Taiwanese English education system, are examination-driven; teacher-centered; and product-based. From the perspective of a communicative model of language teaching and learning which

emphasises the importance of language in use, they are serious limitation for the quality of the classroom experience of the learner, for their resulting motivation, and for overall proficiency. These practices also represent a separation between the desired learning outcomes of a curriculum promoting achievement of 'living English' and an actual pedagogy that is primarily engaged in rote-learning and inauthentic communication.

The atmosphere of a language classroom in Australia is different from what it is in Taiwan. Australian students are encouraged to express themselves in the target language (Norris 2001), and language teachers implement interactive, communication-gap activities in the syllabus. Nevertheless, Orton (2008) found that the drop-out rate of Mandarin learning continues to be high in Australia, as there is no supportive environment for students to practice their L2, and this diminishes their language learning motivation. Although the numbers of Chinese-speaking migrants in Australia has reached around 300,000 over the past three decades of these migrants speak Chinese at home only (Coughlan 2008). Therefore, while Australian language pedagogy tends to be more process oriented and encourages greater engagement in speaking and listening activity, Australian students of Mandarin experience the same dearth of authentic communicative opportunity, or free practice, as Taiwanese learners of English. Hence, these learners have much to offer each other in the form of technologically supported communication practice in one another's target language.

1.6 Justification for the Study

QCA from UK (Qualifications and Curriculum Authority and Learning and Skills Council) provides a definition of learning outcomes as 'Statements of what a learner

can be expected to know, understand and/or do as a result of a learning experience' (QCA 2004, p. 12). A learning outcome is a description of what result students are expected to achieve after a period of specific study. They are different from learning objectives which present content, direction, and intentions from the viewpoint of the teachers (Moon 2002).

1.6.1 Learning Outcomes of Listening

It is useful to compare the learning outcomes (listening) of Taiwanese and Australian language curricula for Level 1 students (see figure 2).

Figure 2: Comparing the Target Listening Outcomes between Taiwan and Australia

Taiwanese English learning outcomes (Outline)	Australian Mandarin learning outcomes (Outline)
Students will be able to listen to and understand 26 letter names.	Students will be able to listen to and understand 250 characters.
Students will be able to listen to and distinguish vowels and consonants in vocabulary.	Students discriminate between different sounds and sound patterns.
Students will be able to listen to and distinguish the stress, rhythm and intonation from words and sentences.	Students understand key words from short sentences and phrases in tightly-scaffolded and sequenced tasks.
Students will be able to listen to and understand greetings, and classroom and living English.	Students listen to the target language demonstrating understanding through non-verbal response, repetition, action or response in English.

Source: MOE 2006 & Department of Education & Training 2009

As evident in Figure 2, schools in both countries expect their students to achieve listening comprehension which includes abilities with words, tones, sentences, and conversation in their target language. Second language teaching and learning theories and theorists emphasise different methods for achieving improved listening comprehension. For example, the Audio-Lingual Method (ALM) stresses that language acquisition and recognition can be developed by listening repeatedly. Alternatively, Lu (2008) finds that listening diversity, listening times, listening involvement and speaking out will help students to improve their listening and speaking skills at the same time. ICT has the capacity to provide relevant, authentic, and meaningful learning environments which can be incorporated into a range of second language teaching methodologies allowing for repetition, diversity, listening and speaking integration and authentic conversation. The authenticity of the communications and exchange between young language learners in ICT environments suggests a task-based learning (TBL) approach that incorporates ICT in the language curriculum.

Task-based learning emphasizes the use of authentic language and requires learners to complete practical tasks in a target language. Yeh (2006, p. 2) describes TBL as a method that ‘engages students in meaningful learning experiences as the true essence of learning from a constructivist perspective.’ Unlike in a traditional teacher-centred class, constructivist learning is designed so that students participate in activities by which they construct new knowledge through meaningfully linking information to their prior learning and daily life experiences (Lin 2004). Task based learning represented a useful approach to an ICT supported cross cultural language learning program as it allowed the researcher to design a purposive and learner-centred series of activities that drew on prior learning but presented new opportunities for real-time

skills practice and development. Such practice opportunities can enhance learner achievement of the learning outcomes for listening in both the Taiwanese and Australian curricula.

1.6.2 Learning Outcomes of Speaking

Comparing the speaking curricula for Level 1 students between Taiwanese and Australian classrooms allows us to see similarities and differences between crucial language learning outcomes (see Figure 3).

Figure 3: Comparing the Speaking Outcomes between Taiwan and Australia

Taiwanese English speaking outcomes (Outline)	Australian Mandarin speaking outcomes (Outline)
Students will be able to pronounce 26 letters.	Students will be able to respond orally using single words or whole sentences in the target language.
Students will be able to pronounce words and sentences with correct intonation.	Students will be able to reproduce target language structure, pronunciation, and intonation in short words or statements.
Students will be able to sing and recite songs and rhymes.	Students will be able to repeat modelled words and chunks.
Students will be able to speak greetings, use classroom and living English.	Students will be able to express a need for repetition and clarification using learnt words or phrases

Source: MOE 2006 & Department of Education & Training 2009

Both Australian and Taiwanese speaking outcomes require pupils to speak their target

language with correct pronunciation, intonation, and express themselves using learnt words or phrases in their daily life. Therefore, adopting oral activities such as singing, stories, games, role play, and the language of classroom organisation is an important methodology for teaching language, and this kind of methodology is efficient especially for young learners. ICT supported conversations can extend interactive and authentic practice opportunity as well as cross cultural learning as students can use their target language via computer with real people in supportive learning environments. Therefore, ICT integration can significantly enrich the current range of speaking activity used to achieve the relevant learning outcomes of Australian and Taiwanese curricula.

Wu's (2006) research shows that both primary and junior high school students in Taiwan prefer oral activities to a traditional rote learning model. This is not surprising given that it is difficult for these learners to practise their target language after school. Indeed, the researcher taught English songs to her primary school learners using mobile technology in 2008. She recorded the process of the class, and sent the recordings to students' parents for reviewing and monitoring at home. Students were excited, engaged and performed well in front of the monitor. After that exercise, the parents and students responded more positively to the English class. Taiwanese language learners and their families appear to welcome ICT activity designed to enhance opportunities for English speaking and listening.

1.6.3 Improving Learning Outcomes

Australian and Taiwanese government education authorities agree that curriculum outcomes must include enhanced English/Mandarin speaking and listening

comprehension, motivation, cultural understanding and tolerance. Rost (2002, p. 59) defines listening comprehension as 'the process of relating language to concepts in one's memory and to references in the real world.' Thus, comprehension has been viewed as the most essential part of listening ability, and a listener needs the ability to figure out and connect the already-heard data to the outside world while he or she continues to hear. In addition, listeners always try to connect/relate what they have heard to their own relevant experience to make a reasonable interpretation.

Sun (2002) finds that listeners' background knowledge, anxiety level, speech rate, and adequate strategies influence listening comprehension. Low-anxiety activities that enable learners to engage in target language conversation, can therefore support comprehension which is properly calibrated to background knowledge specific to age and prior learning. Primary language students currently use the target language for activities, games, role playing, and problem-solving tasks, although they are permitted to use their mother tongue in class. They do not currently engage in regular, real-time conversations with target language speakers and community members as part of their classroom language activity and ICT has the potential to support this.

Brown (1994) generalises that there are six steps for learners in language classrooms: Imitative; Intensive; Responsive; Transactional-Dialogue; Interpersonal-Dialogue; and Extensive-monologue. The preliminary three steps belong to beginners' learning activities that require drill and practice repeatedly, face to face. Wringe (1989) also points out that children like to repeat things, and they are willing to practice over again. Repetitive and imitative activity remains an important part of primary language teaching and learning but has limited ability to achieve proficiency in transactional or interpersonal dialogue.

Canale & Swain (1980) argue that there are four communicative competences which are: grammatical competence, sociolinguistic competence, strategic competence, and discourse competence. These four competences represent a speaker's overall comprehension and ability to use their target language. Taiwanese-based students of English and Australian-based students of Mandarin have little opportunity to use their target language which leads to a lack of sociolinguistic competence and discourse competence in terms of Canale & Swain's theory.

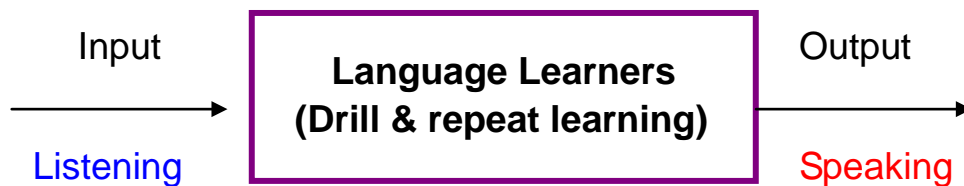
Language theorists agree that listening and speaking skills should be unified as a language process rather than teaching them individually. Lo (2006) finds that the instruction of speaking and listening in Taiwanese language classrooms is still optional, and there is no regulated arrangement of listening-speaking classes in formal school curriculum (Model1, Figure 4). Traditional and current rote learning teaching strategies have limited ability to produce learning outcomes which present students' sociolinguistic knowledge, conversation strategies, and discourse competence, due to a lack of authentic learning environments in the language classroom. Communication is defined as an interactive process of meaning-making through the encoding and decoding of ideas in language (see Model 2, Figure 4, page 25). The interactivity is an essential element to meaningful communication but is scarcely available, other than in inauthentic or stimulatory tasks in the primary language classrooms of Taiwan and Australia.

In order to better achieve the learning outcomes of government curriculum, Taiwanese primary English curriculum can be re-designed to regularly combine listening and speaking comprehension and practice at the same time to promote the ability for

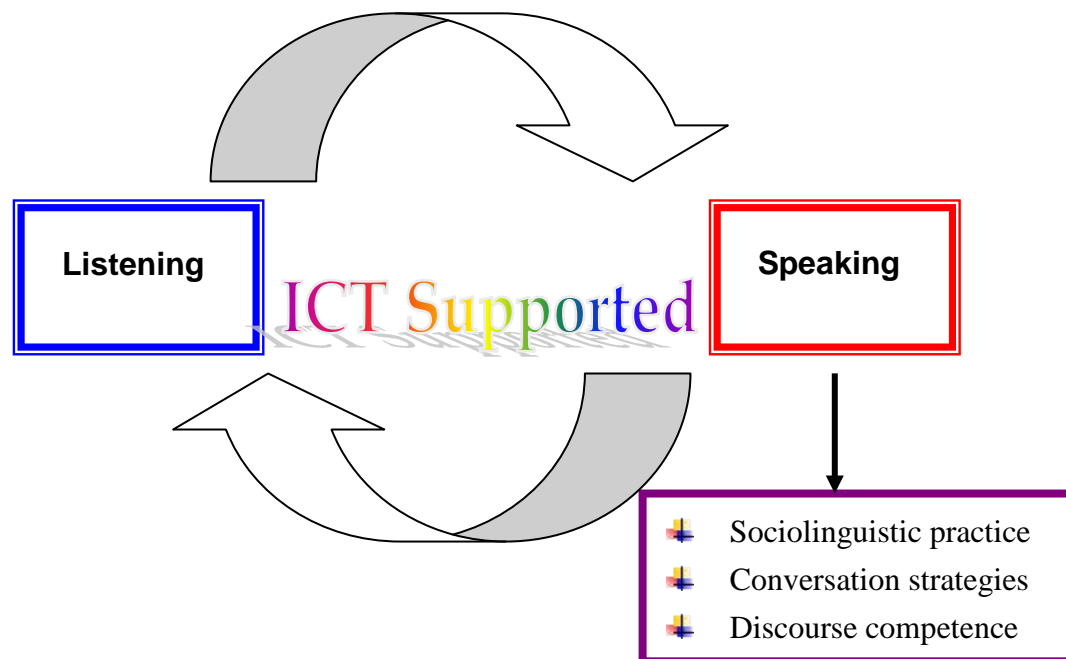
living in English (see Model 2, Figure 4). The ICT supported activity in this project can assist to achieve this outcome.

Figure 4: Combining Listening and Speaking for the Curriculum

Model 1: Traditional Rote Learning



Model 2: ICT Conversation Activity



Delfino & Dettori (2009) claim that ICT supported interactive activity is crucial for *real* communication in language class. Engaging ICT and TBL in their recent language research, they found that ICT produced positive outcomes for students in terms of linguistic skills especially in oral production and listening comprehension (English and French), ICT skills, and the concept of social communication. The researcher will adopt Canale & Swain's theory as criteria to evaluate how well the

ICT activity promotes *real* conversation and produces dramatic language competence including grammatical knowledge, sociolinguistic knowledge, conversation strategies, and discourse competence.

1.7 Research Aims

The aim of this project is to investigate alternative strategies incorporating new technologies so that primary school language students might achieve improved learning outcomes in public and/or private school contexts. The methodology can support new pedagogies to teach pupils a more conversational and authentic English and Mandarin by creatively linking learners across first and second languages. Bley-Vroman (1989) points out that if learners do not have an opportunity to listen or speak in their target language, they will encounter the three common defects being a *lack of success*, *fossilization*, and *indeterminate intuitions* which decreased learners' language confidence. Indeterminate intuitions also known as grammaticality judgments which indicate students learn language from their grammatical and syntax mistakes, and deficient performance. This research seeks to address such failures in the achievement of communicative competence for foreign language learners by providing an innovative technological solution to the critical lack of authentic practice opportunity.

The lack of opportunity for authentic communication for learners inhibits educators or teachers wishing to develop skills-based language learning programs in Therefore, the research aims to develop, implement and evaluate a new methodology combining Teaching of English to Speakers of Other Languages (TESOL) theory, computer technologies for instruction, and inter-cultural communication theory. In order to explore the potential for innovative technology to be integrated into the practice of

second language teaching pedagogy to enhance current teaching theory in support of second language teaching and acquisition five research questions are developed for this project:

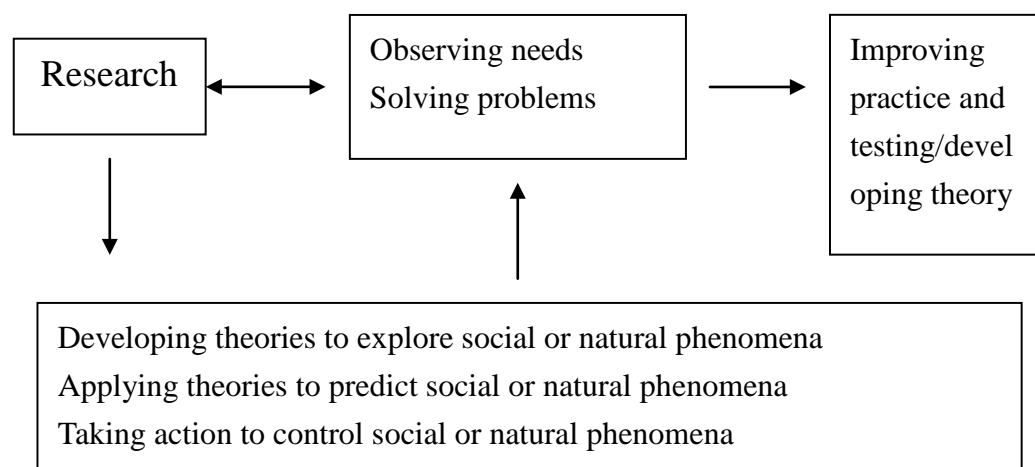
- How does the ICT learning program contribute to language learning outcomes in listening and speaking stated in school curricula for participant learners?
- How does the experience of ICT-enhanced language learning change the attitudes of students, teachers and parents towards foreign language learning?
- How does the ICT learning tool influence the students' language motivation in terms of type and intensity?
- How does ICT supported language learning develop cross cultural knowledge between Taiwanese and Australian learners?
- How do Australian and Taiwanese participants evaluate the program and what are the implications for foreign language teachers and learners?

1.8 Research Methodology

Research is a procedure undertaken through collecting, analyzing, and exploring data systematically to solve problems (Tung 2003). In addition, Tung (2003) identifies three main purposes for research: developing theories; applying theories; and taking action. Figure five illustrates the relationship between theory, action and evaluation common to applied research such as the research undertaken in this project. Research can provide systematical and logical explanations and solutions for social or natural phenomena by application and or testing of theories which process generates new knowledge of the phenomena under study. Theories of second language acquisition and instruction, learner motivation and cross cultural competence are deployed in the design, implementation and evaluation of an innovative language learning tool in this

research in order to solve practical problems experienced by language learners and teachers in foreign language contexts. In this way, applied research continually tests theories through innovations in practice in order to generate solutions to practice that can reflexively inform and further develop theory.

Figure 5: Research Process



Source: Tung (2003)

Adequate research needs to incorporate the following attributes (in Khan 2009, p. 1):

- systematic problem solving which identifies variables and tests relationships between them;
- logical, so procedures can be duplicated or understood by others;
- empirical, so decisions are based on data collected;
- reductive, so it investigates a small sample which can be generalized to a larger population; and
- replicable, so others may test the findings by repeating it.

Such attributes are relevant to all research although qualitative research places less emphasis on generalization than quantitative research as it seeks to emphasise the significance of local context on research outcomes and applicability. Qualitative research is selected as most appropriate to the research questions and research populations of this study as language learning is profoundly context-specific and as the scope of this project allows for small sample engagement and evaluation. An ethnographic approach is adopted for this research. Arthur (2006, p. 140) points out that ethnography is a research process 'in which the ethnographer closely observes, records, and engages in the daily life of another culture and then writes accounts of this culture, emphasising descriptive detail.' As the ICT supported language program in this research could only support a small group of learners, required the close engagement and immersion of the researcher who is also a language teacher, and involved learners from different cultural and linguistic backgrounds, an ethnographic approach was highly suitable. As the number of participants was small and the cross-cultural element of the project was confined to the Australian-Taiwanese community, the ethnography was further framed as a case study. Case studies are highly valuable and popular research approaches in educational contexts as it allows researchers to candidly observe what happened and interacted from students to teachers and students to students in classroom. This provides rich and detailed data for researchers to evaluate and analysis.

In constructing an ethnographic research methodology it was important to develop 'interpretive tools' which could provide a systematic method for generating, collecting and analyzing research data. This project adopts a triangulated research framework involving different participant groups as well as different interpretive research tools including observations, and interviews as well as a language test to assess the effects

of ICT supported language learning between Australian and Taiwanese learners. The researcher also regularly recorded her own experiences and observations of the intervention and related activity in a learning journal of notes which continued for the 12-weeks of the intervention. Further details of the research methodology are given in Chapter Three.

1.9 Structure of the Thesis

Chapter One provides an overview of the research background and problems to second language learning which involves learning Chinese and English in colloquial skills. Chapter Two provides a review of the key literature of second language acquisition and learning, learner motivation and cross cultural competence relevant to the problem of research. Chapter Three provides an explanation and justification of the research methodology designed to explore the impacts of ICT enhanced foreign language learning. Chapter Four provides findings from observations, interviews and tests undertaken to evaluate the outcomes of the ICT intervention. Chapter Five presents a series of conclusions and recommendations for foreign language teachers and learners in relation to speaking and listening competence and effective pedagogy including topics for further research. Chapter Six provides the reflection from the research.

In Chapter One the statement of the thesis is provided in relation to limitations in foreign language learning and competence for Taiwanese-based learners of English and Australian-based learners of Mandarin. This project sought to mitigate the problem of speaking and listening skills achievement by bringing together children of similar age and cognitive capacity in a task based language learning, technologised

environment. This ICT intervention aimed to enhance the school's existing language curricula and extend the speaking and listening, learning motivation and cross cultural understanding of the learners. Language competence, specifically speaking and listening, will be assessed prior to this project, as well as, at the conclusion, to monitor the effectiveness of the program.

In Chapter Two, this section reviews relevant literature to create opportunities from enhanced authentic language learning activities via *real time* Information and Communication Technology for language learners and teachers. The selected literature used in this research is drawn from theories of language teaching related to second language acquisition (hereafter referred to as 'SLA') of English as foreign language (hereafter referred to as 'EFL'), motivation, computer-assisted instruction, collaborative learning, task based learning, and culture exchange (or inter-cultural communication). These six elements build the conceptual framework of the research problem, and provide a trans-disciplinary approach to enhance instruction in language learning in this thesis. The trans-disciplinary approach will be explained later in Chapter Two.

In Chapter Three, the Aim of the Research, the Research Questions and the interpretive research methodology are illustrated in detail. A case study design is developed to investigate this thesis. ICT intervention strategy of second language acquisition will be enhanced by authentic second language communication between culturally, linguistically and geographically distant EFL classrooms supported by Yahoo Messenger technology. In addition, TBL activity, and cross cultural activity will activate students, in particular their speaking and listening skills, also their motivation and attitude towards cultural exchange will be increased.

The results will be provided in Chapter Four from multiple sources of evidence, including observation, interviews, pre and post tests, the researcher's learning journal, and criteria sheets from language teachers are given to analyses and evaluate.

In Chapter Five will include the summary of the rationale, main features, findings, the limitations and contributions of the study as well as the dimension for the future research that have been generated within the study.

Finally, Chapter six will include a reflection on the research assumptions, design and protocols and their development over the course of the research.

Chapter Two: Review of Literature

2.1 Introduction

This research project explores the potential for innovative technology to be integrated into the theory and practice of L2 teaching pedagogy to facilitate second language acquisition for Taiwanese-based learners of English and Australian-based learners of Mandarin. In the previous chapter, the aims of the research and the ICT language learning intervention were illustrated and explained. This chapter reviews relevant literature which explains the problem of limited opportunity for authentic language learning activities for foreign language learners and provides a theoretical rationale for the proposed ICT based solution. The literature reviewed here presents a range of theories relevant to the research, including: the pedagogy of second language acquisition (hereafter referred to as 'SLA') in a foreign language learning environment; learner motivation; computer-assisted instruction; collaborative learning; task based learning (TBL); and cultural exchange (or cross-cultural communication).

As this research is in essence a second language learning and teaching project, SLA theories, which provide the framework for second language teaching, are reviewed. In addition, it is important to explore language learning problems from the perspective of motivation, particularly the lack of intrinsic motivation for learners in EFL communities that characterizes the Taiwanese and Australian learning context in which learners study English (in Taiwan) and Mandarin (in Australia). The third section of this chapter evaluates options for computer-assisted instruction for the language teaching environment. The benefits of collaborative learning for teachers and students in language pedagogy are then investigated. TBL is then discussed,

particularly in terms of how it can be practically integrated into ICT and collaborative learning in language learning syllabi. Finally, the development of cross-cultural understandings through the learning of a foreign language is discussed as another crucial issue for the research project. These six elements constitute the conceptual framework of the research problem, and provide a trans-disciplinary approach to the enhancement of language teaching in Australia and Taiwan.

Nowotny et al. (2001) point out that trans-disciplinary research involves problem-solving through the synergy of diverse theoretical perspectives and practical methodologies. They also outline the concept of the 'agora', which is understood to be a community or platform where the contextualisation of knowledge takes place. The agora broadens the opportunity for inputs into the research problem from both traditional and economic rationalist viewpoints. In other words, the agora provides a forum for testing the research, and it extends the range of possible disciplinary inputs. A good example of this approach is reflected in a study by O'Reilly (2004), which she designed an online assessment for students at the University of Southern Queensland, the University of New England, Charles Sturt University, and Southern Cross University, applying transdisciplinary thinking to educational design to enhance successful learning for students across the disciplinary fields of commerce, management, and engineering. O'Reilly provided online assessment in the academic fields of commerce, management, and engineering for the four universities to identify peak performers and to suggest potential innovations in assessment. Her research demonstrates that transdisciplinary partnerships allow academics from different disciplines to pursue a common purpose in designing assessments online.

In the same way, language teaching pedagogies can consider and deploy various

disciplines, including computer technology, sociological studies of motivation, and cross cultural theory in order to enhance student motivation and interest and create learning experiences that are creative and manageable, as well as effective in promoting communicative competence.

2.2 Second Language Acquisition Theories and Pedagogy

Second language acquisition is the process by which people ‘learn another language in addition to their native language’ (Singhal 2010, p. 1). Krashen (1987) argues that *language acquisition* is unconscious learning, which takes place when attention is focused on meaning rather than language form such as grammar or sentence structure. Krashen defines language acquisition as the process by which people acquire competence in recognizing and employing communicative language. SLA theory is concerned with explaining distinctions between how people learn a second language and how children naturally acquire their native tongue (Lightbown & Spada 1999). In general, therefore, a theory of SLA could include an understanding of what language is, what learning is, what teaching is, and the relevant classroom context.

Krashen (1987) argues that a second language should be acquired as naturally as possible but he also acknowledged that language can be ‘acquired’ in a classroom setting as well as merely ‘learned’. So in Krashen’s model, learners are exposed to samples of the second language, with no conscious attention given to language form, in a similar manner to that in which infants learn their first language. The objectives of Krashen’s approach are to allow learners of a second language to develop the ability to use the language flexibly and naturally in speaking and listening, as they are able to do in their first language.

Krashen has profoundly influenced the theory and teaching of second languages, providing a theory of SLA in five dimensions: the acquisition-learning hypothesis; the natural order hypothesis; the monitor hypothesis; the input hypothesis; and the affective filter hypothesis (Krashen 1987). The acquisition-learning hypothesis distinguishes between the *acquisition* and the *learning* of a second language. *Acquisition* refers to exposure to L2 involving unconscious attention to language form, in the same manner as children learn their L1. *Learning* refers to the conscious process of grammar and vocabulary study. For Krashen, *acquisition*, which requires meaningful immersion in the target language, is not the same thing as, and cannot be achieved by, *learning* of discrete linguistic elements, such as grammatical and syntactic rules. The natural order hypothesis indicates that learners acquire their target language in predictable sequences. It suggests that children learn L2 through a natural sequence which is similar to their L1 learning experience with basic vocabulary preceding complex vocabulary, for example.

The monitor hypothesis states that *learning*, as defined by Krashen, properly serves as a ‘monitor’ to correct what the learners have subconsciously produced in L2. For example, L2 speakers can self-correct by monitoring their own free production of unconsciously learned language, using the learned language *rules* consciously. The input hypothesis identifies listening and reading as basic input elements to the language acquisition process. Krashen claims that the only way in which language acquisition can progress is by means of exposure to comprehensible input which is beyond the learner’s current language capacity (‘i+1’, where i equals the current level of language capacity). Only under these conditions, he argues, do both comprehension and acquisition occur. For example, when children acquire their L1, their carers

address them in simple language using slower speech and plentiful repetition, a speech style known as *Carer's Speech* (Krashen 1987). If children cannot understand, carers will express the meaning in another way. According to Krashen, this situation is the same as in the language classroom; teachers use a similar technique to talk with students to enhance students' language competence. Finally, the affective filter hypothesis refers to factors such as motivation, confidence, and anxiety, which affect how learners can best absorb essential input. If a learner is anxious or bored with learning the target language, he or she may be 'unavailable' to accept the input for acquisition. The influence of Krashen's theory on language teachers, learners, and curricula has remained strong for several decades. Several authors and researchers have elaborated on Krashen's theory and utilised it in their second language learning and pedagogical material (Celce-Murcia 2001, Cook 2008, Allwright & Hanks 2009, Ortega 2009).

These dimensions provide a framework for understanding, how learners approach and achieve their L2 learning. A crucial aspect of these dimensions is language setting or environment. Hedge (2000) argues that the main factors affecting speaking skills include knowledge of vocabulary, spelling, pronunciation, sentence structure, grammatical structure, and linguistic semantics. However, it is difficult for young learners to learn and practice these factors at home, if their parents or family do not know the target language. Furthermore, fluent and accurate speaking is the overall target in communicative language teaching (Brown 2000) and this is more effectively achieved through regular practice with other speakers in diverse conversations. Fluency in speaking requires active and regular communication, so it is nearly impossible for learners who only learn and practice the rules from language classrooms and textbooks to acquire conversational fluency in a second language.

Krashen's theories of acquisition have had a lasting effect on how second languages are taught, particularly in relation to enhancing speaking fluency. However, within the constraints of EFL learning environments, opportunities for learners to be immersed in second language contexts and thereby learn in a context and manner similar to L1 acquisition are critically limited, making 'unconscious' learning unlikely.

2.2.1 Second Language Pedagogy

Throughout most of the twentieth century the traditional grammar-translation method was implemented in foreign language teaching (Thuleen 1996). This method is frequently referred to as the 'classical method', since it was based on the method used to teach dead languages such as Latin and Classical Greek, which aimed to develop students' knowledge of and appreciation for literature rather than communicative competence. Educators used to teach language in their mother tongue and focus on the rules of grammar, vocabulary, and sentence structure in the target language. The main characteristics of this method are learning the rules of grammar and their application in translation, speaking and pronunciation are largely ignored (Chen n.d.).

English teaching methodologies from the 1970's to the present day have continued to develop and change. Community Language Teaching or Counseling-Learning was influential in the early 1970's. Curran (1972) was a key advocate of this approach, arguing teachers should be regarded as language counsellors in order to manage the difficulties for individual students who were to be treated as a 'whole person'. This theory envisages 'counselor-teachers' who work to assist learners develop language knowledge and skills without anxiety. Following this, the 'Silent Way' became a popular language teaching approach in the late 1970's, Gattegno (1972), the main

theorist of this approach, argued that teaching is subordinate to learning and that teachers should assist learners in building their motivation to learn. Total Physical Response / Comprehension Approach was another popular language pedagogy in the 1970's. This methodology involves teachers giving commands in the target language and students responding with actions, without speaking the target language (Asher 1988).

In the late 1970's, Lozanov (1979) proposed the 'Suggestopaedia' approach, in which L2 should be presented at the level of the unconscious in order to stimulate the learner's learning capability and increase learning efficiency. In the early 1980's, the 'Natural Approach' emerged, emphasizing that the inputs of language should be comprehensible to students relative to their age, prior knowledge, or experience (Krashen & Terrell 1983). This way, learners are able to use the target language adequately and meaningfully in their everyday lives.

Since Krashen's influential theories and methods, SL teaching and learning approaches have become diversified. Not surprisingly, over the same period of time, Eclecticism or the Eclectic Approach to second language teaching and learning methodology has become popular and remains a strong element in current teaching methodologies. Eclecticism pragmatically utilizes a range of approaches that are relevant to different students and different study methods or contexts. It emphasises the realisation of student needs and the importance of communication competence in the target language.

The communicative language teaching method has been widely implemented since the 1970's. This method emphasises the functions and purposes of a language, rather

than its internal rules, forms and structures, in different communicative settings (Chen n.d.). Language use is assessed as communicative competence (including grammatical competence, sociolinguistic competence, discourse competence, and strategic competence) that is also culturally appropriate. In the communicative model, appropriate language use generates functional, regulatory, interactive, imaginative, and representative outcomes that are meaningful and appropriate to speakers in a specific context. In order to achieve the goals of communicative language teaching, three teaching methodologies are conventionally deployed: content-based instruction, task-based instruction, and communicative-based instruction (Richards 2005). According to Davies (2003, p. 1) content-based instruction is ‘a teaching method that emphasizes learning *about something* rather than learning *about language*.’ Content-based instruction requires that meaningful teaching content has a positive impact on students’ learning so that weekly or term by term themes, such as hobbies or festivals, are aligned to learner characteristics and interests.

Task-based instruction requires students to achieve a task such as solving a problem or comparing objects through the use of the target language. Shrum & Glisan (2005) argue that task-based teaching pedagogy should be focused on active and cross-skill communication, negotiation of meaning, collaboration, and practice opportunities for language used to achieve specific purposes. Finally, communicative-based instruction emphasizes the significance of the *real* communicative context, such as the food hall for the language of ordering and purchasing, and learning activities such as role-play and free production as important strategies for enhancing learning outcomes. Richards and Rodgers (2001, p. 172) articulate the key principles of communicative language teaching and learning:

- Learners learn a language through using it to communicate;

- Authentic and meaningful communication should be the goal of classroom activities;
- Fluency is an important dimension of communication;
- Communication involves the integration of different language skills; and
- Learning is a process of creative construction and involves trial and error.

These theoretical principles and their practical implications for the development of students' language competence are crucial considerations for the research project. As language is fundamentally a tool for communication rather than body of knowledge for memorization or regurgitation, how to create a communicative teaching environment to allow students to meaningfully engage in L2 learning in the essentially 'inauthentic' environments of the classroom is a continuing challenge for teachers. This challenge is addressed in this research project by incorporating ICT using real time communicative opportunities. It is envisaged that such opportunities can better realize both the conditions of learning and the learning outcomes articulated in communicative language teaching theory for foreign language learners.

2.2.2 Teaching L2 in Taiwan and Australia

Among the range of possible approaches in teaching English, the 'Eclectic Approach' method is selected by the Taiwanese Ministry of Education as the guiding principle of English teaching in primary schools in Taiwan (MOE 2006). Many Taiwanese teachers have adopted and combined relevant theories to support their English teaching at primary schools. However, other teachers are still using traditional means of instruction such as memorisation, vocabulary lists, grammar drills and translation, as well as focusing on listening to audio tapes. Many teach pupils to memorise English

vocabulary, but this vocabulary is often presented to students with a pronunciation that is heavily influenced by the teachers' L1 with Chinese pronunciation (Cheng 2003). Many students are restricted to a passive knowledge of the target language because they dare not express themselves or ask questions in public, thus reducing the interaction between teachers and learners in traditional classes and in the wider community where such opportunities exist. The more correction from the teacher, the less the shy students speak. For Taiwanese EFL learners this is a serious problem, because most students study and practise English only in class. The Taiwanese EFL context means not only that students lack opportunities to hear and use their target language in naturalistic and purposeful communications, but also that, as learners generally share the same first language, they do not have such opportunities in the classroom, as may occur in multicultural communities with learners of diverse first languages. Perhaps for those reasons, Taiwanese English teaching pedagogy has not effectively delivered a communicative model of learning EFL even though the curriculum endorses this method.

Mangubhai et al. (1999) surveyed the communicative teaching pedagogy impacts on primary LOTE (Language Other Than English) teachers, and reported that over two-thirds of language teachers acknowledged the importance and significance of communicative teaching methodologies in their L2 context. The Australian Department of Education and Training (2008, p. 10) promotes teaching strategies and learning outcomes for LOTE that support 'effective communication or interaction with peers in the target language', and requires teachers and learners to 'to seek out as many opportunities as possible to communicate in the target language, both in and out of class time at school', as well as encouraging educators to seek 'ways to use ICT to

communicate creatively to represent new understandings'. This government policy for the teaching of LOTE strongly emphasises actual communication in the target language and reflects the strong influence of the communicative teaching pedagogy in Australian language primary school curriculum.

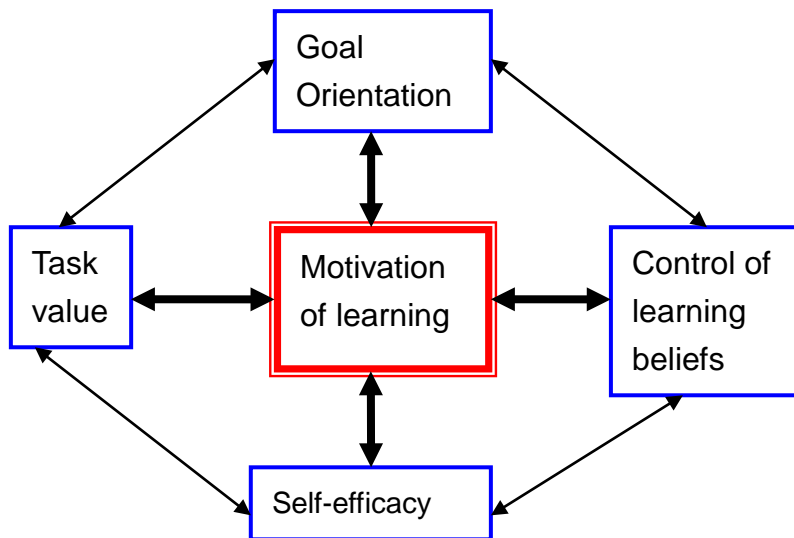
2.3 Motivation for Learning

Working in the field of sociology, Gardner (1985) articulates a dichotomous motivation theory which identifies two distinct learning orientations: instrumental orientation (e.g. higher job security, higher paying job, and passing exams) and integrative orientation (e.g. culture, understanding, and communication). These two learning orientations, however, have limited relevance for EFL learners (Warden & Lin 2000; Shi 2000) and little relevance for young Australian and Taiwanese L2 students. Firstly, whilst primary pupils are frequently learning in order to pass examinations, the emphasis on this as a worthwhile instrumental task is potentially weak, since young students have little consciousness of a future career. Gardner (2005, p. 2) stresses that 'integrative motivation' is characterised by the learner's positive attitudes toward the target language group and the desire to integrate into the target language community'. This is particularly true for young Taiwanese EFL students who may have no specific experience of or notion of a 'target community' and therefore no clear motivation for integration with this 'community'. Whilst learners were expected to have little instrumental or integrative orientation to language learning prior to this research, their participation in the ICT intervention program may change their motivations in terms of recognition of the potential to form friendships and networks across cultures and of enhanced familiarity with another

culture which may assist them visualize and desire their greater integration into the 'other' culture. Analysis of results to this research consider motivational changes evident for learners as reflected in this model and further models.

According to Pintrich & Schunk (1996), there are five factors that affect learning motivation: intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, and self-efficacy for learning (see Figure 6). Intrinsic goal orientation refers to learners' inner requirements for learning such as their interests, challenges, and start-up and target proficiency. Hence, within the intrinsic goal orientation, learning exists for the sake of learning. Alternatively, students' learning is influenced by outside or extrinsic stimulation, such as good grades, rewards and praise, so that learning exists for the sake of factors outside and beyond the learning itself. Task value means that the learner realises the importance, interest value, and effectiveness of a specific learning activity or task. In Pintrich & Schunk's model (1996), learners judge learning results as successful or unsuccessful in relation to their own beliefs concerning personal ability or effort (controlled factors) and chance or opportunity (uncontrolled factors). Finally, self-efficacy, refers to how well learners progress in specific learning programs as a result of their self-awareness, confidence and learning strategies when engaging with specific programs.

Figure 6: Factors of Learning Motivation



Source: Pintrich & Schunk's (1996)

Pintrich & Schunk's Learning Motivation Model (Figure 6) implies that when a person has higher expectations of positive outcomes of learning related to his/her specific task or job, he/she is less likely to abandon their language learning efforts. In addition, the interaction between task value and control of learning beliefs produces efficacy in learning. From this point of view, each factor is relevant and influences other factors. Hence, this theory provides a useful, integrative model for the researcher or teachers to apply in analyzing, and adapting or evaluating teaching and learning methodologies to promote learner motivation.

In an alternative and complementary theory of learning, Wigfield & Eccles (2000) explain motivation using expectancy-value theory, which integrates many previous learning motivation theories. The components of expectancy-value theory that support intrinsic motivation are learner evaluation, perceived ability (present), and expectation for success (future). They advocate an approach in which learners are given a task or

goal or encouraged to set a personal goal for themselves. The learners use various strategies to achieve this goal. 'Perceived ability' refers to the learners' discovery of what they can achieve in pursuing this task or object. 'Expectancy for successes' refers to learners' beliefs regarding the likelihood of achieving their task or object, based on their ambition and perceived ability. Therefore, expectancy-value theory emphasises the importance of learners' cognition. Students' learning behaviour is determined, according to this theory, by the relationship between evaluation, perceived ability, and expectancy for success. In practice, educators could adopt the features of expectancy-value theory to enrich and enhance the language learning interaction between teachers and students in the second language classroom. This model is thus a useful tool for analysis of learning motivation that might inform a change in pedagogy for primary aged Taiwanese-based English learners and Australian-based Chinese learners.

2.3.1 Motivation for Second Language Learning

In the context of second language learning, motivation has been linked with students' attitude towards the culture and the experience of speaking their target language. The more motivation they have, and the more positive their attitudes are, the more learners are willing to pay attention to and invest in their learning activities (Lam et al. 2004). Chen (2002) finds that students who have stronger learning motivation obtain higher scores on their English listening tests. In addition, many researchers regard motivation as one of the key components of a successful second language learning approach (Clement 1980, Gardner 1985, Brown 1994, Dörnyei 2005). Oxford & Shearin (1994) found that motivation affects the depth of learning involved in learning a second language. Likewise, Gardner & Tremblay (1995) found that the achievement of

competence in a second language is positively related to motivation.

2.3.2 Motivation for learning second language in Taiwan and Australia: An Overview

Keller (1983) indicates that interest, relevance, expectancy, and perceived outcome are four key elements of motivation. English teachers try to elicit interest and stimulate learners via teaching activities such as language games, stories, role play, pair/group work, and contests among their learners (Shi & Jiu 1999). Tan's (1998) survey, which investigates Grade 4 and 5 students, shows that students' favourite English learning activities are unconventional learning activities in and outside classrooms (such as games and learning by computer) and activities that demand expressive and linguistic competence (such as role plays). Furthermore, Hsueh (2007) provides evidence that picture book reading instruction can help to enhance students' English learning motivation. Hsueh found that students' responses to picture book reading instruction are very positive in Taiwanese primary schools. Taiwanese English teachers also regularly provide external rewards such as small gifts or stamps to encourage and enhance students' motivation.

Taguchi (2006) investigates the effects of motivation upon Japanese learning for Australian Grade 10 students. His study finds that language teachers can have a greater effect on students' learning outcomes and intrinsic motivation by setting a challenging goal and providing interesting and engaging tasks rather than by offering extrinsic rewards.

Learning English is regarded as EFL in Taiwan, where students can usually use

English only in class, and there is no opportunity for them to use and practise the target language after school or at home. This situation is similar to that of the Australian-based Chinese learners. This scenario is commonly understood to result in low motivation, low intrinsic goal orientation, and low task value in relation to the model developed by Pintrich & Schunk (1996). As Australian and Taiwanese students usually have language lessons only two or three times a week, and because they have little opportunity for authentic practice, progress is often very slow, which also does not assist in developing the motivation to learn further.

In this study, the researcher adopts Pintrich & Schunk's (1996) model to evaluate Australian and Taiwanese primary students' language learning motivation in relation to new communicative opportunities introduced through ICT platforms. Pintrich & Schunk's model shows that willingness to communicate builds motivation related to learners' inner requirements for learning (intrinsic goal orientation). Collaborative learning supported by ICT integration could positively affect students' personal or inner learning beliefs as a consequence of their enjoyment of interactions with native speakers, assisting them to move toward higher expectations and task value and guiding them in improving their efficacy for learning. Therefore, Pintrich & Schunk's (1996) model of learner motivation provides a useful evaluative framework with which to judge the impacts of ICT supported communication in the context of language learning and teaching in Australia and Taiwan.

Taiwanese pupils are frequently engaged in rote learning, assessed by frequent quizzes and tests, with limited opportunities for real language practice and assessment. According to Daly's (2009) research, the examination system is the driving force behind the motivation, expectations, and pedagogies of teachers and students in

Taiwan. Yang (2006) found that 41.12% of students disliked English class because of language tests, and students would prefer alternative means of evaluation. English education in Taiwanese primary schools would benefit if learners were able to have real-time conversations with target language peers about topics of mutual interest conducted to perform real-world tasks. However, it is difficult for English teachers to identify and engage an appropriate foreign group of learners and to create opportunities for students to use the target language in or out of class in order to stimulate and strengthen their learning motivation. For these reasons, the Taiwanese pedagogical norm is a dependence on rote learning and paper-based testing.

2.4 Computer-assisted Instruction

Governments all over the world realise the importance of ICT integrated instruction. Hence, since the 1990s, many have launched ICT into instruction at primary schools (Ngan 2003). Woolgar (2005) notes that the increasingly widespread adoption of electronic learning (hereafter referred to as 'E-learning') and distance teaching has enabled by ICT and created important teaching options as well as challenges for educators. Virtual experiences and globalised connections have positive effects on the learning environment. Practical on-line teaching and learning web sites are not only efficient instruments in a traditional classroom, but also construct a virtual reality that provides enhanced options for students to move into a communicative context freed from restricted options of the conventional classroom.

2.4.1 The opportunities inherent in web-based language learning

Several studies (Makulwsich, 1994; Sloane, 1997; Roblyer and Edwards 2000;

Delfino & Dettori 2009) on online instruction programs have reported positive results for language development, since computers enable learners to gain benefits based upon the instructor's feedback. Target language communication and specific cultural information are within reach through teaching websites such as *e4kids*. Web-based teaching strategies have had a tremendous impact on the ability of students not only to listen to and repeat authentic texts and songs, but also to communicate directly with native speakers.

Furthermore, when students do not understand a meaning or know the pronunciation of a word or phrase, they can use on-line teaching resources such as the *Merriam-Webster* online dictionary, which provides sample utterance in the form of sound files, and the *Internet Thesaurus*. These resources extend learners' language acquisition tools to multimedia learning and provide visual and aural information to support both top-down and bottom-up processing in listening and speaking curricula.

There are several pedagogical criteria for evaluating web sites that are designed for English networking instruction. According to Ciaffaroni (2006), an ideal EFL web site should:

- have a strong initial impact;
- generate affective engagement;
- maximise 'the brain's learning potential';
- contain challenging and varied but comprehensible input;
- enable self-discovery;
- cater to different learning styles; and
- have a clear layout.

Based on these pedagogical criteria, teachers can choose high quality web sites, blogs or instant message options, which can help develop the learners' proficiency in using the target language in a wider range of contexts and formats. The instant messenger interface provides users with rich, real-time audio-visual interaction, capturing non-verbal as well as verbal data including gestures, expressions and objects of the immediate environment. Instant message users share a communicative environment almost as rich as face-to-face interaction and much richer than conventional telephone conversation which does not transmit visual data. This kind of technology allows people to talk and connect to friends across great distance at little or no cost other than the expense of broadband connection and a personal computer or appropriate mobile telephone. Instant message technologies are available in a range of products including *MSN*, *Skype*, and *Yahoo Messenger*. In addition to the capacity to hold interactive, real time conversations with visual data support, these products also allow for typed instant chat, which has the potential to aid language learners to clarify pronunciation and meaning as they are conversing. Instant message technology qualifies against Ciafaronni's criteria, especially in its capacity to generate affective engagement and deliver challenging, varied, and comprehensible input.

Roblyer & Edwards (2000) discuss several benefits of ICT integration in teaching, including:

- the ability to provide improved problem-oriented learning activities;
- the ability to display visual formats that support learning (such as shopping at a virtual supermarket online to practice learned language items and structures); and
- varied learning modes (for example, enabling young learners to engage in a responsive, complex and variable environment which combines learning modes such as reading, listening and speaking in a single activity).

ICT and web-based materials can create a rich and complex learning environment which promotes collaborative learning with peers, learning through exploration, and more authentic assessment methods, so that during a listening test, for example, learners can still have access to visual aids via ICT. The obvious advantages of the Internet include the wide availability of authentic material and teaching resources that can be used in learning activities and assessments, and its use as a tool to keep track of students' progress and to communicate and share resources among teachers, parents and students using services such as Google Docs, Facebook, and Twitter.

ICT instruction options can decrease students' anxiety in class (for example, they do not have to present or speak in their target language in front of groups), save time (students do not have to wait for individual drills and they can practice on their own via ICT), and build confidence through the development of effective Internet skills. Internet instruction should depend on factors related to the learners (Roger 1990) such as their perceptual processes, and individual readiness and experience, and factors related to the feedback itself such as implicitness versus explicitness and constructiveness versus destructiveness. Therefore, the ICT intervention implemented in this project included internet instruction that provided flexible and changeable teaching material. For example, students wrote their own questions for peers drawn from topical material from the syllabus and adapted planned speech as conversation unfolded online. Such flexible and learner-centred activity and material can enhance learner engagement in learning activities at school as well as at home.

Delfino & Dettori (2009) report that ICT tools can enrich educational contexts by providing varied and engaging teaching materials, supporting pedagogical intentions,

and improving learning outcomes in language classrooms. ICT environments can not only enhance the teaching of language skills but also be deployed in the assessment of achievement. Current listening assessment in Taiwan generally requires Taiwanese students to listen to a conversation and to answer several questions based on what they hear. However, this kind of listening test is not authentic and not contextualized for EFL young learners. An authentic conversation test-context should provide rich information for an EFL learner, such as facial expressions, body posture and gestures, so that visual cues support the meanings intended in verbal utterance as is the case in 'natural', face to face communication contexts. An ICT-recorded interactive session can produce such rich communicative data for teachers to review for the assessment of student performance in achieving of learning outcomes, and is employed as part of the assessment process of the ICT intervention in this project via teacher observation of learners and interviews with teachers.

2.4.2 Computer-assisted Instruction in Taiwan: An Overview

E-learning offers students a dynamic, organized, and user-friendly lesson process deploying varied of learning materials and resources in real time in a managed study environment. The wide range of ICT formats and materials promises further 'revolution' for the traditional classroom in the near future, particularly as more remote areas of the world gain access to broadband technology. As a result of progress in Internet technology, children are becoming increasingly familiar with the use of the Internet. According to a 2009 survey of Taiwanese children (Child Welfare League Foundation, ROC 2009), 90% of children (aged from 7 to 14) often surf the Net; 74% of boys like to play on-line games; 42% of girls enjoy blogs and instant messaging to share their feelings with others; 25% have mobile phones and use them to send

parents and friends text messages. The Australian Bureau of Statistics (2010) reports that 79% of Australian children (aged from 5 to 14) often surf the Net; 85% of students use the net for educational activities; 69% of children use it to play online games; 31% of children have their own mobile phone; and 60% of these children used their mobile phone to contact their family and friends in 2009.

These surveys show that both Australian and Taiwanese children live within a technological environment supporting both learning and social activity. Importantly, it is 'necessary to remember that technology has never been the aim but only a tool to build learner-centred environments' (Celentano 2008, p. 2). As teachers are of a technologically different generation to their learners, there exists a challenge for school management and teachers themselves to explore methods of exploiting the technological skills and interests of their learners in creating more effective educational experiences and outcomes that incorporate technological competence. Indeed, the teacher's role and 'authority' change with the introduction of ICT, 'particularly when many students are currently more computer-literate than their lecturers, and where internet, e-mail, public access databases, networking, interactive programs' are commonly available to learners of any age (Bakioglu & Hacifazlioglu 2004, p. 3).

Despite the promise of ICT technology for language learning, Daly (2009) reports that factors including class size, mixed-level classes, a lack of intrinsic motivation, and an examination centred curriculum leads language teachers to continue to use the instructional methods of translation, memorisation, and dictation in Taiwan. According to Lee's (2000) survey, 79% of Taiwanese teachers are confident of their ability in using technology. However, only 19.9% of them would use technology in

their teaching. Chiu & Kao (2008) found that although Taiwanese teachers are interested in ICT integration, they still adopt default traditional methods to teach English despite their ineffectiveness in achieving learning outcomes, particularly in terms of meeting the needs of the new 'digital generation' who use the Internet regularly for a variety of purposes. Professional development and education of language teachers, in-service and pre-service, need to address the integration of technological tools into the language learning context to enhance the capacity and willingness of English language teachers to adopt ICT as a tool to enhance learning outcomes for EFL learners.

There is a need for change at the university level so that graduates of education courses are motivated and equipped to design and deliver the kinds of activities that promote and integrate ICT into their teaching. Hence, academies need to change their pedagogy too. Roblyer (2003) highlights five major benefits of integrating educational technology in teaching: increasing learners' motivation; offering unique instructional capabilities; supporting new instructional approaches; increasing teaching productivity, and developing skills for an information age. Such benefits are significant, but are not currently available to EFL learners or their teachers in Taiwanese primary classrooms. Teacher education programs can be revised to instruct teacher-trainees on ICT options and their potential to enhance learning, and professional development sessions can be provided to schools to enable practicing teachers to adapt their teaching approaches to incorporate ICT options to enhance their learners' engagement, efficacy and outcomes. Chen (2002) found that primary teachers are very willing to integrate ICT into their teaching after receiving ICT training of over 100 hours. Chuang (2002) also found that teachers who were trained to understand and use ICT were able to implement ICT effectively in their language

teaching programs. Thus, ICT-integrated language learning can enhance engagement and achievement of learning outcomes, but Taiwanese teachers require development and support to implement this integrated pedagogy.

2.4.3 Computer-assisted Instruction for Language Learning

The overall objective of this section is to evaluate the relative merits of various Internet strategies to teach English. Web multimedia is culturally and practically useful, as language learners can view video clips, listen to audio sounds, and read text with accompanying pictures to help them comprehend it (Zhao 1997). Multimedia involves a coalescence of text, audio, still images, animation, video, and interactive content. Web multimedia has many advantages for both teachers and students in learning a language, particularly in EFL instruction. For example, teachers can easily prepare their teaching materials using Web multimedia, manage and assess data, and send further tasks or feedback to students. Students can read and review tasks and feedback after school or at home. Pictures, animation, sound clips, movies, slides and tests that are graded instantly are now widely available, with more exciting options to come in the near future for EFL learners.

The utilisation of the Internet in education is becoming more and more common and significant globally. Pachler (1999) notes that the Internet provides many chances for learners to engage in language education. Integrating ICT into EFL teaching promises a 'new age' both for teachers and students. ICT integration brings advantages for English teachers in their professional development, through the availability of digitalized teaching materials, and in motivating and enhancing interactions between students in language class. ICT integration also benefits students by improving their

language skills, strengthening their motivation, and encouraging their confidence and language expression (Chiu 2005; Lo 2006).

Culpepper (2002, p. 8) outlines several uses of Web multimedia integrated into linguistic instruction:

- Assisting educators to find adaptable reading and writing teaching materials and activities for their learners;
- Structuring a student-centred and collaborative learning environment;
- Having positive impact on students' reading and writing, especially upon reading motivation, reading skills, sense of audience, and literacy;
- Utilizing e-mail to enhance learning context, such as increasing the contact among teachers, students, and parents; and
- Increasing the engagement of teachers and students.

Culpepper's study involved an asynchronous, out-of-class, electronic discussion learning environment for EFL. Asynchronous refers to a methodology in which teaching and learning do not occur at the same moment, and learning communication that is not instantaneous. Hodson (1998) discusses the tools for both asynchronous and synchronous educational environments. Asynchronous tools include email, news groups and a browseable document library. Synchronous tools include chat, whiteboards and interactive slide shows, all of which are presented in a multimedia room environment (see Figure 7).

Figure 7 Tools of Asynchrony and Synchrony



Source: Asynchronous Learning Networks (ALN)

It is practical and beneficial to adopt both asynchronous and synchronous tools in language classrooms. For example, language teachers can combine synchronous tools, such as the teacher's speech and writing on the whiteboard in real time in class, with asynchronous tools such as email, blogs, internet community and BBS to follow up by developing students' output competence (writing and speaking) after school. Through exploiting different space and time options with the support of technology, students can learn individually or with groups or peers and can study in a pressure-free environment. This process can consolidate PPP methods (Presentation-Practice-Production) in both synchronous and asynchronous contexts.

2.4.4 Computer-assisted Instruction for Listening and Speaking Skills

Rost (2002) states that listening comprehension is the most fundamental skill of language learning, as practically all children learn to listen before they can speak, not only in their L1, but also in their SLA process, as they attempt to identify what spoken language refers to in terms of their experience or environment. In addition, Brown

(1994) argues that the best way to deliver speaking skills is to practice one on one interaction. This is crucial for L2 learners and should be available to them from an early age, but is difficult to provide without recourse to online connections in an EFL environment.

Sung's (2007) study points out that it is difficult for teachers to integrate speaking and listening into English courses due to the time limitations, testing orientation, and large number of students per class in Taiwan. At present, teachers train students to develop listening skills by playing CDs or songs, and then test them again. Speaking skills are almost exclusively practiced through group-based drill exercises or by answering teachers' questions in inauthentic exercises in class.

Hence, Comey & Stephenson (2001) suggest that language skills could be promoted on the Internet by use of online dialogue courses such as bulletin boards, chat rooms, and group discussion. Lo (2006) lists the benefits of Web-Based listening as follows: firstly, it is much easier for teachers to obtain and prepare supplementary listening materials; secondly, as listening materials become more authentic and more reflective of real-world spoken language, learners engage in their learning more actively; and finally, students can be accommodated at their own pace and proficiency level at a suitable level at any time, both at home and at school. .

Chiu (2005) identifies further advantages of ICT for enhancing speaking ability: students can use websites for in-class programs, and can also review phonetics after class. It can also offer a practice opportunity for learners who are too shy to speak in front of other students. The most important feature for Taiwanese students is that it provides speaking opportunities for learners who rarely have a chance to speak to

foreigners or native speakers in class.

Thus, online learning provides a powerful range of opportunities to develop students' competence, independent learning skills, self-efficacy, creativity, and collaboration (Hase et al. 1998). Lankshear et al. (2000) stress that ICT integration provides teachers and students the chance to work together and to participate in collaborative learning. ICT integration, particularly on-line programs, can contribute to English instruction, and could be widely used in language teaching and learning all over the world where broadband is available.

2.5 Collaborative Learning

Johnson & Johnson (1999) identify five dimensions of collaborative learning: positive interdependence, face-to-face promotive interaction, individual accountability, interpersonal or small-group skills, and group processing. It involves students learning in groups by discussing, helping, and sharing to achieve effective learning outcomes and develop their learning behaviour. Veenman et al. (2002, p. 89) explain Johnson and Johnson's five dimensions as follows:

- Positive interdependence: group members 'really believe they sink or swim together'. It encourages individual students to try to contribute their learning to the group outcome as well as to interact to help each other.
- Face-to-face promotive interaction: this includes cognitive activities and interpersonal interaction while students discuss how to solve problems by deploying existing knowledge in a face to face setting.
- Individual accountability: this factor assures that no students can 'hitchhike' in a group. Students learn together, but they have to perform individually. In

addition, teachers can evaluate and measure the learning outcomes from individual group members.

- Interpersonal or small-group skills: students learn not only academic subject, but also interpersonal or teamwork skills. Teachers should provide lessons promoting teamwork skills such as communication, trust-building, and decision-making to guide students.
- Group processing: after completing, students must be evaluated and analyse their shortcomings in relation to task work or teamwork, and plan how to improve on the next project.

Larsen-Freeman (2000) also points out that collaborative or cooperative learning implies peer learning in groups. In this way, educators teach pupils not only their knowledge, but also social skills so that they can work together effectively.

2.5.1 Collaborative Learning in Taiwan: An Overview

Many Taiwanese researchers have explored collaborative learning in various subjects and its potential to develop improved pedagogies at primary school. A study by Tung (2008) on teaching mathematics found that collaborative learning promotes learning motivation, engagement, and positive attitudes toward learning mathematics for pupils who are willing to share their test-answering skills with each other. In addition, Kuo (2007) probed the effects of cooperative learning on science learning achievement. He discovered that the cooperative learning group performed better than the traditional group in a test for 5th-graders of different genders in a primary school. In the same way, Tseng (2003) found that cooperative learning significantly enhances students' English speaking performance, learning attitudes, and social development, and lowers

anxiety in oral English class. Hence, cooperative learning can be an effective teaching method in a wide range of subjects.

2.5.2 Collaborative Learning in Australia: An Overview

Lonie & Andrews (2009) investigated the relationship between collaborative learning and virtual classroom platforms. They concluded that remote students at the University of Queensland could achieve the same learning outcomes as face-to-face learners through collaborative learning via computer technology. Eklund & Kwan's research (2000, p. 3) reports that most primary teachers (47 of 50) interviewed believe that 'technology had helped their students learn collaboratively.' They found that collaborative Internet projects enhanced not only learning outcomes, but also social interaction in the context of primary school. Chalmers & Nason (2003) provide evidence of success for Grade 4-5 students engaged in learning mathematics via ICT and a collaborative learning environment. Through this integrating program, students develop knowledge through team work. Such studies indicate that technologically supported collaborative programs can enhance the learning experience and learning outcomes for various learners and disciplines and indicate value in exploring the effects of collaborative language learning via technology for young learners in an Australian educational context.

2.5.3 Collaborative Learning Integrated into Language Learning

There are few opportunities for students to interact with teachers or peers in traditional EFL teaching methods in Taiwan. However, learners should practice continually to achieve language proficiency. According to the theory of social

interaction and the Zone of Proximal Development (ZPD) proposed by Vygotsky (1978), children naturally develop their own cognition and lingual expression through social interaction. From this perspective, collaborative learning provides pupils with more opportunities to practice speaking, listening, reading, and writing skills with peers, and allows students to develop social interaction skills through their group learning activities. Krashen (1985) also holds that the learning of a second language or foreign language requires collaboration and interaction. Team learning enriches the language learning environment and enhances learners' language acquisition. In this way, language learning becomes a meaningful and significant activity for students. In addition, Slavin (1995) regards collaborative learning as a strategy to facilitate students' learning motivation and proficiency.

It is crucial for learners to engage in oral practice and interaction with each other when learning in an English environment. However, it is impossible for one teacher with at least 35 students to drill and practice English in class so that each student has adequate opportunity for speaking and listening rehearsal and practice. Well-designed collaborative learning tasks can assist teachers to address this lack of interactive opportunity, which is critical for language development and confidence in using language. Collaborative learning not only stimulates students' interest, but also provides the interaction in English necessary for second language proficiency (Lantolf 2000) and can overcome the challenge of large numbers of students in classes which is characteristic of Taiwanese language classrooms.

2.5.4 Computer-assisted Instruction Integrates into Web-based Collaborative Learning

Duin (1984, p. 1) found that collaborative learning, in comparison to competitive or individualistic learning, provides the following benefits:

- greater achievement;
- more positive attitudes towards school, subject areas, and teachers;
- more positive attitudes towards fellow students, regardless of ability, ethnic background, or handicaps; and
- more effective interpersonal skills

Therefore, collaborative learning methods can stimulate and deepen students' thinking, facilitate their understanding, and increase their involvement and interest in class. Gunawardena et al. (2001) argue that the collaborative learning environment can assist students in sustaining each other in learning and that online learning can expand interaction and collaboration between learners. The collaborative features of the Internet are independent of time and space, removing a significant barrier for group project work. For some students, their peers' responses may provide added incentive for them to study, since they have a strong sense of the need to participate.

Similarly, Lankshear et al (2000) propose that the Internet could encourage teachers and students to work together and to take part in collaboration. A significant strength of online language learning is that it improves the feedback relationship between teachers and students. By using online support, the classroom can gradually move to a more student-centred and peer-learning model of language teaching. Chapelle (2001) also points out that students' autonomous language learning can be widely available

through the web rather than being tied to a particular class. Using the Internet, students can interact with learners from all over the world, and they can communicate with each other for language learning at their own convenience.

2.6 Task Based Learning (TBL)

Foster (1999, p. 69) defines Task-based learning (TBL) as ‘giving learners tasks to transact, rather than items to learn which provides an environment that best promotes the natural language learning process.’ In TBL, a task is an activity designed and mentioned by teachers to enhance students’ learning outcomes (Prabhu 1987). Tasks are designed and organised by teachers to help learners focus on language ‘acquisition and extension comprehension of knowledge as well as practice’ (Bennett & Desforges 1988, pp. 221-234). Accordingly, TBL involves free practice or classroom activities where students make use of the target language in a more authentic way to complete a specific task (Crookes & Gass 1993). Thus, TBL provides a student-centred, authentic, and learning-by-doing context for students to practice what they have learnt. Nunan (2004, p. 10) notes the relationship between communicative language teaching and task-based learning, as TBL practices the theory of communicative teaching ‘at the levels of syllabus design and methodology.’ This means that TBL aims to enable students to engage in collaboration and communication naturally (Bruton 2002). TBL can engage learners in collaboration and communication involving social relationships and language learning. However, Tsai (2006) argues that a limitation to TBL is that it may be difficult for teachers to design adequate tasks for a whole class and to ignore the correction of language such as vocabulary, tone, and syntax.

In the language classroom, the TBL methodology is typically structured according to a framework described by Willis (1996). In this framework, each task involves three stages: pre-task, task cycle, and language focus. The pre-task stage involves explaining the topic and task to the students, and preparing them for the task with useful words and phrases. This forms the foundation of the following stage, the task cycle, in which students complete the task, plan a report on their task, and then deliver the report, usually orally. This stage begins with a highly learner-centred stage, in which students are encouraged to speak freely and naturally, without correction; during the planning stage, however, the teacher's input is often sought in order to increase the grammatical and lexical accuracy of the report. This stage, in turn, provides the foundation for the analysis and practice stage, in which useful language used during the task cycle is analysed and practised (see Figure 8, p. 69).

2.6.1 Task Based Learning in Taiwan: An overview

Wu (2003) reports that TBL theory helps students collaborate with their teacher and peers, enhancing both social relationships and English competence. Tsai's (2006) research shows that the experimental group made significant improvements in their score on English vocabulary achievement after the study introducing TBL. This has the potential to address a problem known in Taiwan as the 'twin peaks problem', which refers to a tendency for Taiwanese students to belong to one of two distinct groups: those whose families can afford the expense of English cram schools and who thus tend to achieve high English grades, and those who cannot attend cram schools because of financial restrictions and thus tend to receive low English grades. TBL allows higher competency students who have benefited from cram school language instruction to assist peers with no such opportunity. Although many studies show

positive outcomes for language learners using TBL, TBL is not yet prevalent in Taiwanese English classrooms or implemented language curricula at present. TBL instruction assists language teachers to devise and arrange activities to elicit purposeful language use supporting speaking and listening learning outcomes, and assists students to practice and produce their target language in an authentic context. Therefore, TBL knowledge and theories should be introduced to teachers at the university level in Taiwan so that they can incorporate strategies to mitigate the challenges of the large-class, mono-cultural foreign language learning environment.

2.6.2 Task Based Learning in Australia: An overview

As a result of the small number of reported studies about Australian TBL for young learners, relevant information is limited. Nevertheless, available research suggests positive outcomes as a result of the use of TBL in the Australian context. Woo et al. (2007) implemented TBL through Web-based learning for adult students at the University of Wollongong. Participant students completed collaborative tasks and became more confident as a result of engaging in authentic activities. Students were able to learn not only problem-solving skills, but also teamwork, social skills, and negotiation after completing task activity. In an ACER (Australian Council for Educational research) project, Anderson & Meiers (2001) found out that TBL features enhance teaching methodology and students' learning strategies in an Australian primary curriculum. After completing literacy and numeracy tasks within the TBL methodology, students noted positive results in the learning journals that they kept during the project.

2.6.3 Task Based Learning Integrated into Language Learning

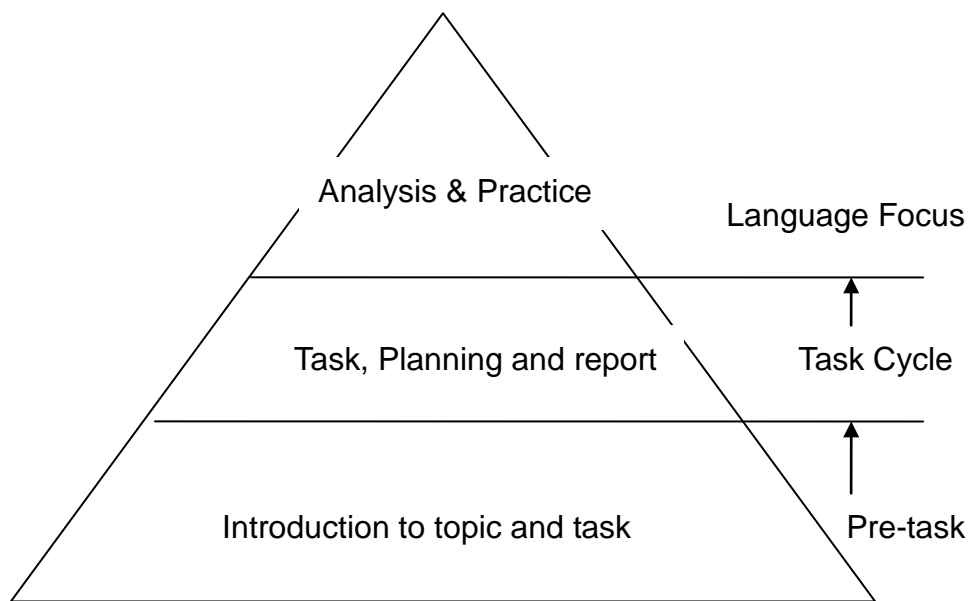
Ellis (2003, p. 16) explains that TBL in the language classroom ‘is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world.’ This teaching methodology allows learners to use the target language in an authentic environment and supports a natural approach to language acquisition. Te (2004) argues the traditional PPP (Present, Practice, and Produce) method alone cannot ensure learners are able to produce target language, as students can complete many tasks without using their target language or producing the language naturally and adequately to achieve some purpose. Te (2004, p. 1) identifies six advantages of TBL for language teaching methodology:

- Unlike a PPP approach, the students are free of language control;
- A natural context is developed from the students' experiences with the language that is personalised and relevant to them;
- The students will have a much more varied exposure to language with TBL;
- The language explored arises from the students' needs;
- It is a strong communicative approach where students spend a lot of time communicating; and
- It is enjoyable and motivating.

Accordingly, students can be exposed to a rich but comprehensible input of real language skills in use by deploying TBL in language classrooms. The TBL framework also supports enhanced motivation (i.e. to process and use the language skills) and instruction (i.e. to focus on doing things) in a whole language environment (Willis 1996). Tasks should involve the use of communicative language and real world issues rather than grammatical form. Therefore, this research project adopts TBL as a

pedagogical strategy (see Figure 3) supporting collaborative language learning with a small group via instant messaging technology.

Figure 8: Framework of TBL



Source: Willis (1996)

2.6.4 Task Based Learning Integrated into the ICT intervention

TBL can be usefully integrated into ICT activity in the language classroom because ICT environments can extend learner options in the performance of complex TBL tasks. TBL is more effective and efficient than the traditional rote learning, and is perceived to be a more relevant and meaningful integration of traditional resources such as textbooks (Yeh 2006). It enables students to explore a wider range of different communicative language skills to deal with the target problem set by teachers in collaborative learning. Hohlfeld (2010) found that the integration of TBL into an ICT learning project that linked students, parents, and teachers constructed a positive

learning environment.

In this project, the researcher designed and implemented an online exchange program incorporating TBL in order to bring together children of similar age and cognitive capacity in TBL activities that would enhance the schools' existing language curricula, extend speaking and listening skills, and stimulate the motivation of students for language learning and cross-cultural understanding. By integrating TBL projects into the curriculum with resources provided by the researcher related to topics that were relevant to each culture, students were able to expand their knowledge and skills by working on tasks, comparing experiences, and sharing cultural perspectives while practicing the target language. For example, one topic focused on learning about cultural celebrations/festivals, such as Easter and Chinese New Year, where students were required to question each other and learn collaboratively about each others' cultural traditions as an extension to the study of this topic in the curriculum. The incorporation of existing classroom objectives, learning outcomes and core topics in the design of TBL projects enables ICT-supported language practice to contribute to improved performance and motivation for participant students in relation to their respective school curricula.

Makulowich (1994) provides guidelines on how to teach and use the Internet, such as introducing generalisation on the Internet, combining objectives with the students' interests, and promoting 'interactive brainstorm[s]'. Accordingly, this project provided curriculum-related topics for TBL in weekly sessions such as eating, hobbies and families. Learners are initially instructed in their target language in preparation for online sessions by teachers and can find interesting and relevant data from the Internet related to the topic on their own. They then design questions to ask their learner-peers

in Taiwan, who have researched the topic in relation to their peer learners' culture. Learners then exchange their information by instant message with their peer learners in their target language. Hence, learners use their target language in an authentic exercise by exchanging and sharing their information with foreign partners naturally in a real-time environment in order to extend their understanding of curriculum topics. Later, learners can report what they have learned of the peer culture to the whole class as a completion of the TBL exercise.

2.7 Culture Exchange (inter-cultural communication)

Alptekin (1993, p. 139) argues that 'language and culture are inextricably tied together, and ... it is impossible to teach a foreign language without its culture base.' From this point of view, cultural instruction needs to be integrated into language teaching by both Australian and Taiwanese teachers.

2.7.1 Culture exchange in Taiwan: An Overview

Teaching and learning a target language should also involve learning about the target culture. Australian Government's Quality Teacher Programme (2007, p. 5) states that it is crucial to assess intercultural language learning against the following criteria:

- it is developed through experience of interaction in a range of variable contexts;
- students need to learn to manage this variability and managing the variability is integral to the understanding that is to be elicited in assessment; and
- it involves not only seeking to draw out students' understanding of intercultural language experiences as observers of others' participation in interaction, but, most

importantly, drawing out understandings of themselves as participants in intercultural interactions, that is, how students understand the distinctive social and cultural context of each communicative performance.

It is difficult, although not impossible, for Taiwanese teachers to develop cultural learning activities that meaningfully connect Taiwanese students to English speaking cultures such as Australia, particularly when they deploy ICTs. However, the capacity develops these connections across ‘variable’ contexts and assesses intercultural learning as well as language learning is limited in the largely mono-cultural, EFL environment of Taiwan. Lin (2002) explores the effects of communicative language teaching on English and cultural learning for children in the sixth grade in a Taiwanese primary school. Lin’s (2002) study finds that different teaching approaches do not appear to change a child’s beliefs and preferences regarding specific foreign culture festivals. Although the teaching method does not appear to effect children’s beliefs and preferences about cultural difference, it remains an important part of language teaching across methodologies as it is critically integrated with successful language learning. In addition, communicative language teaching shows significant effects on the students’ understanding of aspects of Chinese and American festivals such as customs and eating habits in festivals. For example, Taiwanese students might realise that Americans prepare corn and turkey to celebrate Thanksgiving because Native Americans taught the first European settlers to plant corn and raise turkeys to survive in their new environment.

Chau (2001) found that EFL teachers who are interested in teaching their students about the target culture can easily integrate culture-specific lessons into their classrooms, without the need for extra lessons. This is a critical point, as cultural

instruction significantly facilitates language learning; in other words, it is necessary to include target culture teaching in EFL classrooms to develop learners' language proficiency regardless of teaching method (Ho 2009; Li 2006; Thanasoulas 2001). Taiwan is a relatively mono-cultural community due to its immigration policy, which has been found to restrict Taiwanese economic development, cultural diversity, and human mobility (Tseng 2005). Taiwanese foreign language learners are therefore able to learn about other cultures through language learning, which may partly address their limited exposure to cultural difference in everyday life. Po-king (2004, p. 6) stresses that 'language is the tool to enter cultures.' If people can learn about a different, target culture through learning the target language, they can develop knowledge and skills supporting understanding, tolerance, and appreciation. From this viewpoint, learning English could be a bridge toward multi-cultural awareness and sensitivity for Taiwanese students. For this reason, Chuang (2002) recommends that EFL teaching strategies should be designed to allow cross-cultural teaching and learning to enhance students' awareness, knowledge and capacity for cultural exchange beyond schooling.

2.7.2 Culture exchange in Australia: An Overview

Unlike Taiwanese children, Australian children experience a multi-cultural environment in their daily life due to a very different social history and immigration policy. As a relatively young country colonized in 1788, Australia has relied on immigration to build a larger population and workforce. Although the White Australia Policy restricted the diversity of Australian immigrants for some decades, it was dismantled in 1970, and since then, Australia has welcomed immigrants from all areas of the world. Today, the percentage of Australians born overseas or with one or more

parents born overseas is 5.5 million, representing over 26% of the total population (ABS 2010). The percentage of Australians who speak a language other than English at home is currently 3.1 million people, representing 16% of the population (ABS 2006). The Australian community is a rich blend of culturally and linguistically diverse peoples, but the dominant language remains English and relatively few Australian-born people study a language other than English (Camilleri 2011). Although Australian learners of Mandarin have the advantage of living in a more culturally diverse general community, they still have little opportunity for target language practice and may also not have well-developed cross cultural understanding of the target culture. Both cohorts of learners in this study could benefit from culturally-themed language learning to extend the cross-cultural understandings between Taiwanese and Australian culture.

The importance of training in the four skills of listening, speaking, reading, and writing has been greatly emphasised in the language classroom. Kramsch (1991) regards cultural instruction as the fifth dimension of language teaching, accompanying these four widely accepted skills. In addition, Jin and Cortazzi's (1998) research found that intercultural communication competence not only enables students to communicate appropriately in intercultural contexts, but also further enhances their understanding of communication patterns, expectations, and their interpretation of others. Nevertheless, culture has been treated largely as an addendum to language teaching or to provide relief from the routine in the language classroom (Chau 2001).

After much discussion and debate, the consensus in the foreign language learning and social science fields seems to be that language and culture are inseparable (Brown 1994). It is suggested by many methodologists that in the ideal foreign language class,

cross-cultural instruction is an integral and organised component of the course content. For such reasons, cultural themes drawn from the learners' regular curriculum were selected for topics of this ICT intervention program. The researcher designed preparatory exercises related to cross-cultural sensitivity in the program, and requested language teachers to evaluate learner development in this skill area and record the results on the students' performance sheets after the exchange project.

2.7.4 Review

English is now increasingly indigenised and produces local varieties in English Second Language (ESL) areas such as Singaporean English (Singlish) and Malaysian English (Manglish). This phenomenon reflects how deeply English is embedded in Singaporean and Malaysian local culture and language. McKay (2002, p. 118) argues that 'educators today need to recognize the use of English as a global language, in which English is used for wide variety of cross-cultural communicative purpose.' In particular, English is now spoken as a second language by a very large proportion of the world's population (Crystal 2003) and is frequently used to communicate across cultures with no native speakers of English involved in the communications. For such reasons, Taiwanese language learners can benefit dramatically from improved instructional techniques in English language learning, particularly in relation to conversational competence. Such competence can extend their capacity to communicate with people of diverse first languages in the global language of English.

In summary, the literature about SLA, motivation, ICT, collaborative learning, TBL, and cross-cultural awareness constitute the framework of the research. This research project aims to develop a practical teaching pedagogy for second language teaching

methodology through ICT integration. In order to achieve this goal, the research seeks to explore the effect of ICT intervention on language teaching and learning and on perceptions cultural difference. The next chapter of this thesis elaborates on the research methodologies used to approach this task.

Chapter Three: Research Methodology

An ethnographic research approach was adopted in this study, as it allowed the researcher to explore the complex interactions of language learners, teachers, teaching materials and approaches, and language assessment in culturally different, naturalistic settings. As the research involved the assessment of an innovation, namely the introduction of ICT, this ethnographic study was framed as a case study in order to explore language learning experience before and after the intervention and thereby evaluate the benefits of the ICT language learning activity for a specific group of participants. This chapter explains the research theory and method adopted for this study and then describes the research process and data collection instruments.

3.1 The Aim of the Research

The aim of the research project was to design, implement, and investigate a technologised, real time language learning model for Taiwanese-based English learners and Australian-based Mandarin learners. For the researcher, a Taiwanese English language teacher, the limited opportunity for conversational skills development for Taiwanese students of English has been a long-term professional concern; this concern informs the design of this research project, which is primarily focused on the learning outcomes of the Taiwanese student cohort. It was hypothesised that learning outcomes for Taiwanese primary school students, in particular speaking and listening skills, as well as their motivation and attitude towards cultural exchange, may be enhanced by authentic second language communication between culturally, linguistically, and geographically distant second-language classrooms supported by Yahoo Messenger technology. This

research project explored issues for trans-national and cross-linguistic language learners in Australia and Taiwan arising from the use of ICT. In particular, the impact of the changed context of instruction - that is, the inclusion of Australian peers and the use of computer technology – on Taiwanese primary-aged language learners was examined through a variety of research methods including a language proficiency test, a learning journal kept by the researcher, interviews with teachers and parents and observations of learners.

3.2 The Research Questions

There are five main Research Questions and a number of sub-questions.

Research Question 1: How will the use of an innovative technological learning tool (ICT: Yahoo Messenger) influence students' speaking and listening skills in the target language?

- 1.1 Will the ICT intervention in language class assist students to improve their language skills, particularly in speaking and listening? How?
- 1.2 What factors may impact on students' communication with their foreign peers via computer?
- 1.3 Will the results of pre-test and post-test demonstrate gains in language proficiency and deliver the expected outcomes for the research?

Research Question 2: How will the use of ICT technology for cross-cultural exchange affect learners' attitudes to language learning?

- 2.1 What are the current attitudes of young learners towards their language learning?

2.2 Will students change their attitudes towards learning language after experiencing the new learning platform?

Research Question 3: Will the use of the ICT learning tool influence students' language-learning motivation in terms of type and intensity?

3.1 To what extent do students learn a second language for personal and intrinsic reasons?

3.2 What are students' perceptions of ICT integration into the language classroom?

3.3 How will this project impact on students' motivation for language learning?

3.4 Will students or teachers participating in this project continue to seek and engage in online language practice opportunities?

Research Question 4: How will Taiwanese students learn about language and cultural difference from Australian students when using ICT?

4.1 What are Taiwanese students' perceptions of Australian culture? How will these perceptions change and develop as a result of their intercultural interactions?

4.2 Will this language program bring new cultural understanding to Taiwanese students? How do students develop a new understanding about culture?

4.3 What intercultural communication challenges will be encountered during this learning collaboration? How can these be managed and resolved?

Research Question 5: How will Taiwanese teachers and parents feel about their students'/children's participation in the research project?

5.1 How will the language teachers evaluate this project?

5.2 What main outcomes will teachers experience or observe during the research?

5.2 Do parents find their child's language learning has changed as a result of participating in the ICT language intervention?

5.3 What are teachers' and parents' views in relation to incorporating ICT-facilitated trans-national language learning into ongoing language classes?

3.3 Qualitative versus Quantitative Research Methods

Since the 1970s, social-science research methodology, including research into language learning, has changed to embrace a wider repertoire of quantitative and qualitative methods, frequently in combination (Chaudron 1988; Johnson 1992). It is useful to incorporate qualitative and quantitative research methods in educational enquiry so that the learning experience of groups and individuals can be understood in-depth and from multiple perspectives. Significant differences between qualitative and quantitative approaches include their representations of data, the testing of hypotheses, the role of the researcher, and the significance of research context (Wang 2006). As this research seeks to investigate language learning issues for a small group of learners and their teachers, a qualitative approach is selected in order to account for the impacts of a learning intervention in rich detail from the perspectives of those involved in the experience. This qualitative research project is thus framed as a case study deploying an ethnographic methodology.

The purpose of this research project is to generate results with direct practical application, so it can be classified as applied research rather than basic research. Applied research conducts to solve specific problems which used to develop new products and technology. Graham (2008) explains that basic research aims to expand knowledge and acquire knowledge for the sake of knowledge. In contrast, the purpose of applied research is to create, test, or invent something in order to solve practical problems in the real world. Obviously, basic research establishes the foundation for applied research that comes next. In other words, basic research provides theories and methodologies to construct applied research. Applied research also adopts pure or basic theories and methodologies to frame and make sense of investigations into 'real' world issues. It is directed primarily towards a specific practical aim or objective, and is focused on real-world scenarios and naturally occurring groups of participants. Adopting applied research in an educational research project can contribute to the reform of curriculum and teaching methodologies, examine and solve theoretical pedagogic problems, and advance the application and awareness of research for a specific group of teachers.

This research of an educational ICT intervention is intended to empower teachers and learners in terms of broadening teaching and learning processes and pedagogies and stimulating learning motivation (Trucano 2005). According to the Australian Capital Territory (ACT) Government, applying ICT to language learning can support movement from a teacher-dominated to a student-centred language class, and this is crucial for language learners, particularly in relation to understanding the communications of others (ACT Government 2010). If there is no opportunity for students to practice using the language they have learnt, it is impossible for them to develop conversational communication skills and their speaking and listening remains

a passive and paper-based knowledge of language. It is imperative to this research that the application of an ICT intervention is evaluated in terms of the language learning advantages derived by participants so that decisions about further applications of such interventions in other educational settings can be usefully informed by this project. As the intervention takes place over a limited time period and involves two specific trans-national learner populations, the project is usefully framed as a case study.

3.3.1 Qualitative Research in relation to this study

Qualitative research approaches have enriched the range of available options for conducting meaningful L2 studies, for more adequately investigating teacher, student, and computer interactions, and for improving the validity of studies (Johnson 1992). Silverman (2006, p. 290) states that validity can be achieved in qualitative research by:

- Comparing different kinds of data and different methods to see whether they corroborate one another. This form of comparison, called *triangulation*, derives from navigation, where different bearings give the correct position of an object.
- Taking one's findings back to the subjects being studied. Where these people verify one's findings, it is argued, one can be more confident of their validity. This method is known as *respondent validation*.

Although the pre-test and post-test exercise incorporated in this research reflects a more conventional quantitative approach to measuring language proficiency gains, this is only one aspect of a much richer research approach that builds reliability and validity by collecting data from multiple sources at varied occasions over the time

period of the intervention.

Qualitative research seeks to generate descriptive data through an investigation of people's experiences focusing on their communications and behaviour (Huang 1997). Therefore, qualitative research is frequently concerned with collecting in-depth data through interviewing, observation, or document review. Qualitative approaches also recognise the impact *of* the researcher and the impact *on* the researcher of the researched topic and participant groups. The qualitative researcher is not deemed to be an objectified and neutral 'other' in relation to the changes underway and under investigation in this project. The engagement of the researcher in this project is both as a language teacher and researcher and therefore the role of participant observer common to ethnography and other qualitative approaches is most appropriate for this study.

The purpose of educational research is primarily to illustrate, explore, and develop the phenomena of education. For Wiersma (1991), the two main aims of educational research are the expansion of knowledge and the solving of problems; Gay (1992) defines educational research as a process that adopts formal, systematic, and scientific methods in exploring educational problems. Educational research should be a process that embraces scientific methods and attitudes in order to systematically collect data that deals with and explains practical problems in specific educational contexts. Although some educational research is driven by curiosity about educational phenomena or activities, other educational research focuses more on the need for practical solutions to problems. This educational research emphasises the relevance between educational theories and practice. In other words, this research project seeks to test and develop theories associated with second language learning by means of a

study of practical solutions and their outcomes for a specific group of teachers, parents, and students.

3.3.2 Case Study

The case study approach commonly deploys a range of research activities to establish the effects of an intervention or change on a specific community (Punch 2005) and is therefore a suitable research framework for this study. Case studies are frequently used to frame a 'before and after' study of the impact of some kind of change (Lin 1999). Gall (1996) explains that case study involves a research process which studies participants in a natural context to explore the significance of specific issues. Lin (1999) describes the case study research approach as:

- focusing on a specific issue or situation;
- researching an individual case deeply;
- researching the phenomenon in the natural context; and
- researching from the viewpoint of participants.

Referring to points 2 and 3, *depth* is achieved through the duration of the research project, the range of participant types, and the range of data gathering methods; and *natural context* in this research is achieved by engaging in real language classrooms and collating and analysing data from this environment.

Ye (2001) defines the features of the case study as a group focus, an analytical, science-oriented orientation, and a wide range of data-collection techniques. This research project has a group focus in that it focuses on those students, teachers, and parents who had direct or indirect engagement with the new ICT language pedagogy.

In order to generate data of adequate breadth and depth to evaluate the new ICT-enhanced pedagogy, the teaching and learning trial was spread over a complete term of study and multiple tools for data collection were deployed including participant observations, interviews, and pre- and post-tests of language proficiency.

As the case study is a research approach used across many disciplines, it has come to ‘mean different things to different people’ (Coombes 2001, p. 43) and may incorporate qualitative as well as quantitative research methods depending on the characteristics of the individual case, the objectives of the research, the number of participants and their accessibility and so on. As this research involved studying the impacts of a change to pedagogy in a specific context in which the researcher is immersed as a practitioner, it would be unnatural to exclude the researcher, who had a dual role as language teacher, from the learning experiences and outcomes under investigation in the real world, naturalistic classroom context. Therefore, this research project suggested an ethnographic approach, which frequently incorporates the researcher as a legitimate participant in the event or activity under examination in its natural context. In the role of ‘participant observer’, the researcher is able to ‘experience and discover the priorities and concerns of the group studied’ (Coombes 2001, p. 42). For these reasons, an ethnographic case study was selected as an appropriate approach to this research.

3.3.3 Ethnographic Approach

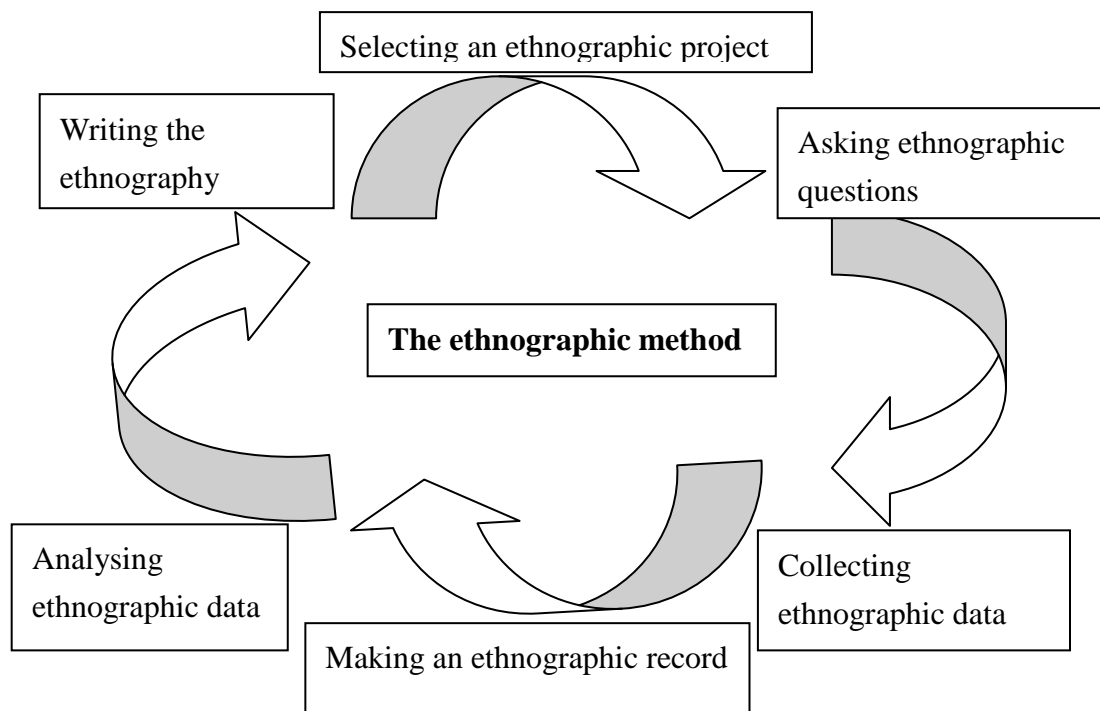
The ethnographic approach is a social science research method which derives from the field of anthropology (Arthur 2006). It is particularly suited to understanding processes within a specific cultural context, as Punch (2005, p. 154) notes:

“...the critical dimension of ethnography involves attention to the cultural context, and it is an excellent way of gaining insight into a culture or a social process, particularly those in complex behavioural settings, and particularly those involving other cultures and subcultures, including those of organizations and institutions.”

In an ethnographic study, “...the ethnographer becomes immersed in the culture as an active participant and records extensive field notes” Trochim (2001, p. 159). An ethnographic approach allowed the researcher in this study to explore students’ language and cultural learning more specifically in depth and in context. As the researcher was a language teacher to some of the learner participants and a colleague of the other teachers involved, she was inevitably part of the research process and affected the process and outcomes of the research activity. For this reason, the researcher is positioned as a participant observer so that the understandings and experiences of the researcher, captured through a reflective learning journal and reported as a part of research results, are included in a consideration of the effects of research activity.

Spardley (1980) identifies six important steps in conducting ethnography: selecting an ethnographic project, asking ethnographic questions, collecting ethnographic data, making an ethnographic record, analysing ethnographic data, and writing the ethnography. The interrelated nature of these steps is depicted as a cycle in Figure 9.

Figure 9: A Cycle of Ethnography



Source: Spradley 1980

- **Selecting an ethnographic project:** the first step in the research, where the researcher should consider the objectives of the research, the key issues, the participants and the scope in deciding whether ethnography is suitable to the purpose. In this research project, the small numbers of participants, the professional immersion of the researcher and the naturalistic context of the classroom learning environment supported an ethnographic design.
- **Asking ethnographic questions:** the ethnographic method is suitable for formulating questions regarding naturalistic behavioural phenomena. Ethnography seeks to describe in rich detail the components of any problem from the perspective of those people who are actively involved in the activity and meaning-making associated with the activity. The researcher must develop questions which elicit three aspects of activity: what people do (cultural behaviour), what people know (cultural

knowledge), and the things people make or use (cultural artefacts).

- Collecting ethnographic data: The third step is selecting research tools, usually in depth interviews and observations, as these research tools can generate rich and contextualized data to assist understand the complex language teaching and learning process and the effects of a change in teaching methods. Semi-structured interviews, a flexible interview technique using a framework of a few critical questions for the interviewees that allows the interviewee to contribute wider information in the interview as they deem relevant, were selected for this research project (Coombes 2001).
- Making an ethnographic record: The ethnographic method includes taking notes, photos, recording, and studying artefacts of the research setting and making maps or diagrams so as to build a complete understanding of the activity in its naturalistic context. The researcher collected video-recordings of ICT supported lessons in order to allow careful observation of learners as they engaged with the new technologised learning resource and with each other.
- Analysing ethnographic data: In analysing data, the researcher reviews the data to identify significant messages and organizes the reporting of these messages in a manner that meaningfully groups commentary around the key themes which emerge from the data. In this study, test outcomes, interview transcripts, observations, and a learning journal constituted the body of data analysed to identify key themes. The observations were assessed and reported as part of the researcher's learning journal, which was written up at the end of each lesson. The journal also included notes and photos taken by both groups of distant students via computer.

- Writing the ethnography: Writing the ethnography is the final stage of the research. A summary of the research findings in an ethnographic study will frequently produce more questions and suggest further research.

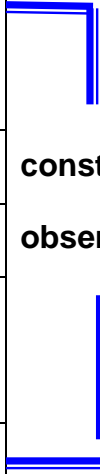
Accordingly, the process of ethnography is not a linear step by step activity; on the contrary, the procedure is more like a dialectic cycle. Elements of the research methodology may be altered in the light of emerging analyses. For example, the researcher noticed significant shyness on the part of Taiwanese students compared to the Australian students during the first few ICT language sessions. This unexpected early outcome prompted the researcher to intervene in order to encourage both Australian students and Taiwanese students to change the manner in which they spoke to each other. The researcher learned from participants and was able to adjust the research approach even as the research was underway so that the cultural differences and prior learning influences of the children were better accommodated in the project. Applying the ethnographic method in educational research allows the researcher to identify and explore research outcomes as they emerge during the investigation of teaching activities (Wang 2008). An ethnographic approach to research requires that the research problem is important to participants as well as the researcher. This ethnographic research project is useful and relevant both to the learner-participants and to the teacher-researcher, as it develops and tests learning theories prompting and informing reform of curricula and teaching practices, and enhances the abilities and consciousness of those involved. The ethnographic research problem should identify a gap in knowledge and practice that can be addressed through context-sensitive innovations and evaluation of these innovations. If the problem of improving conversational skills in the teaching and learning of English were addressed via a

quantitative research approach, a survey of teachers might be conducted, but a survey of young learners would be problematic. Furthermore, no new learning opportunities would be available to participants.

Participant opinions concerning ICT options in teaching and learning would be largely hypothetical and conceptual rather than experiential in a large scale survey. Kelly et al. (2003) illustrate that survey research is useful for accessing cross-sectional (snapshot) data for large numbers of people in a short time, but cannot effectively deliver a rich understanding of those data for relevant issues, problems, or theories. It would be possible to survey the language learning experiences and opinions of larger numbers of people using quantitative methods, but this would not provide a rich account of a real group of learners engaging with a new technology in their ordinary classroom environment. As teaching and learning language and culture is a complex and highly interactive process which is responsive to culturally-specific contexts, survey snapshot data of what teachers think and do cannot provide the same insights as careful, immersed and prolonged description of their engagement with their learners and the technology within the curriculum.

Quantitative methods involve the concepts of classification, comparison, and quantification, which can effectively test hypotheses, but cannot generate deconstruction and criticism (Han 2003). As this project was not seeking to classify, compare or quantify language learning but to manipulate the language learning experience and describe the experiences of teachers and learners by observation and their own accounts, an ethnographic method was most suitable.

Figure 10 The Research Schedule

Date	Process	
15 th Feb. 2010	preliminary classroom observations and teacher discussions	 constant observation
19 th Feb. 2010	Confirmation of pre test with teachers	
24 th Feb. 2010	Pre test	
3 rd Mar. ~19 th May 2010	Deliver ICT and language exchange project	
21 st May 2010	Post test	
22 nd May 2010	Interviews with teachers	
24 th ~29 th May 2010	Interviews with parents	

An ethnographic case study method allows and encourages researchers to implement multi-method research to collect and analyse a variety of complex data. In order to generate rich data to explain the impact of this intervention on teaching and learning processes and outcomes for a specific group of learners and their teachers and parents, a range of research methods were selected (see figure 10). Through language testing, observation, and individual interviews, the researcher identified and evaluated the effects of an on-line exchange program for a twelve-week period in terms of students' speaking and listening competence as well as students' motivation and language performance, teacher assessments of student performance, and parents' attitude towards their children's learning outcomes.

3.4 Research Rationale and Methodology

Silverman (2006, p. 282) argues that reliability in qualitative research is achieved through both methodological and theoretical transparency:

- The research process is made transparent by describing research strategy and data analysis methods in a sufficiently detailed manner in the research report;
- Theoretical transparency is achieved by taking an explicit theoretical stance from which the interpretation takes place and showing how this produces particular interpretations and excludes others.

Accordingly, adopting an ethnographic approach in this research can allow for an examination of learning theories in practice and an evaluation of a reform of curriculum and teaching methodologies in terms of the learning experiences and outcomes for a specific group of learner-participants and their teachers. Figure 11 shows the sequence for the research process.

The research provided participant Taiwanese and Australian students real time communication opportunities to practice their target languages by means of an instant message program. The two learner groups studied the same weekly topic in their target language of either Mandarin or English across twelve weeks. All the topics involved activities common in the daily life of each community and invited consideration of the cultural norms, values and beliefs that distinguish Taiwanese and Australian communities (see Appendix 1). Language teachers were present to assist learners while they were talking with the 'foreign' group, and learners used their target language naturally in authentic exercises by exchanging and sharing their information with foreign partners in a real-time environment. Twelve one-hour classes were presented on the different topics from 11th April to 13th June 2010 (see Appendix 1). The lessons involved the use of web-cams and microphones in the language classrooms to link, via the Internet and ICT technology, students in Chi-Do Primary School in Keelung and Tzu Chi Academy Australia in Croydon. The web-cam and

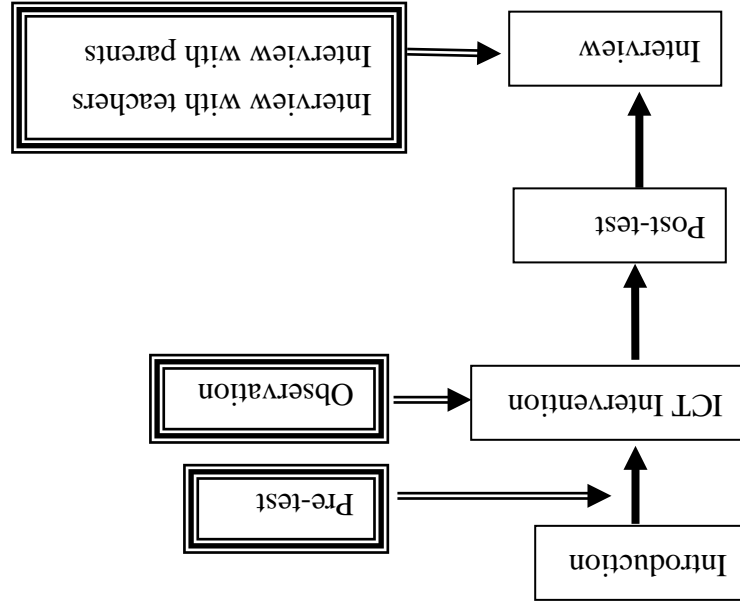


Figure 11 The Research Process

microphones enabled overseas students to see and hear each other, and the researcher recorded the process with web-cam software for later analysis.

Coombes (2001, p. 42) points out that the advantage of participant observation is that it allows researchers to “...discover the priorities and concerns of the group studied.” As the researcher was immersed productively as a teaching colleague and instructor as well as researcher, she was inevitably a participant in the research activity and could not be positioned as neutral in relation to the process of the intervention and its effects. The researcher had a strong hope that the ICT intervention would improve language learning, but the data may have shown otherwise. To ensure that researcher bias did not distort the research, all learner interactions with each other and the technology were recorded and included for analysis, whether these were negative or positive experiences.

Through language testing of children (pre- and post-intervention), observation of children, and individual interviews with teachers and parents, the researcher sought to build a rich, ethnographic account of the learning activities and identify and evaluate the effects of on-line exchange program for a twelve-week period in terms of students’ speaking and listening competence as well as students’ motivation and language performance.

3.4.1 Selection of Participants

Arcury & Quandt (1999) emphasise that the goals of the research and the populations to which the researcher intends to generalize are critical considerations when selecting participants for qualitative research. They suggest five steps to identify and recruit

appropriate participants for qualitative research:

- specify the characteristics relevant to sampling;
- generate a list of ‘sites’;
- estimate the composition of the potential participants at each site;
- begin recruiting study participants and decide approximately how many participants will be recruited from each site; and
- maintain a table indicating the characteristics of the participants in the sample.

In qualitative research, samples are frequently small and sample size is not a critical factor, but the identification of participants who regularly immersed in the problem of study and also accessible to the researcher becomes crucial to the validity and relevance of findings from research. Therefore, this research project implemented the data triangulation methodology (Denzin 1994) to enhance its validity: students-teachers-parents and tests-student performance sheet-interviews.

This research project took place in Sydney, Australia and Keelung, Taiwan. Both these cities are built around international harbours and their governments make efforts to implement language education policies in order to promote their international status. The researcher selected Chi-Do Primary School in Keelung and Tzu Chi Academy Australia in Croydon, NSW as two appropriate schools for investigation. Tzu Chi Academy Australia provides Chinese culture and Mandarin courses such as ‘Chinese Culture and Humanity Class’ for Australian primary students on Sundays (from 9:30 am to 12:30 am). Chi Do Primary School teaches English to Taiwanese students twice a week (60 minutes per class). Schools in both countries expect their students to achieve listening comprehension, which includes recognition of phonemes, words and sentences and conversational skills in their target language. Australian and Taiwanese

targets for foreign language education require pupils to speak their target language with correct pronunciation and intonation and to express themselves using learnt words or phrases in their daily life.

Participant Taiwanese and Australian students had learned English and Mandarin respectively for at least one year. The research provided them *real time* communication opportunities to practice their target languages supported by an instant message program. They received the same topic weekly in both Mandarin and English, involving culture and daily life (Appendix 1). The range of students' ages was from ten to eleven, as this age range has adequate semantic development, memory, and oral muscle control (Cheung 1997). Bickerton (1981) proposes that the most effective age for formal language study is between 10 and 12 years old, since the child's brain has reached a suitable stage at this age for effective formal language learning. Krashen (1985, 1987) agrees that children can achieve better outcomes in language learning than adults. Lightbown & Spada (1999) state that older learners or adults are often embarrassed and frustrated about their inadequacy so that they lose confidence in learning a second language at an early stage. Accordingly, the key age for children to be engaged in learning L2 is approximately nine or ten years old (Shih 2001). Wu & Chang (2001) agree that two to six years old learners are at crucial development of personality, cognition, social education, and language. However, Mao & Tang (1992) found that learning English as second language at an early stage might have a negative influence on children's first language learning, cognition, socialization, culture agreement. Therefore, the research project recruited 10 to 11 years old students. The twelve child participants were of mixed gender: three boys and three girls in each of the two cultural groups. Equal gender numbers provided the opportunity to clarify and understand diversity such as learning motivation, activity,

and attitude toward foreign peers as it occurs for boys and for girls.

The selected participant language teachers had language teaching experience of at least three years, and they provided linguistic assistance for their students during the project. For example, they assisted students to use specific words in their target language fluently, and explained different cultural norms to children prior to ICT sessions. Participant parents played important roles in this project in that they offered information about how their children used the target language at home and made suggestions for further research. These parents were selected on the basis of their patience, available time, and language abilities. These participants met Laverty's (2003, p. 6) criteria for participants of:

[having] lived experience that is the focus of the study, [being] willing to talk about their experience, [being] diverse enough from one another to enhance possibilities of rich and unique stories of particular experience. (Laverty 2003, p. 6)

The recruitment of teachers and students in Keelung and Sydney deployed the use of convenience sampling, in which (definition + source). The researcher had a pre-existing collegial relationship with the teachers in Keelung and Sydney, which facilitated the identification and recruitment of suitable teachers and obtaining the cooperation of the schools involved. Parent participation was based on availability of the recommend by language teachers.

3.4.2 Observation

Bailey (1978) notes the advantages of observation are that it allows researchers to

obtain naturalistic and rich data. Delamont (2004, p218) explains that:

Participant observation, ethnography and fieldwork are all used interchangeably...they can all mean spending long periods watching people, coupled with talking to them about what they are doing, thinking and saying, designed to see how they understand their world.

Non-verbal behaviour such as facial expressions, gestures, and body posture in class was observed and recorded for later analysis. Observing unobtrusively via the web-cam meant that students were not distracted from an authentic second language and cross-cultural conversation with real partners via computer technology. The researcher, who was also working as a support teacher, was therefore free to engage with the learners and manage the technology during the classes without having to capture data at the same time. The recording of student's interactions allowed the research to revisit and closely analyse the data, so that she could obtain a performative and authentic picture of students' learning behaviours in addition to the other techniques of data collection (language testing and interviewing).

As a participant observer, the researcher's own activities and impressions are relevant and are reported by commentary collected in regular journal accounts derived from observation and reflection throughout the process of instruction, assessment and research. Preliminary classroom observations were conducted to deepen the investigation and inform the design of the ICT language sessions. Hence, the researcher was directly involved throughout the project with both the Australian and Taiwanese groups in face-to-face and computer mediated formats as a participant observer.

3.4.3 Interviewing

In qualitative research, individual in-depth interviews are common data-collection procedures, allowing the researcher to obtain in-depth information (Minichiello et al. 1995). The resulting data can capture the complexity and nuances of a social context: ‘The primary advantage with interview data collection are the richness of the description...’ (O’Malley & Chamot 1990, p. 95) Interviews allow researchers to understand and explain the interviewee’s perceptions of self, life and experience, and the aspect of social reality under investigation. Semi-structured interviews also allow participants to identify what the important issues around an activity or institution are for them. Hence, semi-structured interviews allowed the researcher to understand teachers’ and parents’ attitudes and thoughts about language teaching and learning involved in standard classes and in ICT-enhanced platforms. The extra and general interview questions, offered by the researcher, designed to seek their own ‘questions’ about language teaching and learning. Parents and teachers contributed very important information (refer to Appendices 3 & 4 for Interview Questions) concerning limitations on language teaching and learning such as funding, personnel, and facilities, and interviews with them were valuable because they could provide the kind of experiential data that allowed the researcher to understand the whole set of issues that surround the questions. They also provided feedback on the ICT intervention, for which they suggested amendments and improvements. Such a comprehensive and rich understanding of the experience is essential to ethnographic accounts.

3.4.4 Pre-test and post-test

Tests are not conventional ethnographic tools, but they provided valuable data for this

research project. As the children take tests as a regular feature of their language instruction, including these tests in the research project aligned the lessons with the ordinary and formal curriculum. The results of the tests also provided an additional form of data that complemented the ethnographic data collected in the research project. Therefore, the researcher used speaking and listening achievement tests that were appropriate for assessing the impact of the ICT intervention for the specific age group and existing curricula. The Hawaii Department of Education (2007, p. 1) defines the achievement test as ‘a standardized test designed to efficiently measure the amount of knowledge and/or skill a person has acquired, usually as a result of classroom instruction.’ Such tests provide a statistical outcome to measure if student learning is adequate. The researcher implemented *Cambridge YLE* (Young Learner English) *Sample Tests* (see Appendix 2) as a language proficiency test to measure the speaking and listening abilities of Taiwanese students of English before and after the ICT intervention. Cambridge YLE Tests, developed by Cambridge ESOL, are designed to measure the English learning outcomes of 7 to 12 year-old non-native speakers (Cambridge ESOL 2008). There are three levels for students taking the test: Starters, Movers, and Flyers. The researcher utilised the Starters test because of the students’ age and language ability. The length of the listening test is 20 minutes, and that of the speaking test is 3-5 minutes.

Taiwanese students were instructed in vocabulary, grammar and the list of sentence structures provided by Cambridge ESOL (2008) before completing the pre-test. The researcher discussed with teachers the content and implementation of the test in the context of their syllabus and lesson planning to achieve consistency with taught items and content. The vocabulary for Starters level includes animals, colours, family and friends, food and drink, the numbers 1-20, school, sports and leisure, and the world

around us, all of which were also covered in the ICT syllabus (Appendix 1).

The post-test also was derived from the Cambridge Starter series of tests and was completed after the ICT intervention to evaluate learning outcomes. To assure the comparability of pre- and post- test results, assessment tasks and items in both tests were equivalent but different in order and specific item selection. Both tests drew on the vocabulary, grammar and syntax included in the formal and current school language syllabi. Only Taiwanese students were tested due to the current lack of high quality and reliable international Chinese tests. The post-test was designed to assess the participants' listening and speaking abilities and progress in language proficiency (see figure 12) after receiving the twelve weeks of online practice. Furthermore, to avoid any interference with the results of the post-test, the correct answers to all the questions were not reported after the pre-test. Therefore, students did not have the chance to access test answers or grading until the conclusion of the twelve week program.

Figure 12 The Procedure for Assessments

Pre-Test Cambridge Starters (Achievement Test): To realise what students' language learning outcomes are at beginning of a period of instruction.		
Skills	Assessment types	Language proficiency
Listening	<ul style="list-style-type: none"> • Intensive • Responsive • Selective • Extensive 	<ul style="list-style-type: none"> • Distinguishing between sounds • Dictation • Short statement or conversation • Integrated listening test with other skills
Speaking	<ul style="list-style-type: none"> • Imitative 	<ul style="list-style-type: none"> • Grammar

	<ul style="list-style-type: none"> • Intensive • Responsive • Interactive • Extensive 	<ul style="list-style-type: none"> • Vocabulary • Comprehension • Fluency • Pronunciation
Post-Test Cambridge Starters (Achievement Tests): To assess students' language acquisition by the end of a period of instruction.		

The purpose of the pre-test and post-test was to assess the speaking and listening ability of students to allow the researcher to identify what impact on speaking and listening proficiency is evident from the ICT intervention. Whilst language tests can provide a useful measure of a student's speaking and listening proficiency, they provide limited feedback on the learning process and how a new intervention is experienced by users and contributes to changes in motivation, performance in non-test environments, and alternative assessment. Research methods including observations of learners and individual, in-depth interviews with teachers and parents are able to provide rich, experiential data about a new learning intervention that may more comprehensively evaluate the benefits and limitations of ICT enhanced language learning.

3.4.5 Student Performance Criteria Sheets

In addition to reviewing this test-based feedback, teachers viewed recorded performances of the learners in the ICT intervention and were asked to complete the criteria sheets (Figure 17) from the language curricula of the MOE in Taiwan and Department of Education and Training in Australia to assess the language learning outcomes of participant students in the rich communicative context of online real-time

communications in comparison to test-based assessment of ICT outcomes.

These criteria sheets (Figure 17) were crucial data evaluation tools in this research. Language teachers assessed their students' listening and speaking proficiency by checking these sheets for each student before and after the project during teacher-interviews as they watched recorded performances of the learners. Then the data from these criteria sheets, which rank performance for various elements of cultural awareness and sensitivity as well as listening and speaking comprehension were scored to measure the language learning outcomes. Evaluation criteria covered language skills, computer skills, and cultural sensitivity. Two language teachers completed criteria sheets to evaluate each child. Results from pre- and post-intervention language tests are reported in Chapter Four, and these results are compared with the criteria sheet evaluation of each child's performance. It is interesting and informative to compare results from the different assessment processes of testing and observation of performance.

3.5 Data Analysis and Integration

The researcher observed students' language exchange processes via computer so that she did not disturb the interaction and performance of students. She also asked teachers to comment on students' speaking and listening proficiency as demonstrated by their pre- and post-test results as well as a recorded sequence of learners' communication over the ICT platform so that teachers could evaluate the impact of the test against the language assessment criteria. The questions for interviews with teachers and parents (see Appendices 3 & 4) assisted the researcher to identify their expectations of language students and children and their assessment of the ICT

intervention project in relation to changes in learner achievement. Data are analysed as mutually exclusive, until the process is exhausted and no more findings are evident from separate data sets. But then the findings from each data collection method are compared for verification of findings or re-statement or questioning of findings. The integration of various sets of data is part of later stages of data analysis. The outcomes of the pre- and post-tests were significant to the project, providing an objective means of evaluating individual language proficiency and measuring improvements. It was also important to evaluate the development of interpersonal relationships and exchanges across cultures and languages, so it was necessary for the researcher to record the identity of student participants during the process of data collection. However, all identities of all participants were coded in reporting the data, so no individual can be associated with any specific comment or outcome. The data were collected in the following forms:

- Pre-test, establishing the initial language learning stage of students;
- Ongoing observation of the communicative interactions between students over twelve weeks of intervention and recordings of all ICT interactions, which formed the material for the researcher's learning journal;
- Post-test, allowing the researcher to evaluate learning results after the project,
- Interviews with teachers, including their responses to the pre/post-test and selected recordings of ICT exchanges; and
- Interviews with parents, including their perceptions of their children's language development and engagement in learning.

Each separate source of data supported the other sources, providing points of comparison and a means of cross-checking the reliability of the data and of the subsequent analysis. For example, the outcomes of the tests could confirm or

disconfirm the observation of the communicative interactions of language learners. Furthermore, the interviews with teachers could shed light on the outcomes of the tests, the students' learning context, teaching limitations, and the participation of parents in the students' language learning. Finally, the interviews with parents could establish the extent of students' learning resources after school and investigate parents' perceptions of their children's language learning.

All recordings were saved as protected files on the researcher's PC hard drive. All data files were password protected. Identifiers (names of participants) were coded once the testing and the evaluations were complete so that stored records display only the ID code for each participant. The record of codes was stored in a password protected file in a separate folder from the research results. All files were copied to a secure password protected disc which was stored in a locked cupboard at the supervisors' office to protect data from accidental destruction until reporting was completed. The results of all pre/post-tests, interviews, and observation were collated and analysed for reporting on the next chapter.

3.6 Ethical Issues

The research project required language teachers to tolerate a certain degree of stress and discomfort caused by students' emotions and problems such as an unstable Internet connection. Workshop participants (the two language teachers and language learners from Australia and Taiwan) may have experienced anxiety in communicating about some of the topics. Emotional response common within the challenging context of intercultural communication was a focus from the beginning. In order to prepare the learners for communication with their overseas peers and to minimise potential

anxiety and discomfort, an intercultural communication workshop preceded the implementation of the ICT intervention.

Approval for this project was given by the CQUniversity Human Research Ethics Committee (see Appendix 5). The participation of the two language teachers, twelve students, and four parents in the project was purely voluntary. All the teacher and parent participants volunteered as research participants and were asked to assign a consent form which accompanied the information invitation (see Appendix 6 and Appendix 7). Children participants were too young to give fully informed consent, so their parents signed the consent letter for them.

3.7 Conclusion

The qualitative research design of the ethnographic case study, and the case study model for addressing the research questions have been described and justified in this chapter. In addition, use of the qualitative research methods of participant observation and in-depth interviews with teachers and parents as sources of evidence has been outlined. Test outcomes complemented the other two data sources, and together these comprise the whole data set of the research project. Ethical issues involved in this research were addressed through the appropriate recruitment and selection of research participants, confidentiality for all participants, and the provision of intercultural communication workshops.

In the next chapter, findings derived from the data sources outlined above are described and analysed with relevance to the research questions.

Chapter Four: Research Analysis and Results

In the previous chapter, the qualitative methodology of this ethnographic case study, and the design of the on-line exchange program were explained and justified. In this chapter, the results of the study, derived from language tests, class observations, and teacher and parent interviews, are described. The data are then analysed from the perspective of the research questions, and the evidence for the effectiveness of the ICT intervention is evaluated.

This chapter is composed of three main sections. The first section reports the differences between pre-test and post-test results. The second section describes the results of classroom observations and the researcher's learning journal. The third section reports on the interviews with teachers, their evaluations of student achievement using purpose-designed criteria sheets, and interviews with parents. Analysis and evaluation of these data from multiple sources was conducted in order to provide a better understanding of the outcomes of incorporating ICT within language classrooms.

4.1 Students' Pre-Test and Post Test

The main advantage of tests in this project was that they provide easily quantifiable, objective data. The results of the tests thus enhanced and complemented the outcomes of other qualitative data such as observations and interviews. Testing is the key evaluative activity performed in language classrooms around the world, and is extremely common in Taiwan. Incorporating this standard method of measuring achievement in the research can be regarded as a means of ensuring that the outcomes

are meaningful to the participants within their standard frames of reference and can also provide a measure against which qualitative data from observations and interviews can be compared.

The Cambridge Young Learners' English Tests (hereafter referred to as 'YLE') are popular English tests created for children aged 7 to 12. YLE tests students on their proficiency in language production and comprehension. The test implemented for this study included two sections – listening and speaking (see Appendix 2). All test items were analyzed prior to testing to assess their relevance to the Taiwanese primary student cohort included in the ICT intervention lessons and to ensure that they were aligned with the students' English syllabus.

The vocabulary included in the listening test was mainly restricted to the vocabulary that students had learned in class. The listening test included four parts. The first part was a picture-to-word matching exercise which mainly involved naming household items and furniture. The second part of the test was a listening and writing test which measured recognition of numbers and also tested spelling and writing ability. The third part was a 'listen and tick' exercise that assessed listening comprehension of vocabulary concerning position, clothing and fruits. The fourth part was a 'listen and colour' exercise that examined comprehension of terms used to describe colour in English. There were five questions in each part of the test, and the maximum score was 100.

The speaking test included five questions which required students to use spoken English to name and describe position, colours, animals, numbers and objects common to daily life. The categorical content of the post-test was the same as the

pre-test with different vocabulary items selected from these categories. Figure 13 outlines the occurrence of items from these vocabulary categories in the listening pre-test and post-test.

Figure 13 Specification of the Listening Test

	Measured Ability				
Content outline	Position	Colour	Fruit	Numbers	Daily life objects
Listening Part 1					5
Listening Part 2				5	
Listening Part 3	2		1		2
Listening Part 4		5			
Total	2	5	1	5	7
Percentage	10%	25%	5%	25%	35%

4.1.1 Results: Pre- and Post-test

The pre-test was held on 11th April, 2010, before the Taiwanese students had started the ICT programme (see Figure 10 in Ch3). The tests were held prior to the first week and at the conclusion of the final week of the intervention.

After the pre-test, Taiwanese students reported to their teacher that they were not confident in completing the listening test even though the test targeted knowledge of linguistic items from their regular curriculum. Although the students had already learned these items in their classes, they had not heard native speakers' pronunciation of such language before the listening section of the pre-test. In addition, the speaking and listening test style was very different from their usual school tests, which only require them to memorize some vocabulary and grammar and provide written

responses instead of using language orally and aurally. Learner unfamiliarity with these aspects of test content and format needs to be acknowledged as a possible factor affecting test performance, particularly in the initial pre-test.

To sum up, the outcomes of the pre-test provided baseline data on student language proficiency, but teacher-student discussions after the test emphasised the lack of opportunity for listening and speaking practices for Taiwanese English learners resulting in low levels of confidence in responding to recorded spoken English in a test environment. This lack of experience with conversational English in both testing and non-test environments was an expected outcome, in the light of the researcher's own English teaching experience in Taiwan and was a key rationale for developing an on-line exchange program linking Taiwanese-based learners of English with Australian-based learners of Mandarin. The pre-test result indicated that the current curriculum had very limited capacity to increase language learners' proficiency and confidence in using and responding to English in speaking and listening contexts. Test results supported the assumption that a more adequate teaching and learning pedagogy in the language learning context was desirable.

The post-test was held on 4th July, 2010, after the researcher had implemented twelve weeks and fifteen hours of engagement with the ICT language intervention program connecting Taiwanese students with Australian learners (see Figure 10 in Chapter 3). The post-test also included four parts, combining listening and speaking sections. The outcomes of the post-test differed significantly from those of the pre-test. Listening skills had greatly improved, and speaking skills also demonstrated significant improvement. Moreover, Taiwanese students demonstrated strongly enhanced confidence in their conversational English in informal conversations held with the

researcher after ICT exchange sessions over the period of the program. The following is an excerpt from a conversation between teacher and student after the post-test.

Teacher: hái zi men, nǐ men jué de hòu cè rú hé? [How do you feel about the post test, kids?]

Student B: wǒ jué de wǒ gǎn yòng yīng wén shuō huà shèn zhì zài xià kè hòu. [I feel I have confidence to speak in English even after school.]

Student A: wǒ zhòng tīng yí cì cè yàn xiàn zài qīng chǔ duō le. [It was much clearer when I listened to the test again.] wǒ xiàn zài bǐ jiào gǎn shuō yīng wén le. [I am confident of speaking English much more than before.]

After participation in the ICT intervention, Taiwanese students were far more satisfied with their performance in the post-test than they were with their pre-test performance. Many of them displayed more positive verbal and non-verbal behavior in the test and after the test when discussing their performance than they had in the pre-test. The ICT intervention appeared to significantly decrease students' anxiety and build confidence in the language classroom and the test environment. As mentioned in Chapter 2, Taiwanese students were frequently frustrated when taking the host of pen-and-paper tests that are standard within the current pedagogy. However, their test anxiety and conversational confidence were clearly improved as a consequence of their experience of the ICT intervention program. They gained English language confidence from interacting with their Australian friends, and they also enjoyed communicating in Mandarin with their foreign partners and were enthusiastic in their participation. Whilst it can be argued that learners had a greater familiarity with test format and content in the post-test as a consequence of completing the pre-test, alternative data generated in this research supports the claim that learners benefited from the ICT

intervention program in various ways, including improved speaking and listening skills. These results align with Roblyer & Edwards' (2000) claim that ICT-supported collaborative language learning can affect both learning motivation and proficiency. Prathibha (2010) also highlights the benefits of ICT integration into language learning in relation to enhanced student motivation, language proficiency and cross cultural knowledge.

4.1.2 Discussion and Analysis of Pre- and Post-test Results

Figure 14 provides the test results from the Cambridge pre-test and post-test. Significant differences in the scores on these tests before and after the ICT language exchange program are apparent. It is evident that the ICT intervention language exchange program enhanced the students' conversational ability, particularly in listening, where students showed dramatic improvement.

*

Figure 14 Descriptive Statistics of Performance on Tests

Test	Pre-test		Post test		Difference	
Language skills	Listening	Speaking	Listening	Speaking	Listening	Speaking
Student A	50	75	85	85	+35	+10
Student B	45	65	80	85	+35	+20
Student C	25	60	65	75	+40	+15
Student D	15	60	75	85	+60	+25
Student E	25	70	75	90	+50	+20
Student F	25	65	80	75	+55	+10
Average	30.83	65.83	76.67	82.5	45.83	16.67

The average improvement between pre-test and post-test results for speaking achievement is 16.67%, and the average differential for listening is 45.83%, representing a huge improvement. It is evident from these results that students improved their aural comprehension of words, intonation, sentences, and conversation in their target language as a result of this ICT intervention project. Opportunity for students to learn from each other via ICT in completing communicative tasks using language in a natural and authentic context appeared to support improved language learning outcomes, suggesting that a new ICT-enhanced methodology for the traditional listening class can improve language learning outcomes well beyond what is achieved in traditional drill and CD audio practice. This outcome supports the claims of language theorists that ICT integration can improve learning outcomes in speaking and listening (Delfino & Dettori 2009). It also supports Brown's (2000) contention that regular practices with other speakers in diverse conversation can enhance fluency and accuracy in conversation ability. One reason that ICT language exchange programs can improve second language listening ability is related to Krashen's theory (1987) of 'language acquisition' discussed in Chapter 2, which emphasizes the 'unconscious learning' that takes place when attention is focused on meaning rather than on grammatical items or sentence structure, as is conventional in rote-learning approaches. Test results indicated that this ICT intervention project enabled the students to utilise their passive knowledge of the language items they had studied in real communication and also respond more successfully to these items in test environments.

The research attempted to establish the prior language competence of these Taiwanese learners as captured through regular classroom testing. Figure 15 represents aggregate individual test scores for the Taiwanese child learners in this study derived from their

regular term tests in the Standard English curriculum prior to the ICT intervention. The researcher obtained the speaking and listening data through the students' school teachers. The term test was less challenging than the Cambridge YLE as it included very limited aural material and required no oral performance other than repetition of single vocabulary items. It was therefore almost entirely a test of reading and writing ability, even though these tests deliver an individual score for listening and speaking. As there was very little calibration or equivalence between the format, content and task type of the classroom tests and the Cambridge YLE, it was impossible to meaningfully compare test results. For example, as no adequate aural material was included in any regular classrooms test, the tests offer very limited validity in generating meaningful and reliable data on listening or speaking. In the listening tests that are set in the regular curriculum, for example, students select simple multiple choice answers to assess their recognition of taught vocabulary. Similarly, speaking tests in the regular classroom simply require students to read discrete vocabulary items aloud. As the tests required recognition of either heard or read vocabulary items and did not test for comprehension or production of language in use - that is, phrases, sentences and conversations - the teachers were able to score the students' listening and speaking ability well beyond their actual communicative speaking and listening capacity. This explains why the children scored so highly on the class tests but achieved lower scores in the real time conversation context when graded by the same teacher. Whilst the numerical scores were higher in the term tests than for YLE, this difference is misleading for these reasons. It should be recognised that while schools and teachers are expected to demonstrate improved outcomes across all language skill areas, teachers have limited resources to deliver genuine communicative pedagogy in the Taiwanese primary context. For these reasons, speaking and listening skills are tested in a very limited way and results do not reflect the conversational abilities of

students.

Figure 15 Performance on Term Tests

Language skills	Listening	Speaking
Student A	82	90
Student B	74	82
Student C	66	84
Student D	68	74
Student E	72	76
Student F	76	84
Average	73	81.67

The evidence for the positive impact of the ICT intervention on the listening skills of the English learners in test conditions is impressive. It is likely that this is because the ICT intervention program deployed pedagogical strategies recommended by theorists such as Sandall et al (2003) who suggest that listening classes should engage students in purposeful listening activities in which students focus on heard information in order to summarize and complete associated tasks. They also emphasized the modelling of listening techniques and use of visual imagery as stimulation by teachers to ensure improvement in listening comprehension. This ICT intervention program provided a clear purpose for students to listen as well as speak in the form of an opportunity to make friends across cultures and practice a second language using a contemporary technology. Not only did the ICT program provide a purposeful communicative opportunity, but it also allowed teachers to monitor student performance as they conversed rather than by means of written tests.

The outcomes of the pre-test and post-test can only provide limited assessment of

language abilities (listening and speaking) and cannot provide insight into the impact of the intervention program on learners' motivation and their views of collaborative learning, TBL, and cultural exchange. The testing regime was not the key data collection tool of the research, as the test environment involves inauthentic communication, and student capacity to interact conversationally in real time with English speakers was intended as the primary measure of the impact of the intervention. However, language testing, as the conventional method of assessment of proficiency, provided useful data to be compared with further qualitative data reporting on complex learner experiences and developments in terms of motivation, pedagogical variation and intercultural contact. Despite the limitations of a language test in reporting learning outcomes, the gains evident in this pre- and post-test data indicate that the intervention program improved listening and speaking proficiency outcomes compared with pre-ICT intervention language instruction. Qualitative methods of evaluating learning outcomes from observation, interviews, and teacher evaluation sheets allowed a more in-depth understanding of why and how such proficiency gains were evident in testing.

4.2 Results of Observations and Learning Journal

Observations are not merely methods for finding out about impacts of change, but can incorporate and generate change, particularly in the teaching and learning context where new approaches are implemented to improve learning outcomes. As Angrosino & Perez (2003, p. 111) argue, '...it might be useful to shift from a concentration on observation as a *method* per se to a perspective that emphasizes observation as a context for interaction among those involved in the research collaboration.' Observation plays a central role as a research method in classroom contexts,

particularly with young children who are inappropriate interviewees due to cognitive immaturity (Mason 2002).

Mason (2002, p. 97) pointed out that ‘researchers who use observational methods, as discussed, are usually interested in non-verbal elements of their research settings as well as verbal interactions, accounts and discourse.’ Nonverbal elements include kinesics, proxemics, and appearance, and verbal interactions include intonation, speaking duration, and silences. Consideration of both verbal and nonverbal performance, facilitated by the real-time audio-visual format of ICT, enriched this language-based research and assisted the researcher to develop an understanding of the experience from the perspective of both Taiwanese and Australian students during their ICT intervention project. Accordingly, observation was conducted in the Tzu Chi Academy classroom, so that both the real classroom and the ‘virtual classroom’ created through ICT could be observed simultaneously. The virtual classroom was recorded audio-visually and later reviewed to support regular reflective journal entries by the researcher.

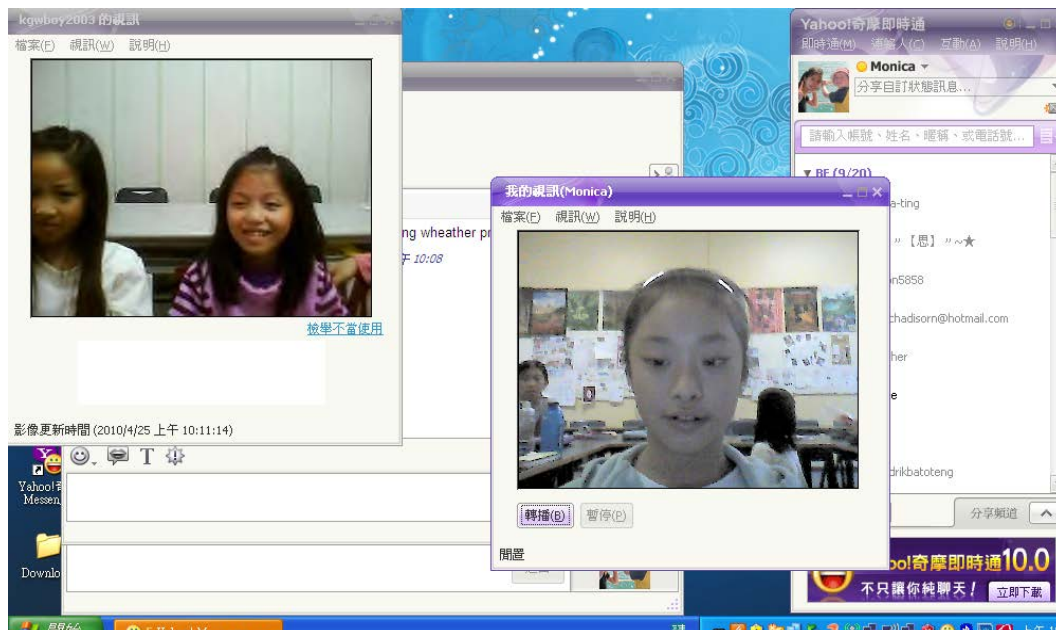
4.2.1 Results: Observations

The ICT service used for this intervention, Yahoo Messenger, allows all audio and visual elements of an online conversation to be recorded and stored electronically. The researcher recorded the experiences of all learners in all sessions in this way and then transcribed and translated verbal data and described non-verbal data in a journal (see Learning Journal on 25th April ~6th June 2010). In the ten one-hour learning sessions, all of the children spoke Mandarin for approximately thirty minutes and English for the remaining thirty minutes of each session. Students therefore, spoke their target

language by turns, and their language teacher assisted them if they did not know how to express themselves in their target language. The researcher selected the beginning of each class, around 20 minutes for 7 sessions, as the key focus of observational data. This observational data facilitated the generation of rich description of how program activities were performed by attending to the non-verbal learner behaviour as well as utterances of learners as they interacted using their second language. However, not every piece of conversation was selected for close analysis; the researcher selected the most meaningful interactions based on students' verbal and nonverbal performances using their target language. The learning journal also includes screen shots and conversational extracts, both in English and Mandarin. The following excerpts from the learning journal exemplify students' formulation of responses to prepared questions and attempts to understand their interlocutors' communicative intention. Non-correction of errors made by children speaking in their second language was observed by teachers and researcher in the observation because the ICT intervention project aimed to encourage the communication among the language learners rather than provide correction.

4.2.1.1 Learning Journal: 25th April, 2010

Image 1



Screenshot from the learning journal, 25th April, 2010

Image 1 illustrates the first online meeting of Australian and Taiwanese students. The topic of this week was 'Introductions', and the students introduced themselves with great excitement, evident from both their verbal behaviour (such as loudness, high pitch, and intonation) and nonverbal behavior (such as moving from the chair, hand gestures, and eye contact).

Australian student: 'nǐ hǎo?' [How are you?]

Taiwanese student: 'How are you? Nice to meet you.'

Australian student: 'hěn gāo xìng rèn shì nǐ, wǒ de míng zì jiào zuò Kelly'
[Nice to meet you, too. My name is Kelly.]

Taiwanese students: 'I'm Zoe, and she is Tina.' 'We're 10 years old, and you?

Australian student: 'wǒ yě shí suì' [I'm ten as well.]

The internet was not as stable for the Australian learner group as it was for the Taiwanese learners in the first session. The Australian system lagged, and learners received fairly 'slow-motion' visuals of the Taiwanese students. Apart from this technical issue, which was resolved for future sessions, a further obvious issue in this first session was the nervousness and shyness of the Taiwanese students, most of whom were trying to communicate in English for the first time. Generally speaking, this session provided a good start for both learner groups, as the students were getting to know each other and overcoming some of the shyness usual between unfamiliar interlocutors. Students gradually relaxed, progressing from being frequently speechless and shuffling uncomfortably in their chairs to being willing to express themselves with a smile in front of the monitor.

4.2.1.2 Learning Journal: 2nd May, 2010

Image 2



Screenshot from the learning journal, 2nd May, 2010

After a two-hour Mandarin class, the Australian group looked tired. When they saw the laptop, however, they seemed to recover some energy. The Australian students made faces and waved in front of the screen when they saw their Taiwanese friends online. At the same time, Taiwanese students smiled and nodded back to them. The topic of this week was Chinese New Year. Both groups of students asked many questions, demonstrating a strong interest in each other's cultural traditions.

Australian student: **‘nǐ yǒu ná dào hóng bāo ma?’** [Did you get red envelopes?]

Taiwanese student: ‘Sure. Getting red envelopes brings us good luck.’ (They answered happily.)

Australian student: **‘nǐ yǒu fàng biān pào ma?’** [‘Did you play fireworks?']

Taiwanese student: ‘Yes, but not much. We don't have a place to play firework.’

Australian student: **‘nǐ men zhōng guó guò nián fàng jià ma?’** [Do you get the day off for Chinese New Year?]

Taiwanese student: ‘Yes, that's our winter vacation. How about you?’

Australian student: **‘wǒ men méi yǒu fàng jià.’** [We don't get the day off for Chinese New Year.] (Taiwanese students looked surprised.)

Taiwanese student: ‘What do you eat at Chinese New Year's eve?’

Australian student: **‘gēn píng cháng yī yang.’** [As usual.]

Taiwanese student: ‘We eat big dinner and family get together on Chinese New Year’s eve.’

Despite the grammatical errors that occurred in students’ conversations, teachers did not correct them, since the purpose of this project was to encourage students to use their target language confidently. However, corrective and developmental work on language development can be usefully devised from observation of such real-time conversational sessions and provided for learners later in conventional classroom contexts. Taiwanese students replied slowly, and sometimes they needed their English teacher to help them to express what they thought. But the topic stimulated both groups of students, and they interacted with enthusiasm and were able to comprehend each other’s utterances with little difficulty. The Australian internet speed was improved after upgrading the mobile broadband connection.

4.2.1.3 Learning Journal: 9th May, 2010

Image 3



This was students’ third online meeting. Today, they discussed ‘Fruit and Food’ in the

context of their daily life.

Taiwanese student: 'What kind of fruit you do not like?'

Australian student: '**wǒ bù xǐ huān fān qié tài suān le!**' [I don't like tomatoes, they are too sour!] '**nǐ men xǐ huān shén me shuǐ guǒ?**' [What kind fruit do you like?]

Taiwanese student: 'Durian.'

Australian student: '**wǒ yě shì suī rán wén qǐ lái chòu dàn shì hěn hǎo chī.**' [Me too, although it smells stinky, it tastes good.] (Australian student could not wait to reply happily.)

Taiwanese student: 'I like to eat cauliflower, how about you?' (This student forgot how to say cauliflower in English, and he asked his partner for help. After that, this student remembered this vocabulary very well.)

Australian student: '**wǒ xǐ huān huā yé cài dàn shì bù xǐ huān hóng luó bo.**' [I like cauliflower as well, but not for carrots.]

Taiwanese student: 'Me either.'

This was Mother's Day in both countries; students also discussed what they were going to do after this class with their family. Conversations ended with 'Happy Mother's Day' and 'See you next week' (both in Mandarin and English).

4.2.1.4 Learning Journal: 16th May, 2010

Image 4



Screenshot from the learning journal, 16th May, 2010

It was autumn while the project evolved in Australia, but it was spring in Taiwan. Therefore, students found it meaningful to distinguish and clarify the difference in time and in seasons between Australia and Taiwan (southern hemisphere and northern hemisphere). Students were given vocabulary and sentences relevant to ‘Time and Seasons’ in their target language and asked to compose five questions individually.

Taiwanese student: ‘What time is it?’

Australian student: ‘**shí yī diǎn wǔ shí fēn, nǐ men ne?**’ [Eleven fifty, how about you?]

Taiwanese student: ‘Nine fifty, do you feel cold now? What is the season like in Australia?’

Australian student: **‘tiān qì yǒu yī diǎn liáng, xiàn zài shì qiū tiān.’** & **‘nǐ men jǐ diǎn shuì jiào?’** [It is bit cool, and it is autumn now. What time do you go to bed?]

Taiwanese student: ‘We go to bed at nine thirty, and get up at seven o’clock.’

Australian student: **‘nǐ wèi shén me nà me zǎo qǐ? dì yì jié kè shì jǐ diǎn?’** [Why do you get up so early? What time is your first class?]

Taiwanese student: ‘It starts at eight o’clock, but we have to get to school by seven thirty.’

Australian student: **‘wa, wǒ men zài jiǔ diǎn yǐ qián dào xiào. nǐ men jǐ diǎn xià kè?’**[Wow, we have to go to school by nine o’clock, and what time do you go home?]

Taiwanese students: ‘We go home at four in the afternoon, how about you?’

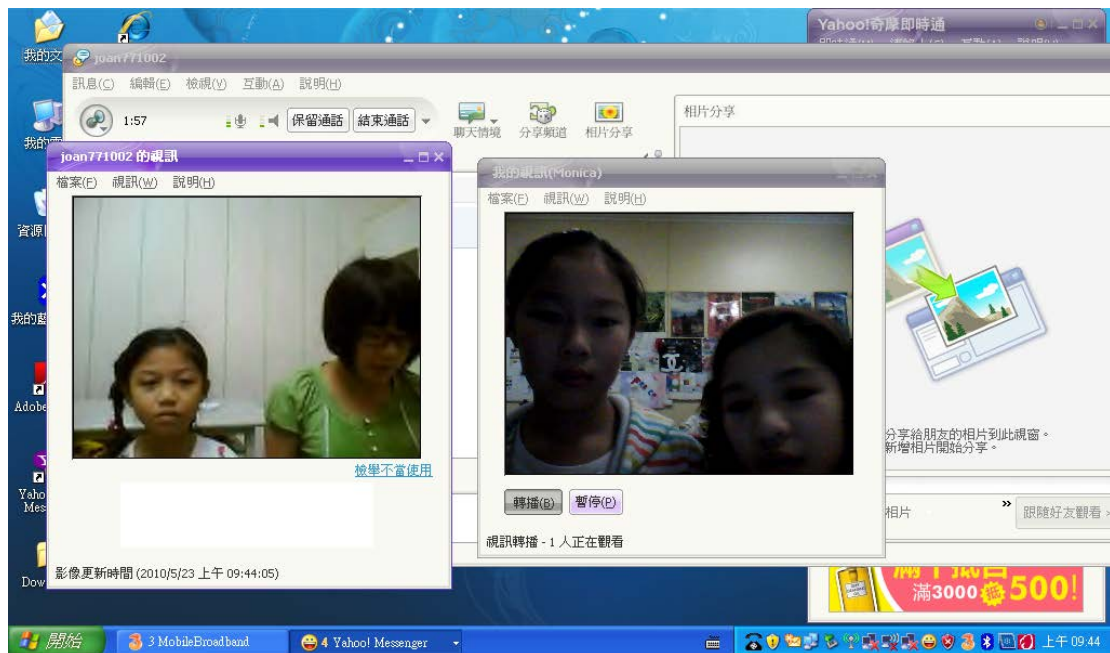
Australian students: **‘wǒ men sān diǎn huí jiā.’** [We go home at three.]

Taiwanese students: ‘Maybe we should study in Australia’

Both groups of students laughed and learned about differences in time zones, seasons, and educational policies. They were becoming much more familiar with each other as well and looked forward to seeing each other the next week.

4.2.1.5 Learning Journal: 23rd May, 2010

Image 5



Screenshot from the learning journal, 23rd May, 2010

Australia is famous in Asia for animal protection, and all children like animals. Hence, students discussed animals with enthusiasm in today's project.

Taiwanese students: 'Have you ever touched kangaroos at the zoo?'

Australian students: 'wǒ yǒu zài dòng wù yuán kàn guò dài shǔ, ěr qiě wǒ yě kě yǐ mō tā men.' [I have seen kangaroos at zoo, and I can touch them as well.] 'yǒu shí hòu, wǒ men zài xiāng xià kě yǐ kàn dào yě shēng dài shǔ' [Sometimes, we see wild kangaroos in the countryside.]

Taiwanese students: 'What kind of animal do you like?'

Australian students: 'gǒu, gǒu shì wǒ men de hǎo péng yǒu. nǐ men ne?' [Dogs, dogs are our best friends. How about you?]

Taiwanese students: ‘We like dogs as well, and cats are cute.’

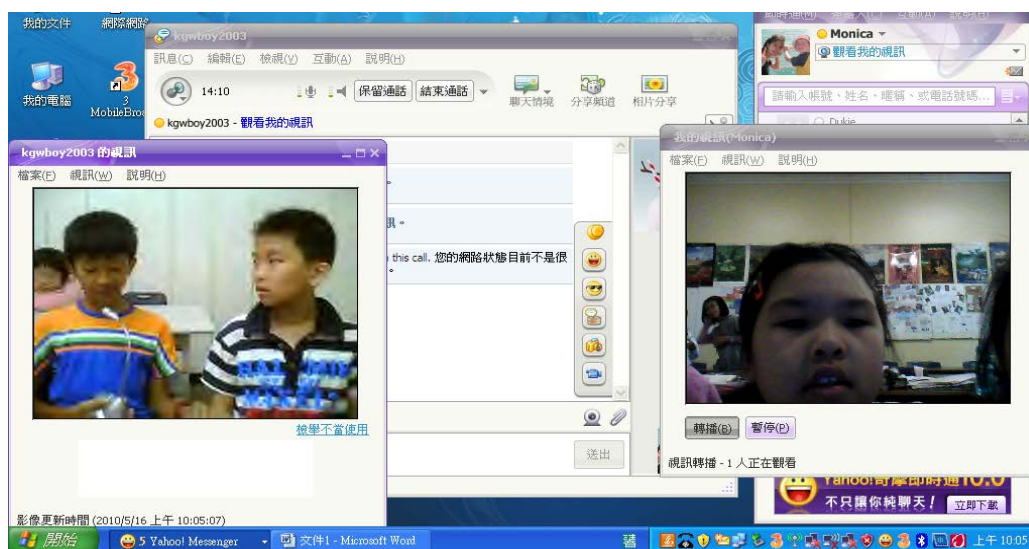
Australian students: ‘nǐ men zài jiā yǒu yǎng chǒng wù ma’ [Do you have pets at home?]

Taiwanese students: ‘Yes, I have a dog at home, and he is my best friend. I treat him like family.’

Both Australian and Taiwanese students not only produced their target language with improved fluency, but also shared their thoughts about animals they liked.

4.2.1.6 Learning Journal: 30th May, 2010

Image 6



Screenshot from the learning journal, 30th May, 2010

The topic of this week was sport. Within their discussion of this topic, both student groups explained their different hobbies and their lifestyles.

Australian students: ‘nǐ men xǐ huān shén me yùn dòng?’ [What kind of sport do you like?]

Taiwanese students: ‘We like to play basketball, play volleyball, and go swimming at school. What about you?’

Australian students: ‘**wǒ men yě xǐ huān yóu yǒng wèi shén me nǐ men zhǐ néng zài xué xiào wán?**’ [We like to go swimming as well, but why do you do exercise only at school?]

Taiwanese students: ‘We don’t have places to do exercise, so we like to play Wii or on-line games at home. Do you like to play Wii or on-line games?’

Australian students: ‘**wǒ men xǐ huān zài gōng yuán wán, wǒ men yě xǐ huān wán Wii.**’ [We like to play in the park, and we like Wii as well.]

Both groups of students discussed Wii sports such as tennis, baseball, and bowling excitedly. Wii is a popular home video game console with a wireless controller, the Wii Remote, which can be used as a handheld pointing device and detects movement in three dimensions. It allows users to play a wide range of games requiring whole body engagement in front of a television screen.

4.2.1.7 Learning Journal: 6th June, 2010

Image 7



Screenshot from the learning journal, 6th June, 2010

This was the final online class. Taiwanese students were clearly sad on this occasion, as they spoke little and hung their heads. The Australian students tried to comfort them by saying 'we will meet each other on-line some day.' Although they had met each other only two months earlier, the students treasured their cross-cultural friendship. During the project, they not only learned the language itself, but also experienced different lifestyles and cultural norms from foreign friends. Although it is not possible for the researcher to continue to provide ICT language exchange to these students, they and their teachers were advised on online options to access further online language exchange opportunities and were interested in pursuing these.

4.2.2 Discussion and Analysis of Learning Journal Results

Although instant message technology encouraged children to use their target language in public, Taiwanese students clearly felt frustrated when they could not express what they wanted to say in the first few classes. At the same time, Australian students showed their impatience and displayed some anxiety while waiting for replies from their foreign partners in the first few weeks. This may reflect cultural differences as well as language ability, as Australian children are encouraged to speak out in a culture that values individualism, whereas Taiwanese children are encouraged to be more reticent in a culture that values the collective above the individual (Hofstede 2001). Once relationships were established, however, this reticence on the part of the Taiwanese students was greatly reduced and they spent approximately the same amount of time speaking as their Australian friends did over the session. It is important for language teachers to anticipate how such cultural constraints may

impact on language exchange programs and to provide programs that allow time for relationship building and guidance on cross-cultural tolerance and respect in order to overcome such differences.

From the Learning Journal, it was clear that the Taiwanese learners were making significant gains in their speaking and listening abilities. They had no confidence in their ability to express themselves in English in the first two classes (see Learning Journal on 25 April and 2nd May) and they frequently needed their teacher to help. They remained silent over the first two classes for approximately 50 percent of the time. The teacher sat next to them for these sessions and spoke frequently to assist them. After the first two weeks, the Taiwanese students communicated in English more naturally, with less help from the teacher. The teachers' role was to monitor their students' performance, and in this way the class turned into a student-centred language classroom. This outcome illustrates what Krashen has termed 'unconscious' learning, which he argues is frequently more effective than conscious, formal, classroom-based learning (Krashen 1987). Here the students 'forgot' that they were 'learning' language as they became absorbed in using language and thus learnt in a linguistically natural environment. This finding demonstrates how rote learning and passive instruction, such as reciting grammar and vocabulary, can generate only very limited communicative competence even when learners accumulate extensive linguistic knowledge. By incorporating ICT software and connecting learners to exchange conversation in their target languages, this learning experience provided a communicative learning environment that required students to engage in L2 communication using linguistic knowledge that was largely passive and gained in the 'inauthentic' environment of the language classroom. The fact that learners were initially unable to deploy linguistic knowledge in real time communication reflects the

serious limitations of passive language learning in supporting communication. It seems that the project achieved two important results: it encouraged students to actively use passive knowledge, and it enhanced learner motivation, encouraging further learning about language and culture. Students did not necessarily learn new linguistic concepts, but gained practical communicative skills so that they could convert words learned on paper into knowledge in use.

As a consequence of genuine communication with target L2 speakers, both Australian and Taiwanese students' learning motivation was stimulated by receiving direct responses from *real and cognitively appropriate* partners in spontaneous conversation. Pintrich & Schunk (1996) propose that willingness to communicate generates motivation based on learners' inner requirements for learning. This project assisted language students to move toward higher willingness to use their target language and encouraged them to develop willingness to understand the culture associated with the target language. For example, the learning journal of 2nd May, on which the topic of conversation was Chinese New Year, shows how keenly learners were interested in cross-cultural information, in that they asked and replied to more questions than in any of the other ICT intervention sessions.

The potential for collaborative learning in the ICT chat context was also evident. For example, when one of the Taiwanese students forgot how to say 'cauliflower' in English, his Australian partner was able to help him in time to let him finish his conversation without any trouble (see Learning Journal on 9th May 2010). In fact, students willingly helped each other to overcome various challenges in their task topics and interactions every week by spelling and writing notes – using the text chatting function to achieve learning outcomes and develop their learning behaviour.

Through working together, students established a positive interdependence, interpersonal and small-group skills, and group work processes in the language learning context, all of which are considered valuable outcomes of collaborative learning (Johnson, Druckman, & Dansereau, 1994, Johnson & Johnson 1999).

Foster (1999) argues that TBL provides a student-centred, authentic, and learning-by-doing context for students to practise what they have learnt. Te (2004) suggested that TBL should involve the use of communicative language and real world issues. TBL provides a rich but comprehensible 'real language input' learning context in this technology project. The researcher designed tasks for both Australian and Taiwanese learners by providing weekly topics, and asked each student to prepare five relevant questions to ask their foreign partners in order to achieve a task such as developing cross-cultural understanding or finding out about hobbies and interests. This online exchange program incorporated language tasks to develop cognitive capacity in wide-ranging activities. In particular, the researcher designed the ICT Syllabus (see Appendix 1) to enhance the schools' existing language curricula, extend speaking and listening skills, and stimulate the motivation of students for language learning and cross-cultural understanding. In learning activities, both groups of students were required to complete a topic-related task using a consistent method of asking and replying to questions that were prepared for their partners, deploying communicative language skills and strategies for understanding and expanding their knowledge weekly in an authentic environment.

In addition to learning new communication skills and consolidating learned language, learners also learned a wide range of information about the other culture. During the program, and prior to each session, Australian and Taiwanese students were given the

topic for that week. The researcher then sat with the learners prior to the ICT session and asked them to suggest vocabulary for the topic and use sentences to describe their own involvement in the topic. All learners were able to prepare several questions about the topic for their target language conversation partner prior to the online session. These were collected as 'notes' by the researcher and learners were rewarded with stamps for their efforts in preparing for the sessions.

Rau et al (2008) found that the impact of using instant communicative media such as online forums may increase the pressure on students, as they have to speak in public. Therefore, it was important for learners to prepare before they started to use their target language via synchronous technology, especially learners with very little experience of interactive, real-time communication. In addition, Taiwanese cultural norms require children to be silent rather than to speak in learning environments or with groups of elders. Daly (2009) explains that '...respect for authority, tradition and the prestigious place of education and the unique role of exams in Confucian, especially in Chinese societies, sets up the conditions for transmission and deductive-style teaching, learner responsibility and memorization...' The initial reluctance to speak demonstrated by Taiwanese students reflected a learning style engendered and preferred by their traditional culture. Taiwanese learners gradually moved beyond their conventional learning parameters in the online exchange environment with the support of their teachers and appropriate preparation. On the basis of such preparation, the sessions produced increasingly fluent exchanges. The prepared questions led to more confident exchanges, and in a relatively short period of time, the Taiwanese learners were comfortable in expressing themselves as freely as the Australian learners. In this way, a cross-cultural language exchange program can assist learners to adjust and develop their conventional learning habits. The

stimulation of thought processes among the students can be incorporated into such activities by encouraging students to discuss and to draw pictorial representations of their conversations after each ICT exchange. Students were able to notice aspects of the linguistic characteristics of the target language during this process.

The researcher found that the challenges of this project were not only related to language itself but also embedded in cultural difference, which is understood to broadly affect communication in a second language (Alptekin 1993, Chau 2001, Po-king 2004). For example, Taiwanese students were shocked to learn that Australian students did not have a holiday during Chinese New Year in Australia (see Learning Journal on 2nd May). This reflects a tendency for all cultures to assume that their own norms are universal, and also reflects the more homogenous community of Taiwan (Tseng 2005) in comparison with a multicultural Australian community. Although most of the Australian students' parents were Taiwanese, the thinking and behaviour of these Australian students were more typically Australian than Taiwanese: they were more comfortable in speaking their minds and asking questions than the Taiwanese students from the first day of the ICT program. The Taiwanese pupils were comparatively shy and quiet, and needed their English teacher to stay with them all the time throughout the entire program. This showed that they did not have similar confidence to the Australian students. On the other hand, the Australian teacher had to work to maintain order in the class as her students were keen to talk, outspoken with their opinions and initially impatient with the silences of Taiwanese learners. Data from these observations offer interesting insight into the behaviour of these young Taiwanese and Australian learners in the actual ICT intervention sessions. The Learning Journal provides samples of the interactions, both verbal and nonverbal, between Australian Mandarin learners and Taiwanese English learners, demonstrating

some of the learning processes taking place. The main findings resulting from the observations were that the ICT intervention program developed students' L2 speaking and listening skills, stimulated their motivation for language learning, and developed their collaborative and task-based learning capacities and cross-cultural understanding.

4.3 Interviews

Patton (1990) explains that the aim of the interview is to elicit another person's perspective associated with the research topic. The researcher conducted semi-structured interviews to identify teachers' and parents' attitudes and thoughts about limitations to and potential improvements in language teaching and learning. The interviews were conducted by the researcher in either Mandarin or English according to the first language of the interviewee. The researcher translated and explained the interview questions to teachers and parents in Mandarin in order to promote clear understanding and generate relevant commentary and findings. The interview statements were transcribed and translated from Mandarin into English by the researcher, and the translations were verified by a colleague of the researcher, a teacher of both Mandarin and English.

4.3.1 Interviews with Teachers

The interviews with the Taiwanese and Australian language teachers were important sources of data. However, because the researcher was the Australian students' Mandarin teacher over the period of the research, she interviewed their usual Mandarin teacher, who was not directly involved in the ICT intervention.

Investigating teachers' perceptions of challenges and expectations in relation to teaching a foreign language allowed the researcher to understand if the online exchange program was a suitable and effective complement to the current teaching pedagogy for the students involved.

4.3.1.1 Results: Interviews

One Australian and one Taiwanese language teacher were selected to be interviewed. These experienced language teachers were the regular teachers of the students in the ICT intervention project and assisted the researcher over the period of the ICT program. They had taught language to primary learners for at least three years. Their review of students' language performance provided the researcher with meaningful and significant data to evaluate and analyse the impact of the ICT intervention language project on learner proficiency, particularly on speaking and listening, compared with their pre-intervention proficiency. The teachers were also able to comment on other factors including pedagogy, motivation, cultural norms and cross-cultural learning. A summary of the interviews is presented below. In order to protect the identity of the teachers they are referred to with the following code: ET= English teacher in Taiwan; MT=Mandarin teacher in Australia.

1. How long have you taught English in the primary school?

In answer to question 1, ET said she has taught English over three years. ET also stated that although she confronted many problems, she enjoyed this job, which gave children a new conception of the world. MT explained that she had taught Mandarin to Australian-born, ethnically Taiwanese or Chinese students at Tzu Chi Academy Australia in Croydon for about three years as well. She felt her job was

significant to students who were the second generation of overseas Chinese and Taiwanese migrant families in Australia: she said that she was a 'bridge' to guide students back to the mother language and culture.

2. What theory/methodology do you apply in your language teaching?

In answer to question 2, both teachers adopted the PPP (Present, Practice, and Produce) teaching method, which is a part of the communicative teaching methodology that was developed during the 1960's, 1970's and 1980's and is still popular today. The key feature of the PPP teaching cycle is that grammar presentation comes first, followed by controlled and less controlled practice, and then the actual production of the target language in communicative activities by learners to achieve some task; that is, language in use for a purpose.

ET felt it was necessary for students to drill during the class, as this was the only chance that students had to practise their target language, and most of their parents could not review or practise English with them. She thought the PPP method provided a good process for English learners to produce their target language in a controlled and planned learning environment. MT, who was also from Taiwan, explained that the PPP method was popular with language teachers in Taiwan because it was comprehensive enough to allow teachers to adopt the basic principles of language teaching to achieve maximum success over a limited time. She gave the example that she always started with teaching a grammar point to her students and constructing example sentences. Next, she conducted drill and practice in the pronunciation and intonation of Mandarin for each group. Finally, she required students to engage in free talking activities in Mandarin for about 10 minutes at the end of each class.

3. What strategies do you use in practising speaking and listening?

In answer to question 3, ET said that she usually downloaded teaching material such as phonetics, reading, and songs from *Learn to Read*, an educational web resource, and asked them to practise their speaking and listening in pairs/groups with other students in turns for about ten minutes each class. But she did not allow students to use computers during class, as this made it difficult to keep order. Children typically sat at their desks and repeated words, phrases and sentences after their teacher.

MT said it was difficult for her to use computer resources due to very limited Internet access at school. Therefore, she used the PPP method for speaking skills practice and sometimes played Chinese popular songs for students to listen to. She would play one of the popular songs and write some key words on the blackboard. Next, she would ask her students to repeat after her and to mimic the singer's delivery. In the final stage, students' *show time* – the students would sing the song in their own style and could change some words as they liked. MT said this activity allowed learners to learn new words, sentence structures, and cultural values and norms and forced them to concentrate on listening efficiently in the class.

4. What limitations do you find in the teaching method and strategies you currently use in promoting listening and speaking proficiency for students?

In answer to question 4, ET stated that students dared not speak as they were afraid to make mistakes. She felt that was because students were not able to practise speaking and listening skills in authentic conversations even if they

wanted to. The most significant problem she identified was that no one could practise with the students at home to consolidate their learning because most of their parents did not know English.

On the other hand, MT explained that Australian students felt it was somewhat pointless to learn Chinese, as even though their parents could speak the target language (Mandarin), communicating with their parents in Mandarin was unnatural; as they had established lifelong communicative relationship with parents in English, they experienced a critical lack of motivation to use Mandarin at home.

5. What outcomes do you expect from the children? How do you assess if this is achieved in speaking and listening? Where do they perform most weakly in your assessments?

In answer to question 5, ET said that she hoped students could enhance their speaking and listening skills, which she considered to be crucial for living English. However, she seldom assessed their speaking and listening due to a lack of standard test options or documentation from the MOE. She commented that the students' weakest area of performance was listening to a speech at a natural speed of utterance, and that they could not get used to this in the Cambridge YLE Starters Test. MT expected that students could learn and use their target language efficiently, and she assessed their language learning and development by paper-based tests that included aural material twice per term. Her learners performed most weakly in listening, which she attributed to the students' difficulty in distinguishing the four tones of Chinese.

- 6. What impact if any has the ICT intervention program had on the children's learning outcomes in relation to speaking and listening? (*At this stage in the interview the researcher showed interviewees approximately two minutes of free language production footage for each of the learners in the ICT supported sessions.*)**

In answer to question 6, both ET and MT had positive viewpoints on the project. ET found that the ICT intervention program had stimulated students' active learning, since they had learned from their Australian peers in real-time communications with rapidly decreasing nervousness and increasing confidence within their target language over the Internet. She felt this was a more natural learning context, supporting improved communication skills development. MT explained that her students were very excited to have made new friends from their parents' home cultures online and were willing to learn how to communicate with them in order to maintain and develop this friendship. Such friendships gave the learners a real and immediate purpose to learn Chinese, according to MT.

- 7. What kind of support do you need from parents to improve language learning outcomes?**

In answer to question 7, ET said she needed parents to remind their children to review what they had learned at home, although most parents could not speak English and so were not able to correct or engage with the language. In contrast, MT said that most of her parents were from China or Taiwan, and parents made the effort to use Mandarin at home. However, children still replied in English, as this language was the one to which they had become most accustomed. Therefore, MT designed tasks as homework in Mandarin that had to be completed by parents and students together. Homework tasks, however, were not as authentic or

interesting to students as real-time chat between same-age target language learners.

8. What kind of support do you need from the school to improve language learning outcomes?

In answer to question 8, both teachers agreed that the schools should provide good learning environments for language learners. ET thought that the school should provide a more authentic learning environment through such means as offering regular opportunities for interaction with foreign students. MT stated that the school should provide more technological capacity to create authentic communication and learning environments.

9. What do you think further integration of computers and technology could mean for language learning classrooms?

In answer to question 9, ET said that when she saw the Taiwanese English learners using English to speak with Australian native English speakers, she realized how weak their English conversation skills were. She had thought that after a series of drills and repeated practice, students would be able to utter simple sentences and offer their opinion. As a consequence of witnessing their struggles to speak in target English during the early sessions of the ICT project in particular, ET felt that it was necessary to reform the English teaching methodology used conventionally at her school. MT felt that ICT integration was a powerful strategy, supporting improved language learning. She explained that students were more willing to use their target language in class after the ICT intervention project, which was an important learning outcome in itself.

10. What formats of computer integration might be valuable?

In answer to question 10, both teachers had similar feelings about the value of the ICT intervention project. ET stated that the ICT technology provided a platform that helped students use their target language with purpose. ET said that this computer integration provided Taiwanese students with a wonderful opportunity to make foreign friends and use their target language to do this. She explained that many Taiwanese learners frequently dared not speak a simple sentence even after they had learned English for five years. MT said that it was valuable to expose students to a rich and interactive language learning context, and that the combination of ICT and language learning could enhance children's learning motivation. She felt her students liked to communicate and make friends with Taiwanese children using Mandarin. She suggested that the strong impulse to make friends was due to their similar ages, interests, and hobbies, which made the process of conversation much more authentic.

4.3.1.2 Discussion and Analysis of Interviews with Teachers

A. Interviews with Language Teachers

The interview questions for teachers were designed to investigate their experiences of the current language learning environment and its limitations as well as evaluate the impact of the ICT intervention program. Interview questions 1~3 aimed to elicit information about the language teaching pedagogy that language teachers ordinarily applied. Both teachers had experience in teaching of at least two or three years, and they both adopted the PPP (Present, Practice, and Produce) teaching method in their class. The objective of the PPP teaching method is to guide students to freely produce the target language they have learned through reading, listening, writing and drilling.

However, the effectiveness of such an approach when all learners share the same first language was very limited, as all learners were in a highly ‘artificial’ speaking and listening environment (classroom) and further practice and production out of class was not possible. ET thought that the advantage of the PPP method was that it provided a good process for students to learn in a controlled and planned learning environment and suited the short periods of instruction available. Similarly, MT pointed out that the PPP model was comprehensive enough to allow teachers to implement the principles to reach efficient outcomes during a limited period of time.

However, the Eclectic Approach, which emphasises the realisation of student needs and the importance of communication in the target language over the merits of a single approach or method of language teaching, could be deployed in this scenario to expand the pedagogical options of teachers and experiences of learners, including ICT supported learning activity. It may be beneficial for education departments in countries that teach foreign languages to consider recommending the Eclectic method of teaching a foreign language and exploring the potential for ICT integrated learner exchange, rather than privileging a single methodology which is not always the most suitable approach for all contexts and objectives.

Teachers tended to prepare their teaching material from Internet sources because they could offer more options for obtaining authentic information, activity sources, and modes of instruction than traditional sources. This aligns with Delfino & Dettori’s (2009) argument that ICT tools can enhance educational environments by providing teaching materials and extending pedagogical options and learning outcomes in the language classroom. For example, teachers can use the *Learn to Read* website to teach students how to pronounce English vocabulary correctly by reading stories. This

website provides various resources, from phonetics, vocabulary, and songs to sentences and articles. *e4kids* is another popular website, which provides stories, songs, games, and assessments for language teachers to utilise. Although teachers in this study accessed a range of activities and resources from the web, they had not deployed ICT real-time communication resources to support cross-linguistic conversation, as was performed in this study.

In answer to Interview Question 4 regarding limitations for learners, both teachers reported that they had experienced the same problem in motivating learners: they felt learners required an authentic environment and appropriate conversational peer to activate their motivation. This confirms that while the computer can never replace a human learner or interlocutor, it can serve language learning by providing communicative platforms on which language learners can interact.

Despite the strong potential for ICT technology to improve language learning, the researcher and her supervisor were unable to generate interest and commitment from government schools in this research study; school principals mostly declared their schools to be 'too busy'. Therefore, the researcher turned to working with private language schools, which proved to be more willing to try a new teaching method in their language classroom. As the majority of students studying languages across the world are in public school systems, this was a disappointment to the researcher and suggests that public schools are not as open to change and innovation as private schools. As not all families can afford private school education, this may suggest a lack of opportunity to explore learning options for public school populations and perhaps warrants further study as an issue itself.

For item 5, both teachers described learner limitations in listening, but these involved different sub-skills or micro-skills in listening. The Taiwanese teacher stated that the speed of natural language utterance meant that her students could not keep up and respond in time, since they had not become attuned a natural pace of speech due to a lack of opportunity. On the other hand, the Australian teacher identified the difficulty for her students of recognising the four tones of Mandarin the pivotal listening issue. It was pleasing to note that the distinct listening challenges of the different groups were both mitigated during this research project through the task-structured, repeated and collaborative features of the ICT program.

Both language teachers had similar viewpoints on Question 6. The Taiwanese teacher felt that the ICT intervention program had strengthened learner motivation and generated successful collaborative learning, particularly in listening naturally. Little (1995) points out that when students take responsibility for their learning, their learning targets are likely to be achieved and their motivation to be maintained and even increased. These students made commitments to each other to meet and prepare for conversations on a regular basis and were responsible to each other to ensure that these conversations took place and were effective.

Pintrich & Schunk (1996) identified five key factors that affect motivation to learn as: intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, and self-efficacy for learning (see Figure 6 in Chapter 2). The ICT intervention program stimulated learner motivation across several of these categories. For example, it contributed to the attainment of extrinsic goals, such as improved grades for language, as well as control of learning beliefs in adapting to a changed learning environment and cross-cultural norms. Pintrich & Schunk's (1996) Learning

Motivation Model suggests that seeking to increase motivation based on learners' inner requirements for learning (intrinsic goal orientation), such as by creating communicative scenarios that stimulate a learner's desire or willingness to communicate, can profoundly influence learning. This research project has provided and supported opportunities for stimulating communication between Australian and Taiwanese peer-learners who gained clear motivational enhancement across a range of factors from their participation.

Interview Questions 7~8 were designed to identify the differences between the expectations of the language teachers, parents, and schools. According to both teachers, it was critical to work to create authentic learning environments and experiences for students both at school and at home. ET pointed out most Taiwanese parents could not correct or engage with their children's language learning because of their lack of English ability. On the other hand, MT said Australian parents would like to assist their children to practise at home, but children were not interested in practicing their target language with their parents. In answer to Question 8, both language teachers expected the schools should provide an authentic environment that brought ICT and *real* people into language learning contexts. Clearly, teachers would welcome opportunity and resources to allow them to incorporate ICT supported language exchange regularly into their classes.

Finally, Question 9~10 sought to assess how the ICT integration program impacted on language teachers. ET discovered how weak her students' English conversation skills were after the exchange project and came to the opinion that the traditional teaching methods were not adequate for her learners. MT also strongly supported ICT integration in language learning. Both teachers agreed that the ICT technology

provided a platform that helped expose students to an advantageous, stimulating and interactive language learning environment. They also found that ICT integration into language teaching allowed students to achieve ‘efficient learning’ – primary learning (language), secondary learning (computer technology), and supplementary learning (culture) at the same time.

B. Teacher Evaluation of Learners’ Performance within ICT Project

The language learning evaluation sheet (see Figure 17) was designed for the Taiwanese teacher to complete in order to assess recorded performances of her students using ICT to practise English language as outlined in the language curricula from the MOE in Taiwan. The purpose of this language learning evaluation sheet was to allow the teacher and researcher to better measure the learning outcomes of the intervention and specifically assess how the project aided student conversation skills. Therefore, the language learning evaluation sheet provided a further source of evaluative data to identify the outcomes of the ICT intervention program as a language teaching pedagogy. Evaluative criteria included in this sheet were identified in consultation with teachers in the project as well as through a review of common speaking and listening assessment tools used for this age group of language learners. The ten items are grouped into three categories of task achievement: listening and speaking comprehension (items 1 to 6); collaborative learning (items 7 and 8); and cultural sensitivity (items 9 to 10).

Figure 17 shows the teachers’ ranking of their students after watching the recordings of their interactions on ICT (Taiwanese students’ names are coded here as letters of the English alphabet to protect the identity of students). The Taiwanese teacher

viewed footage of selected students who took part in the exchange program and completed the criteria sheet for each student on 7th August 2010. She had to view the footage repeatedly to focus on one student at a time.

The data from the Term Tests (Figure 15), which ranked performance of listening and speaking comprehension, generated data intended to measure language learning outcomes. The researcher compared this data with data from the language learning evaluation sheet (Figure 17). From the sheet (Figure 17), it is evident that students A and B and C achieve the highest speaking and listening grades as a consequence of this evaluation of proficiency by the teacher. In order to assess whether the ICT program actually changed proficiency for any of these individual learners, the research accessed prior test results recorded over ordinary classes (Figure 16) by the teacher in Taiwan to compare the achievements of the 6 students. Student C, who was tested as one of the weakest students on listening in the regular class tests, was able to achieve strong outcomes for listening after the ICT program as measured by the teacher evaluation sheet. Such gaps between student achievements in speaking and listening between term tests and post-intervention evaluations are further discussed below. See the table below (Figure 16) for a summary of student rankings from these regular class test results.

Figure 16: Summary of Performance on Term Tests

	Student Achievement				
Language skills	Excellent (9-10)	Good (7-8)	OK (5-6)	Unsatisfactory (3-4)	Poor (1-2)
Listening		ABEF	CD		
Speaking	A	BCDEF			

Figure 17: Language Learning Evaluation Sheet

Language & Cultural Development <i>0-2: Poor; 3-4: Unsatisfactory; 5-6: O.K.; 7-8: Good; 9-10: Excellent;</i> Has the student:	Student Achievement				
	Excellent (9-10)	Good (7-8)	O.K. (5-6)	Unsatisfactory (3-4)	Poor (1-2)
1. distinguished between sounds?		ABC	D	EF	
2. understood or constructed the simple sentences?	AC	B	DEF		
3. understood short questions, statements, and conversations?	C	AB	DEF		
4. figured out speaker's intention?		AC	BDF	E	
5. pronounced vocabulary correctly?	A	C	BF	DE	
6. spoke in grammatically correct sentences?		AC	BF	DE	
7. replied to questions with syntactic accuracy?		C	ABF	DE	
8. expressed opinion effectively?			ACF	BDE	
9. learned about new culture?		AF	BCDE		
10. tolerated cultural difference?	AB	CEF	D		

C. Result of Tests ---Listening and Speaking

Measurements of students' performance by the Cambridge pre- and post-tests, the class term tests, and the teacher evaluation sheet results yielded significantly different results. All the students received above-satisfactory scores for speaking and listening in the term tests, but when teachers graded them in a real-time, linguistically complex environment, they identified much more problematic outcomes. Cambridge pre- and post-tests also produced weaker results for speaking and listening skills of these students compared to term tests. As discussed earlier, this could be because of the limitations of the kind of tests that were being used in classes, teacher class-test marking practises (e.g. policies that mandate that all students should pass), and teacher unfamiliarity with real time assessment. In the Cambridge pre-test, most students were in fact measured as unsatisfactory in listening, but progressed to good-to-excellent scores in the post-test. Generally, students were able to perform better in paper-based tests than in real-time communication evaluations, which may reflect a degree of 'test expertise' developed in the children from their comprehensive test-taking experience. In the teacher evaluation of ICT, *accuracy* seems to be the weakest point, which is to be expected in a fluency-focused context. Teacher grading still appears to be stricter than the grading in the class tests. This result may reflect the fact that tests are limited in both the level of detail they provide about performance as well as their ability to make accurate measures of communicative skills.

Analysis of data across tests and ICT evaluations indicates that some students maintained their ranking, such as students A and B, who scored similarly high outcomes across all assessments. However, student C achieved a dramatic improvement in listening scores in the ICT evaluation result compared to his

classmates. On the other hand, student D demonstrated little change in listening skills, with a decline in speaking skills from good to unsatisfactory. Students E and F scored lower in speaking and listening skills in the ICT evaluation than they did in the class test and the Cambridge post-test. This could be because class results were derived from paper-based tests which did not require students to speak or to listen to authentic English in the test. It is evident from a comparison of class test results with Cambridge pre-ICT test results, that the teacher's assessment of speaking and listening skills had been significantly inflated. The class tests appear to be generating reports on speaking and listening that are not supported by other, more authentic tests. However, the teacher evaluation of ICT performance is also inconsistent with the Cambridge test results. The grades of student E (see figure 14 and figure 17), for example, improved on his post-test, but his rank in the teacher evaluation of ICT performance was still low. This anomaly is difficult to explain, other than to argue that some Taiwanese students are expert at paper-based testing as a consequence of the large number of tests they sit for as language students. Furthermore, Taiwanese English teachers have no experience in evaluating language learner performance in real-time, communicative environments, which may also affect the validity of results.

Hedge (2000) argues that the main factors affecting speaking skills include knowledge of vocabulary, spelling, pronunciation, sentence structure, grammatical structure, and linguistic semantics. Questions 5~8 were designed to elicit assessments of the students' speaking proficiency. Question 5, 6, and 7 concern speaking skills but also focus on accuracy rather than fluency, and question 8 concerns fluency as well as willingness and comprehensibility. Questions 1-4 are input-focused, while questions 5-8 concern *output* competencies from the level of vocabulary to the level of sentences. The results of Question 4 showed that it was difficult for Taiwanese

students to understand other people's intentions in speaking, which is likely a consequence of non-exposure to native speaker utterances. Output competence is developed by regular and active communication (Brown 2000). There remains a clear difference between the advances in listening skills compared to speaking skills for learners across the various assessments. However, students D and E, in particular, experienced problems in speaking according to the post-ICT teacher evaluation. As their problem was not apparent in the term tests, these kinds of real-time assessments can assist in providing diagnostic data that enable teachers to customize language learning for individual learners according to individual performance. On the other hand, the poor speaking performance of these students in the teacher evaluation could reflect their unpreparedness for such real-time testing environments, and it is also possible that lack of willingness to speak during the ICT project, perhaps as a result of shyness or reserve, influenced the grade awarded by teachers.

From the results of observation, the interviews with teachers and the language learning evaluation sheet questions, the following conclusions may be drawn: (1) students gained confidence in L2 learning after the ICT intervention project; (2) regular opportunity for real-time conversations with native speakers can significantly and quickly enhance listening comprehension; (3) opportunity for such conversational practice can also generally increase learners' willingness to speak and fluency, although errors in vocabulary or grammar may remain. The limited usefulness of term tests in their current format needs to be addressed. Tests of English ability should not be limited to grammar and vocabulary tests, which are the main form of testing adopted in public schools. Due to the fact that conventional English language tests used to assess student achievement in listening and speaking in the language classroom are not calibrated to real-time communication contexts, it is difficult to

determine the achievements of the learners in this study in these terms.

Nevertheless, it appears that creating a communicative learning context for students to practise in a second language either at school or at home can effectively enhance fluency in speaking and listening.

D. Collaborative Learning and Cultural Exchange

Study Guides and Strategies (2011) suggests that the team process involved in cooperative or collaborative learning encourages members to support and depend on each other to achieve a task or goal. Accordingly, it is important to develop team-building skills in the classroom that students will practise later in their life. Learner collaboration occurred at two levels in this project: Taiwanese learner collaboration in preparing for conversations with their Australian colleagues, and Taiwanese-Australian learner collaboration in rehearsing learned language to achieve communicative outcomes. Paired conversations assisted in terms of confidence and sustaining conversation. For example, forgotten vocabulary could be suggested and errors corrected by a same-culture classmates. This provided security for learners because they were not required to converse in a second language without the support of a same-language peer. The cross-cultural collaboration was also helpful: for example, incorrect pronunciation and expression was corrected by foreign peers during their conversation in a natural manner.

Analysis of responses to Questions 7 and 8 from the collaborative learning perspective yields significant results. The process of ICT conversation, in which a single group of Taiwanese students communicated with a single group of Australian students, also provided significant data for such an analysis. For example, as recorded

in the Learning Journal on 16th May 2010, both Australian and Taiwanese students learnt about not only time differences but also season differences between Australia and Taiwan. On occasions, learners were able to provide other learners with clarifications regarding language uncertainties during their conversation, such as the correct expression to use, and to provide new information about culture, climate, time zones and so forth. In this way, collaborations were able to stimulate both linguistic learning and general knowledge learning. Students from different countries (Australian-based Mandarin learners and Taiwanese-based English learners) attempted to understand each other and express meaning using verbal and non-verbal codes to accomplish weekly task goals.

Responses to Question 8 indicate that students had difficulty expressing their opinions appropriately as a consequence of factors that probably included insufficient development of vocabulary, cross-cultural knowledge, and self-confidence within their current language curriculum. However, responses to Question 7 showed that feedback from peer learners was effective in improving grammatical accuracy, which suggests that peer-learning or collaborative learning can decrease nervousness and lead students to assist each other spontaneously, as Johnson & Johnson (1999) found in their study of collaborative learning in language classrooms. For many students, their peers' responses may provide added incentive for them to reply, strengthening their sense of the need to participate. From the process of collaborative learning, students not only improved their language skills but also gained knowledge of cultural difference, social relationships, and team work. Thus, it appears that the ICT intervention allowed students to naturally learn their L2 without pressure or anxiety.

Responses to Questions 9 and 10 illustrate the potential for cultural learning within a

language exchange project. Students demonstrated their understanding, tolerance, and appreciation of a different culture in teacher grading of question 9. When students first met through the ICT intervention project (see Learning Journal on 25th April, 2010), Taiwanese students displayed shyness and silence because of the influence of the Confucian tradition that requires students to remain silent and obedient to their teachers in class (Samovar et al. 2007). This was strange for Australian students educated within Western culture. However, willingness to communicate with foreign partners was a starting point for sharing different cultural ideas and experiences.

Results for questions 10 indicate that Taiwanese students appreciated the different culture of Australian students and were willing to try to understand their foreign peers. This may well have been the result of the preparation for the intervention, in which teachers introduced the concept of cross-cultural difference. Lustig & Koester (2006) emphasise that teachers and administrators can effectively encourage intercultural competence in educational context. Although language learners may experience elements of cultural shock during their first ICT meeting, it appears that they can soon adjust by developing an understanding of the culture of their ICT partners. The cross-cultural communication in the ICT intervention created a link between language learning and collaborative learning, and cultural learning and the exchange of experiences between students.

The language learning evaluation sheet (see Figure 17) sought to assess a range of aspects of effective communication including linguistic learning (speaking and listening competency in terms of accuracy) and conversational skills in terms of fluency and cultural understanding, which are the key components of *real* conversations.

4.3.2 Interviews with Parents

4.3.2.1 Results: Interviews

Semi-structured interviews with the parents of the three Taiwanese children who participated in this research generated data concerning the children's learning contexts and limitations at home. The interviews were conducted in Mandarin, but the results are presented here in translation. The interviews are reported below with the following code: I= interviewer; P1= Parent 1; P2= Parent 2; P3= Parent 3.

1. I: What outcome do you expect for your children from their language instruction?

In answer to question 1, P1 said she hoped her child would be able to read English and conduct a conversation in English. She explained that this was important for her child's future, whether she went on to study further or used the language in a job in Taiwan. Similarly, P2 said she expected her child would be able to communicate with foreigners some day while doing business, taking a trip, or studying abroad. She regarded English as a key international language that could provide her two children with further social status and opportunities for advancement. P3 stated that she hoped her daughter could eventually speak English as fluently as her first language, as she believed English would be increasingly important in Taiwan.

2. I: How do you measure this?

In answer to question 2, P1 said that she did not know English at all, so she frequently asked her child about what he had learned at school, and also asked the school teacher about her son's learning performance. P2 said that she measured her two children's learning outcomes by reviewing their report card and

communication books (a daily record of comments on students' performance at school filled in by both teachers and parents). P3 said that although she knew little English, she still asked her child to read her textbook aloud at home. She thought it was important to encourage her child to read or speak in English; even some vocabulary was good at home. For example, she asked her child to read the textbook that she learned from day school. P3 also reviewed her test score report card at school, which she said indicated the weakness of her child's learning outcomes.

3. I: Why did you select this school?

In answer to question 3, P1 said her friend introduced her to this language school. She was glad that an English class was available because she was unable to teach her child English herself, and was satisfied with the class because it seemed to improve her child's English scores at her primary school. P2 said that it was convenient for her to pick up her children at the school, and, like P1, could not teach them at home. She decided to send them to this language school to provide them with an extra opportunity to practise their English. Similarly, P3 said the school was close to her house, and she liked her child to practise much more English than was possible at her primary school.

4. I: How do you judge the current language teaching situation? What kind of support do your children need from school to improve their language learning?

In answer to question 4, P1 said she had no idea about the current language teaching situation as it was fickle and the curriculum was highly changeable. What she could learn was derived from reviewing her child's report card and the

Taiwanese-English communication books used for class. She thought the school should teach 'living English'. P2 also said that she did not know the current best practice in language teaching and learning, and what she wanted was to ensure that her children were not left behind at the beginning of their second language learning. She thought the school should provide a more authentic learning environment such as what was made available in the ICT program, where her children had real partners to communicate with in English. P3 also felt it was difficult for her to evaluate the current English teaching situation because the language curriculum policy seemed to change all the time. She pointed out that a lack of interactive practice with native speaker peers was a key limitation of both public day school and language school.

5. I: Have there been problems or disappointments from your children's language learning experience?

In answer to question 5, P1 said that her child did not dare to speak in front of the class because she was afraid of using incorrect grammar, and this made her feel frustrated about learning to speak. P2 thought the main difficulty was reciting and memorising vocabulary. The children, according to P2, had difficulty mastering the phonetic symbols used to indicate English pronunciation, and even though they tried hard to memorise the vocabulary, they still forgot easily. P3 said her child also did not dare to speak in English for fear of using the wrong pronunciation and being laughed at by other students. She felt annoyed by this situation, and she hoped her child could receive more opportunity to practise with native speakers who had correct pronunciation.

6. I: What do you expect from language teachers at school?

In answer to question 6, P1 expected English teachers to teach the skills of communication and living English. She thought this kind of instruction could assist her child enjoy using English in daily life. P2 hoped the school could add more English classes so that students could learn phonetic symbols and get more opportunity for conversational practice. She thought that such knowledge and practice was essential so that children could remember vocabulary, which she felt was a very different process from that of learning Chinese characters. P3 thought that the teacher should teach children living English in daily life rather than always train them to memorise vocabulary. She believed that designing lessons which encouraged children to speak was a priority.

7. I: What would you like to see change in the teaching of English at the school?

In answer to question 7, P1 said she hoped that the school could regularly incorporate ICT- or IT-supported language exchange into English teaching, as she found that it worked to increase her two children's interest in English learning even after school. Similarly, P2 hoped that the school could find a way to engage English native speaker peers, as this project did, to speak with Taiwanese learners. P3 said that the teacher should also teach the children more about cultural events and traditions such as Christmas, Easter, and Halloween. Knowledge of these cultural events enriched their learning experience and enhanced learning motivation.

8. I: Is your child willing to use their target language at home?

In answer to question 8, P1 said her child tried to speak English at home, but she had no idea if it was correct or wrong. However, P2 said her children did not

speak or practise English at home. She explained they felt it was useless to use it at home because she did not understand what they were saying anyway. P3 said that her child was willing to say a few words that they had learned from school at home.

9. I: In what ways do you think your child's language learning has changed as a result of participating in the ICT enhanced learning project?

In answer to question 9, P1 thought her child learned English with far less anxiety than previously, and he tried to speak in front of the family with much greater confidence. She was happy to see this changing attitude to using English and said that was a great encouragement for her. P2 said that her children did not feel shy about speaking to foreign friends over instant message technology, and that she was very pleased with this. She thought they gained much more confidence in learning the language by participating in the ICT intervention project. Interestingly, P3 said her child did not 'hate English' any more, and she appeared to be much more confident using English than before.

4.3.2.2 Discussion and Analysis of Interviews with Parents

The interviews with parents provided a great deal of positive feedback about the ICT intervention program and its impact, particularly in terms of positive effects on learners' confidence. The first two questions elicited the parents' strong expectation that the English school lessons would ensure that their children could use the target language for real communication, or 'Shenghuo Yingu' - 'living English' - as they tended to explain it. Huang (2011) identified that 'living English', such as using English terms regularly in daily life and across the curriculum, is an effective method

of consolidating learned teaching material. Using the language, or elements of the language, across broad-ranging and authentic contexts is important for teachers and learners. She also argued that students' life experience should constitute the basic background knowledge for learning language, and teachers should create and provide a relevant learning context which is practical and useful for students at their specific stage in life and which improves students' motivation to learn and use a second language.

However, in the context of the current passive learning model of Taiwanese schools, children are reluctant to use the target language, and so parents are able to measure their children's learning outcomes only by reviewing the child's report card. This cannot measure authentic or meaningful listening and speaking outcomes for *real* communicative practice. Although one of the parents contacted the teacher to monitor what her child learned at school, they were still not confident in measuring the learning outcomes.

Answers to question 3 indicated that parents chose the language school by random selection or on the basis of convenience rather than teaching quality or learning outcomes. Two parents explained that they expected that this language school provided the children with extra time to practise their target language. As they could not help their children to use or practise a second language at home, the language school seems to operate as something of a substitute. These parents did not expect new language to be learned so much as for learned language to be consolidated and fluency to be developed. However, this was not the focus of language lessons, which were dominated by vocabulary exercises and drilling with limited practice opportunity undertaken with other speakers of Mandarin. Clearly, there is a disconnection between

the expectations of parents and the capacity or willingness of language schools to deliver on these expectations.

The answers to Question 4 reflected the confusion and changeability of current language curricula in the Taiwanese English language schools. The Taiwan MOE regularly amends the English language curriculum and pedagogy (Chang 2009), and the cram school industry and parents try to keep up with these constant changes by asking their children to pass more and more tests. The answers to this question also highlighted the parents' expectation of an authentic and communicative learning environment. Most Taiwanese parents have no ability to assist their children develop their English language learned from day school, so those who can afford it chose to enrol their children in private cram language schools such as the school involved in this study. Delfino & Dettori (2009) point out that ICT integration can not only enrich educational contexts but also be deployed for the assessment of achievement of language proficiency and fluency, both in the school and outside the school, allowing parents to be informed of their children's abilities. If language schools can make the effort to set up language practice relationships supported by ICT, recordings of these sessions can provide much richer feedback to both teachers and parents. As many parents do not have the bilingual skills to assess their child's competence anyway, this observation of their child engaged in real conversation could vastly improve their capacity to judge their child's second language achievements.

This is a very important and disempowering point for paying parent customers of language schools. They are not linguistically capable of assessing the learning outcomes for which they are paying. However, if they could observe their child in conversation with another L2 speaker, or receive reports from their children about

these conversations in their L1, it would ensure that parents could more meaningfully monitor their child's language gains in a second language they were not themselves competent in (Chang 2009).

In answer to Questions 5 and 6, parents displayed a tendency to value the traditional method of learning grammar and memorization of vocabulary in learning English. On the other hand, one of them also pointed out losses in confidence as a consequence of mispronunciation or errors made in front of peers was a significant factor limiting students' learning. This observation highlights the importance of building confidence by using the language in collaborative learning to encourage learners to gain conversational skills and fluency. This observation indicates a need for teachers to establish a supportive and non-threatening, mistake-friendly learning environment for children studying a foreign language which a collaborative learning model can assist provide.

In response to Question 6, Taiwanese parents reported that the skills of communication and living English were important to their children so that they would be able to use their target language in daily life. However, one of the parents argued that phonetic symbols should be taught in primary school, as her child did not how to memorise vocabulary. Indeed, without the opportunity to listen to and talk with native speakers of English, knowledge of the phonetic alphabet is the only way learners can understand pronunciation from paper-based learning. However, for young children already learning a new alphabet, an *additional* alphabet (phonetics) is an additional cognitive burden. Similarly, Australian learners of Mandarin have to distinguish tonal utterance from paper-based instruction. For both groups of students, the opportunity to practise listening and speaking with target language native speakers provides

invaluable opportunity for them to learn such complex skills in engaging and realistic environments.

The answers to Question 7 underlined the need for reform of language teaching methods. Parents were enthusiastically supportive of ICT integration in language classrooms because it provided them the chance to evaluate what the technology could do to improve their children's proficiency. One parent emphasised the importance of cross-cultural teaching and learning within language learning, echoing the conclusions of Stempleski (2000), who also held that cultural understanding in communicative language teaching was essential for learners to develop true communicative competence.

Answers to Question 8 and 9 illustrated the different learning behaviour displayed by students before and after the exchange program. In answering question 8, parents indicated that they could not follow what their children had learned from school and that the children were seldom willing to use target language at home. This situation results from a lack of authentic options for communicating and practising their target second language in a monolingual home environment. In answer to Question 9, parents strongly agreed that their children had gained positive outcomes in relation to learning and speaking English as a result of their participation in the ICT language program. This demonstrated that students' learning motivation and attitudes had changed. In addition, parents mentioned that their children gained confidence in using English at home. Thus, these responses suggest that the students demonstrated enhanced learning motivation and changed attitudes to learning English as a consequence of their ICT-supported cross-cultural communication.

Clearly, parents were pleased with the impact that the ICT intervention program had had on their children's attitude to English and their confidence in using the language. Participation in this program raised the awareness teachers and parents of the limitations of current approaches to second language teaching and learning and the potential for ICT enhanced language instruction to address these limitations.

4.4 Conclusion

This research implemented and investigated an ICT-supported language learning tool with a small sample of Taiwanese child learners, their teachers and their parents. Results from observations of these interactions recorded in a learning journal and from semi-structured interviews with teachers and parents indicate that the ICT-supported intervention was conducive to improved learner motivation and attitudes and to enhanced speaking and listening skills, with listening skills demonstrating a particularly dramatic improvement. ICT-supported language learning also has potential to generate cross-cultural learning and improve the assessment of learning, but requires the commitment of schools and teachers in organizing the technology and establishing cross-cultural learner groups and activities so that such rich language learning experiences are available to children studying a second language in foreign language environments. The next chapter, the conclusion of this thesis, will summarise the results of this study, probe its limitations, and make suggestions for further study.

Chapter Five: Conclusion

In Chapter Four, the diverse data collected as evidence of the impact of the ICT intervention program were analyzed and evaluated in terms of how they addressed the research questions. This study investigated interactions between Australian and Taiwanese second language learners participating in an ICT supported language exchange program aligned to their formal language curriculum. The main objective of this ICT intervention was to enhance the speaking and listening skills of Taiwanese learners of English as a foreign language, who typically have little or no opportunity to practise conversational English in authentic contexts. As a consequence of this lack of opportunity, Taiwanese child learners of English lack confidence and skills in speaking and listening to English, so the ICT intervention program also aimed to improve learner confidence and motivation to use English in conversation through collaborative, task-based learning sessions with same-age learners of Mandarin in Australia. In this chapter, the major findings of the research are reviewed and conclusions drawn for the foreign and second language learning and teaching community. In addition, this chapter discusses the recommendations and limitations of the study and makes suggestions for further research into technological means of promoting effective foreign language learning for school children in varying cultural contexts.

5.1 Major Findings of the Case Study

The results supported the hypothesis that the integration of ICT, collaborative learning, and TBL into the language learning classroom is a useful strategy in foreign/second language learning environments. That is, this ICT language exchange

project, with a theorized pedagogical framework incorporating motivation theory and Krashen's (1987) five hypotheses regarding language learning, was open-ended in nature and scope, supported high levels of learner autonomy, and stimulated learner motivation and cultural exchange.

In this language exchange project, students held natural conversations with each other via instant messaging technology in an authentic and friendly learning environment where they used and practised their target language without anxiety or pressure. When students started their L2 study, the purpose was to enable communication, in accordance with Krashen's SLA theory. ICT technology, such as Skype, MSN, or Yahoo instant messaging can be used to connect learners of aligned target languages for real-time communication and this was achieved in this research project. If learners cannot use language in authentic contexts for personal interests or goals, they have little motivation to learn (Chen 2002; Taguchi 2006). Therefore, motivation theory was another important aspect of this project and the outcomes of the intervention identified in this research are strongly linked to positive changes in learner motivation.

There are two dimensions to the theory of motivation adopted for this study: instrumental orientation and integrative orientation. Instrumental orientation refers to motivation for learning a language in which the purpose of doing so is to achieve external goals such as getting a better job or better school grades. In contrast, integrative orientation indicates a motivation in which the purpose of learning a language is to enrich one's personal capacity to experience and interact with the culture associated with the language. In the analysis of the results of this research project, the learning motivation model of interrelated factors affecting motivation

developed by Prinrich & Schunk (1996) was used to analyse and evaluate the impact of this project on students' motivation. Students in this case study enhanced their integrative orientation through TBL with peers, supporting each other to express and complete conversations in class. The language exchange project stimulated not only their motivation, but also their confidence in language and knowledge exchange activities. The language exchange experiences also improved the students' confidence in taking language tests and they were able to improve their test results in a pre- and post-test instrument but the integrative motivation provided by their communicative experiences online was far more powerful than instrumental motivation factors such as test results.

In this project, ICT intervention enabled Australian and Taiwanese learners to engage in synchronous practice using Yahoo Messenger to provide 'real time' communication. Although students were in different countries, they were still able to communicate with each other spontaneously. The students also learned the concept of time zone and international geography. The students thus immersed in a second language environment thought that Yahoo Messenger enhanced their skills of interaction and cooperation through speaking and listening in the target language. Collaborative learning stimulated students' motivation and enabled students to assist each other and establish strong friendships. The students' positive response to the use of ICT in the classroom indicates that peer learning and collaborative learning can decrease nervousness and encourage students to assist each other in online environments (Johnson & Johnson 1999). For some students, the responses from their peers provided added incentive for them to reply. As a result, nearly all students showed great willingness to participate. From the process of collaborative learning, students gained not only enhanced language learning but also knowledge of culture,

social relationships, and team work in the collaborative learning context. In summary, it appeared that students participating in this case study naturally learned to use their L2 without pressure or anxiety.

TBL was a key element of this project, informing the design of practice sessions. The implementation of second-language-based instant message learning activities as task-based learning and collaborative exercises provides a number of instructional advantages over individual exercises. TBL in this project required groups of students to achieve a weekly target task. One such task involved preparation for discussion of a weekly topic assigned by the researcher. They prepared questions relevant to the topic to ask their foreign peers in their target language, which was a challenge for them.

After the ICT project, the researcher found that both Australian students and Taiwanese students learned how to think independently, take notes, preview the lesson, and learn by doing. The outcomes are thus not restricted to L2 learning but also include the development of learning skills that enhance students' knowledge acquisition and provide an efficient learning model for their future education.

Cross-cultural theory is another important consideration. Children learned much about each others' culture during the project and developed a basic understanding of and tolerance of difference.

5.1.1 Observation of ICT Intervention Project by Learning Journal

Celce-Murcia (2001) argues that children's learning of listening and speaking skills in L2 should develop through activities that allow them to learn from each other and interact with peers. This ICT-integrated project successfully created authentic course environments that are more interactive and conducive to students' learning and

enhancement of language skills, particularly speaking and listening. In order to listen clearly and respond to each other, students prepared carefully for the ICT sessions, taking notes based on the syllabus before the project. This demonstrates that students had developed self-directed learning skills and motivation as a natural result of authentic communication opportunities. They enjoyed talking with their peers in their target language, especially the Taiwanese students, who were encouraged to talk in class. This experience was unique to Taiwanese learners, who are usually required to remain silent in class even they are learning a language. This shows that ICT as a learning tool influenced the students' language motivation in terms of type and intensity by providing them an interface to use and practise their target language in an authentic context. Taiwanese students responded to this new opportunity to 'converse as learning' with enthusiasm and were able to realize genuine improvements in their listening and speaking abilities and confidence. This has implications for conventional Taiwanese language classrooms that discourage conversations and do not seek to provide opportunity for authentic practice. How schools seek to embed the technological tools that facilitate such practice and make the cross-cultural connections required presents a challenge that the Taiwanese language teaching industry needs to address.

Cross-cultural relationships were established in a relaxed atmosphere during students' conversations using their target language. They gained an improved understanding of cultural difference and developed tolerance for uncertainty and difference as they worked with imperfect language tools in a new communicative environment discussing topics which were differently experienced or enacted between Taiwan and Australia. This outcome constitutes a positive answer to research question 4 (on page 27 of Chapter One). The use of web-based ICT integration and collaborative learning

as key elements in this project established social networks which learners had the option to continue after the course ended as a consequence of sharing email contacts enabling learners to continue to develop their language skills in a self-directed manner.

5.1.2 Language Proficiency Test Results

There is no adequate English listening and speaking test for young learners available in Taiwanese schools; hence, the researcher implemented YLE tests (Cambridge Young Learners' English Tests) as a measurement tool. YLE tests measure students' comprehension and production skills in English (Figure 14). The scores in the pre-test (conducted prior to the ICT program) were very low, particularly in listening comprehension. This indicates that current teaching methods and pedagogy promoting English conversation skills in the school curricula need to be improved and also that tests currently deployed in schools to measure listening and speaking are dysfunctional as they are tests that actually require reading and writing rather than speaking or listening for meaning. Learners were able to score strongly in these standard classroom tests of listening and speaking even though they could not use English to communicate in conversational contexts. After twelve weeks of the ICT intervention project, a dramatic improvement in speaking and listening skills was revealed by the post-test. Students exhibited a particularly dramatic improvement in the results of their listening tests.

This finding conforms with the predictions of theories discussed in Chapter Two, such as Krashen's (1987) SLA hypotheses and the Learning Motivation Model. It also demonstrates the successful achievement of the research aims of developing

alternative strategies incorporating new technologies so that primary school language students would achieve improved learning outcomes in primary school contexts. It provided a positive answer to research question 1 (on page 27), in that the ICT learning program did contribute to the improvement of the listening and speaking skills of language learners in a way that could be incorporated into school curricula in Taiwan and Australia.

5.1.3 Interviews with Language Teachers

Interviews with language teachers indicated that there is little support for development and innovation in relation to new teaching methods, enhanced classroom environments and technological tools in private and public language schools in Taiwan. During interviews with teachers, the ubiquity of PPP methods (presentation, practice, and production) became apparent, but as there were no authentic practice opportunities provided to child learners in the language classrooms, the PPP approach had only limited value, particularly in relation to the final free production phase. The Taiwanese learners share the same first language and only use English in class, so there is no authentic need for them to use English to communicate with each other, a situation that imposes both motivational and linguistic limitations on language learning.

The researcher also observed an incongruity between the PPP teaching approach and the language testing approach adopted in Taiwanese classrooms. The PPP testing approach in use did not actually require students to produce communicative utterances, only to repeat or recognise vocabulary presented by the teacher. In other words, teachers attempted to develop free production of English conversation but only

tested for isolated vocabulary repetition. This results in an incongruity between teaching and testing methodology. The most common strategy for speaking practice is to drill target language in class because of the lack of any *real* communicative alternative or environment. ICT options provide possible solutions for such limitations and incongruities of curriculum and assessment. The inconsistencies between class test, Cambridge test and teacher evaluation demonstrate that Taiwanese teachers struggle to implement appropriate assessments for evaluating students' performance.

As a means of addressing this common limitation for EFL learners, the ICT intervention project allowed learners to move beyond the limitations of classroom resources and practice their target language in a much more authentic context. A recommendation suggested by this outcome is to reform both teaching methodology (as the researcher has suggested, adopting the eclectic approach may be best) and testing methodology. Teaching and testing should align in whatever changes are made to curricula and pedagogy. ICT practice opportunities could be a powerful part of language teaching methodology and assessment reform to improve the English conversational skills of school-aged learners in non-English speaking communities.

In order to achieve this, it is necessary for schools to make further investment in computer technologies, but schools also need to establish and exploit educational networks (possibly linked to the existing sister-school strategy) so that authentic language exchange supported by ICT can take place on a regular basis. The provision of research and development grants by governments to establish such connections in a number of schools across time-zone friendly regions would be valuable not only to enhance language learning but also to develop internationalized perspectives on the

school curriculum and develop cross cultural learning networks.

The lack of speaking and listening skills exhibited in ICT-supported learner conversations shocked teachers during the early sessions. In this real-time conversational context, Taiwanese students' conversational weakness, despite years of study, became evident. ICT-supported conversation exchange programmes take considerably more planning and involve much more individualized work than conventional pedagogies. For example, they require teachers to respond to students on a one-to-one basis by means of the chatting column in the instant message program. However, teachers found this to be a more friendly and convenient means of communication than the PPP method of the equivalent conventional course. As a result of this project, language teachers realised the absolutely necessity for students, particularly EFL learners, to practise their language in *real* communication contexts. Teachers expressed a willingness to invest effort into creating ongoing opportunities for such language exchange and practice programs but were uncertain where resources could be sought to assist put such programs in place over the long term for their child learners.

5.1.4 Interviews with Parents

Another finding was that the parents of these child learners had the expectation that their children would be able to communicate with foreigners as a result of their significant investment in cram school or language school services. This additional after-school language instruction was understood by parents to enhance the future prospects of their children, whom they envisaged developing into competent bilinguals. However, parents were powerless to assess their child's progress, as they

lacked the English language skills with which to measure their child's learning outcomes and language proficiency development. Parents were delighted to observe their children interacting over the computer with English-speaking children and their children's changed attitudes towards learning English as result of the ICT project as well as the connections with foreign peers that it facilitated. They also found that their children had much more confidence in using and practicing their target language at home. These findings are relevant to Research Question 2 (regarding the effect of the ICT intervention on stakeholders' attitudes towards language learning) in that parents had changed attitudes towards foreign language learning because of this new opportunity for them to invest in their children's language learning in an effective way.

5.2 Summary of Conclusions from Research

Students' learning was transformed from a traditional passive drill exercise into an experience of discovery, exploration and excitement to share with each other in this exchange project. In Taiwan, many studies have stated that the use of on-line activities played an important role in helping learners increase their confidence or interest in learning, and made language learning instruction more authentic, communicative and interactive (Shyu 2006, Chang 2007, Lin 2009). This project confirmed the capacity of properly designed online learning to powerfully improve learner motivation and language skills in a user-friendly, communicatively rich environment.

The stimulation of thought processes among the students can be incorporated into online communication activities by requiring learners to draw conclusions or make inferences or predictions from the combination of information from verbal text and

pictorial representations in their connections with each other via the Web-based course. Through such preparatory and reflective activities, the students better notice the linguistic characteristics of the target language when they talk and respond to their foreign peers. In the present study, the students particularly preferred the acquisition of language knowledge via technology used in the course and responded more positively to the time spent in the computer lab than in the conventional classroom.

The outcomes of this research contribute to extensive statements of achievement against the language learning criteria of Taiwanese MOE and NSW Board of Studies in relation to speaking and listening competence as well as cross cultural competence and language learning motivation. First, the project met the Grade 1-9 Curriculum Guidelines from Taiwanese MOE (2006) that primary students should be instructed in oral language as well as written language to improve their interests and motivation. This research project conforms to the requirements from MOE in Taiwan and Department of Education and Training in Australia (Figure 2 and 3) in chapter one. Taiwanese learners were not fully achieving the learning outcomes in the ordinary curriculum related to speaking and listening demonstrated in their results for the Cambridge pre-test and their difficulties in communicating in the early phase of the program. Taiwanese students' performance indicated that it was difficult for them to produce correct pronunciation, intonation, and express themselves in their target language at the start of the program. In addition, they had limited skills in listening in terms of recognition of words, distinguishing vowels and consonants, understanding sentences and following a conversation which were target outcomes of their current curriculum. The ICT language exchange program was able to enhance the achievements of the curriculum so that these outcomes were evident for the children who participated in the program as indicated by the post-test results, their improved

conversational performance online and their improved confidence in using their second language. It allowed students to practise their speaking and listening skills that stimulated their learning motivation through making new friends in a new culture via instant message. Secondly, the ICT exchange project also conformed to the language policy from LOTE for Mandarin of NSW (2007). It provided new opportunities for Australian students to practise their second language with same age learners which enhanced and stimulated their language learning motivation, and allowed students to use their target language in a natural learning context. It further allowed Australian learners of Mandarin to connect with their heritage culture and develop cross cultural understanding and sensitivity.

Conclusions from the research project specific to various cohorts represented in the sample are summarised below:

5.2.1 Learners

Taiwanese language learners are fearful of speaking English as a consequence of the paper-based and passive language learning models dominating Taiwanese schools. However, students' passive language knowledge can be turned into active performance as evident in this project. Such a program of language exchange is also able to demonstrate to learners, teachers and parents that the purpose of learning English is not simply to achieve high scores in class tests, but to enable communication with foreigners. Hence, language learner motivation can be enhanced through ICT language exchange programs which facilitate just this outcome in controlled and supported online environments. Language students can also improve test confidence as a result of ICT language exchange, particularly where tests require

oral and aural input and output.

Learners were interested in learning another culture and were enthusiastic in establishing cross cultural friendships using a second language. Hence, ICT language exchange activities can also generate learning outcomes that are non-linguistic but contribute to enhanced potential to communicate with culturally different individuals.

Students can improve listening and speaking scores in language tests as a result of ICT supported language exchange, although the test format can affect this outcome dramatically.

ICT supported language exchange can dramatically and quickly improve listening skills but has a less dramatic positive impact on speaking skills. It may be that an extended exchange (beyond the 12 hours of this program) could generate equally improved speaking competence.

In addition, ICT programmes with chat/messaging options can allow for peer correction and checking of pronunciation which is beneficial to maintaining conversation in second languages. Whilst there are a range of software available to support such language exchange programs, this written messaging option is an important feature for sustaining learning and communication at the same time.

5.2.2 Teachers and Schools

Several teaching methodologies and pedagogies can be improved by inclusion of ICT language exchange. ICT language learning environments support collaborative

learning projects which allow students to learn without anxiety and pressure, to complete task assessment as a team, and to acquire knowledge and language on their own.

TBL is an effective approach to lesson design and planning in the ICT environment, and ICT language exchange effectively consolidates classroom learning. This means the language classroom has changed its function becoming a zone of multiple learning contexts by incorporating ICT tools to support learning

Cross cultural awareness and sensitivity is a required consideration to promote success in ICT connected language exchange. ICT language exchange programs can be designed to specifically prepare learners for new cultural insights and develop individual tolerance and respect for culturally different values, beliefs and social norms. The benefits of communicating with culturally different learners over ICT are not restricted to language and can support an increasingly common school objective to establish an internationalized curriculum and learning experience for learners.

Importantly, ICT language exchange programs can provide a cultural bridge between migrant children and their home culture/community which is increasingly valuable in a globalised world where human mobility continues to grow.

Resourcing and organising ICT language exchange programs is a challenge that has yet to be taken up by Taiwanese or Australian language schools and Education departments.

ICT language exchange can generate authentic communication between learners and

provide useful data to aid teachers and parents in assessing a learner's achievements in listening and speaking. Teachers welcomed the opportunity to incorporate ICT platforms into language teaching and learning but schools rarely offer or support this option.

Private schools appear to be more open to change and innovation in language learning than public schools and public school learners may be disadvantaged as a consequence. Such observations are concerning and may encourage governments to revisit the language teaching curriculum and resourcing that they provide so that public school children have access to the best methods for developing the learning outcomes stated in the school curricula.

5.2.3 Parents

Taiwanese parents pay for their children to attend English cram schools on the understanding that these schools are providing practice opportunities for the children to consolidate learning from their day school. In fact, the cram schools are following similar curriculum to the day schools and opportunities for authentic practice are not available.

Parents are disempowered in their ability to assess the achievements of their children in language schools as a consequence of their inability to speak the target language. Parents have a primary goal and expectation that their decisions to enroll their children in second language classes will eventuate in a degree of bilingualism which will allow their children to communicate effectively with people of other languages. This outcome is not currently achieved in terms of speaking and listening proficiency

and confidence.

5.3 Recommendations

Students should have the opportunity to learn and practise/use their target language as much as possible in varied environments and contexts, and they should be assisted in developing skills to utilize new technologies to achieve this, including their PC or mobile device.

Teachers should assist their students attain the skills and contacts necessary to access such language development opportunities and monitor their students' language learning. Language teachers should also integrate TBL and cross cultural study into their syllabi and provide varied resources which can develop skills and knowledge relevant to working in diverse groups.

Parents should seek to be involved in their children's language learning using ICT so that they can better evaluate the impact of paid language instruction.

Education policy makers should design language curricula and better resource learning environments and teaching staff to exploit the capacities of ICT to address limitations in language learning outcomes currently experienced in English as Foreign Language learning environments. Education ministers should seek to establish networks of language learners and teachers who can work together over ICT to develop speaking and listening skills and confidence as well as cross-cultural understandings and relationships for learners.

Continuing development of multi-touch screen technology, tablet PC and smart phones provides learners with continually increasing options for accessing and developing knowledge and information anywhere and anytime. Students can trace what they have learned, take notes, and establish contact with teachers and peers via ICT with greater ease as these technologies spread and language teaching and learning needs to continually seek to deploy new technologies to achieve improved communication outcomes.

The Taiwanese MOE should review language teaching instruction and practice to enhance teachers' abilities to deliver effective communicative speaking and listening instruction deploying new technologies, and also provide resources and opportunities for authentic communication in target languages. Taiwanese and Australian primary schools which offer language instruction should deploy ICT supported language exchange programs to enable child language learners better achieve the learning outcomes articulated in state education curriculum.

Cram schools and after-school language program providers should ensure that their language development activities are a genuine augmentation to formal school language curriculum rather than a repetition of a flawed and restricted language teaching approach.

Mechanisms for demonstrating the achievements of children in private language classes, such as ICT recorded communications need to be provided so that parents have a capacity to witness and judge the progress of their children in paid tuition.

5.4 Limitations to This Study

This is a small scale study involving twelve learners, their teachers and parents so it is not possible to generalize from findings to language learners and teachers across Taiwan and/or Australia. Implications for language learners, teachers and parents have been identified as a result of this small study and the associated changes in learning but a larger scale study could provide more comprehensive data from which generalizations may be drawn and recommendations for policy changes and educational approaches be generated. A study beyond Taiwan and Australia, incorporating more diverse cultures and languages could also provide broader and more generalizable data and results.

The researcher could not use government primary schools as participant research sites as the public school principals approached in Sydney declined to take part in the research even though they offered second language Chinese (Mandarin) to their child learners. Therefore, the researcher asked a private language school (Tzu Chi Academy Australia in Croydon) to participate which they were very willing to do. This apparent disinterest of government primary schools in innovations and new applications for technologies in language learning suggest that capacity to advance the communicative language teaching and learning methods via ICT is restricted both in Taiwan and Australia.

Because of the limitations of budget, six students shared one computer in this language exchange program which led to some student disorder in class. ICT language laboratory classroom management is a specific challenge and teachers need to be prepared to manage activities effectively in this environment. Further PC

resources would create improved learner experiences and create an easier classroom management scenario for teachers needed to be improved especially students' curiousness and excitement about computer technology.

5.5 Further Study

This research project can be extended for the further study, therefore, some aspects suggested as follow:

- Testing a similar program on a larger group of students in a specific age group and in wider ranging age groups,
- A similar program could be developed and tested for different language and culture groups,
- Identification of appropriate teacher training for improving communicative language teaching and assessment deploying new technologies in foreign language environments, and
- Exploration of the impact of ICT supported language exchange on reading and writing skills for L2 learners.

This research, hopefully, contributes new perspectives and options into language learning and teaching methodology in English and Mandarin using ICT platforms and integrating cross cultural learning. English and Mandarin are currently dominant global languages; not only young learners but also adult learners increasingly learn these two languages and ICT interventions can support all learners regardless of age and objectives. In the context of globalization, cross-cultural conversations in dominant languages such as English and Mandarin become increasingly prevalent and important so that ICT options for supporting improved global communications can

contribute to a better integrated global community of learners and communicators.

Therefore, using of language such as speaking and listening plays more and more important in communication that shows learners can produce their target language in practical ways.

Chapter Six: Reflection

I obtained my Master Degree of TESOL at Ulster University, UK in 2002, and I have worked as a teacher of English in Taipei in Taiwan. I teach primary children in a language school as well as adults at university.

I decided to enroll in the CQUniversity Doctor of Professional Studies in 2008 because my father had encouraged me to develop my career. My father, who could not speak English, had a unique approach to teaching me how to speak English as a teenager – he bought a walkie-talkie set and practised with me. He encouraged me to listen on this system to English-speaking crews on ships in Keelung harbour and got me to translate for him for a period of time. Then, he encouraged me to begin conversation with the sailors. Therefore, I developed links with a walkie-talkie pal from Greek crew who spoke with me in English and helped develop my speaking and listening skills.

This gave me the idea of deploying more up-to-date technology with my students of English in Taiwan. Thus, I developed my master thesis as Integrating the E-mail into Writing Classroom: A Case Study at Ruei-fang Junior High School in 2002. This research project provided the students to use short message and email in English. However, I found learners still lack the competence of speaking and listening, and parents were anxiety about the result for their children that they could not speak and listen after a long period of learning. At the same time, I found that students lack

learning motivation, which led them avoided to use and learn English was an important problem. Therefore, I started to consider a new method to link their language learning with other native speakers in an authentic environment through technology.

I started my doctorate course in term 2, 2008 which was difficult time for me. I lost my father at that time, taking care of my grandmother who also passed away after three months. Then, I flew to Sydney in March, 2009, and launched my six workshops assessments. Dr. Clive Graham taught me regard to the Mode-2 and transdisciplinary thinking, and these two key conceptions are crucial to this thesis, that constructed the implement for the research topic. He also assisted me to realize applied research and futures dimension in terms of the scenario in the future, and introduced ETD (Technology, Entertainment, and Design <http://www.TED.com>) which provided innovative thinking in various fields in the six workshops to inspire my thinking. Without his training at that time, I could not think logically and creatively implementing into this research. Associate Professor Alison Owens guided my NEAF and research methodology that established the framework of the research thesis. They encouraged me to read broadly as possible to gain different aspects toward one issue. Supporting from LSU was one of important elements for me to pass six assessments. The staffs in LSU provided useful suggestions that were particularly important for non-native speakers in academic writings. In the Year 1 of Doctorate, I learned how to develop logical thinking and how to construct significant research proposal. I spent one term finishing the six assessments although it was a tough task that was still worthy to achieve it.

In the Year 2, Associate Professor Alison Owens was assigned to be my supervisor, and assisted me to clarify the framework and topic for this thesis. At this stage, I developed my research assumptions and design with her. A lack of authentic learning environment, language learners cannot practise their speaking and listening to similar age or level native speaker. Therefore, my assumptions were if learners got an authentic learning context, would their speaking and listening comprehension be enhanced? At the beginning of 2010, I achieved the presentation of Colloquium and NEAF, which were imperative for doctorate students. I delivered a presentation in Colloquium on 11 February 2010, and the panel was impressed with the content and allowed me to proceed to the research phase of the Doctorate. I started to launch my research project after passing NEAF which was challenge to me. Associate Professor Owens facilitated and guided me to establish the bridge between the Australian learners of Mandarin and Taiwanese learners of English and how to measure the learning outcomes. I forgot the significance of the cross-culture in this thesis, and she provided suggestions to me, and let me join one of her cultural filming to introduce Taiwanese eating culture. Thus, I realized the meaning of 'learning from doing.' She also reminded me to find the primary school and considered how would the process of produce. I also started to find a participant school in Sydney. Associate Professor Owens wrote a letter for me to contact principals of primary school. Unfortunately, none of the government schools would take part in this research project. Therefore, I tried to email the principal of Buddhist language school (Tzu Chi Academy Australia in Croydon), and he welcomed my research project and invited me to teach Mandarin at the language school. At the beginning of the project, I thought there would not be difference impact on the culture because most of the Australian children learners were the second generation of Taiwan or China. However, I found their behaviour shocked Taiwanese students who were silent and in order in class. Thus, I enforced and revised

the project that involved in culture aspect and tried to introduce different culture to Australian students. These experiences supported me to go further study in the near future.

Year 3, which was the final year of my doctorate study, was another challenge for me. Associate Professor Owens introduced me to attend APAIE (Asia-Pacific Association for International Education) conference and exhibition where I expressed my thesis of language teaching methodology through ICT. APAIE was held in March in Taipei, and before my speech, Associate Professor Owens trained me to present in front of the public in English which was a challenge for second language speaker. However, I thought, as an English teacher, if I could not achieve it, no one would trust my professional ability. Therefore, I practised five hours everyday even including on the train. During the conference, I know people from European Universities and their new curricula cross four different countries (Sweden, Denmark, German, and Poland) which involve transdisciplinary thinking and cross-culture learning. They tried to recruit Taiwanese IT postgraduate students, and this project has been processed in English for 5 years. Although this project designed for IT students, it inspired me to explore the further research which involves in three languages (English – Japanese – Mandarin) and three countries (Australia – Japan –Taiwan) interactively via ICT-intervention project. I attempt to apply for Spencer Grant, TESOL Quarterly, offer ongoing work in Tzu Chi Buddhist School, and seek opportunities in Australian universities that promoting and extending this research project, so that more learners and teachers have resources to such a language development resource. My supervisor's patience, profession, and assistance allowed me to achieve not only my doctoral study, but also my future intention in the research field.

When I review my decision that I made three years ago, I would do it again. I am delightful to accept my father's suggestion to pursue my professional doctorate degree, although the process was full of challenge. I like to express my appreciation to Associate Professor Owens who is my supervisor not only in thesis, but also my life. She guided me to inspect different methodology in life. Thai friends and Taiwanese friends taught me how to cook, and we spent time discussing with assessments were good memory. Experiences in this doctorate program have developed my observation to be logical and critical, and achieved my goal to be a scholar. Dr. Clive Graham said in the first class: '...the proceeds are difficult, but at the end you will feel it is worthy.'

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Appendix 1

ICT Intervention Syllabus

Date	Topic	TBL Activity (by Yahoo Message)
25 th Apr. 2010	Greeting	Students will get the personal data such as age, birthday, and email from their foreign partners.
2 nd May 2010	Chinese New Year	Students will understand the customs and culture from <i>Chinese New Year</i> .
9 th May 2010	Fruit & Food	Students can name and draw their foreign partner's favourite fruit and food.
16 th May 2010	Time & Weather	Students will understand the difference of time and weather between different countries.
23 rd May 2010	Animals	Students can name and draw animals in the zoo.
30 th May 2010	Sports	Students can talk and share which sport they like.
6 th June 2010	Farewell	Students will present one of their favourite lessons, and send their thankful to each other.

Appendix 2

Listening and Speaking Assessment

Cambridge YLE

Starters

Listening & Speaking

Sample Paper



UNIVERSITY *of* CAMBRIDGE
ESOL Examinations

English for Speakers of Other Languages

*There are 20 questions in listening test and 5 questions in speaking test. You will need coloured pens or pencils.

My Name is: _____

Part 1

– 5 questions –

Listen and draw lines. There is one example.



Part 2

– 5 questions –

Read the question. Listen and write a name or a number.

There are two examples.

Examples



What is the girl's name?

.....Lucy.....

How old is she?

.....7.....

Questions

- 1 What is Lucy's friend's name?
- 2 Which class are the two children in at school?
- 3 How many dogs are there at Lucy's house?
- 4 What's the name of Lucy's favourite dog?
- 5 How many fish has Lucy's friend got?

Part 3

– 5 questions –

Listen and tick () the box. There is one example.

What's Pat doing?



A ☐



B ☐



C ☒

1 Which is May?



A ☐

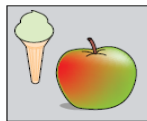


B ☐



C ☐

2 Which is Nick's favourite ice-cream?



A ☐



B ☐



C ☐

3 What's Ben doing?



A ☐

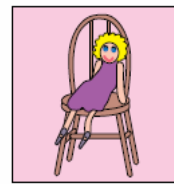


B ☐



C ☐

4 Where's Kim's doll?



A ☐



B ☐



C ☐

5 What's Dad doing?



A ☐



B ☐



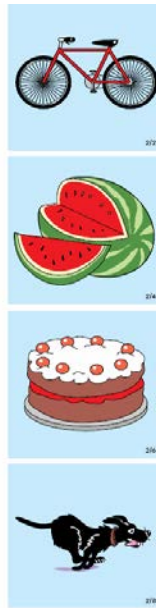
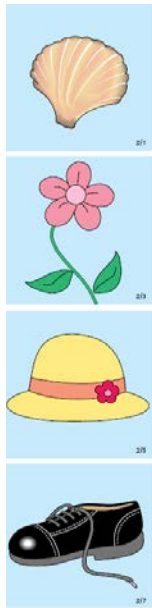
C ☐

Part 4

– 5 questions –

Listen and colour. There is one example.





Starters Speaking

Summary of Procedures

(The usher introduces the child to the examiner.)

1 The examiner familiarises the child with the picture first and then asks the child to point out certain items on the scene picture, e.g. ‘Where’s the monkey?’

2 The examiner asks the child to put object cards in various locations on the scene picture, e.g. ‘Put the shell under the tree.’

3 The examiner asks questions about two of the people or things in the scene picture, e.g. ‘What’s this?’ (Answer: fish) ‘What colour is it?’ (Answer: grey)

4 The examiner asks questions about the object cards, e.g. ‘What’s this?’ (Answer: a bike) and ‘Have you got a bike?’

5 The examiner asks questions about the child, e.g. ‘How old are you?’

Appendix 3

Interview Questions for English Teachers

Questions	Answers
<p>Name:</p> <p>Gender:</p> <p>Age range: 20-25, 25-30, 30-35, 35-40, 40-45, 45-50, 50-55, above 55</p> <p>Graduate School / Dept.:</p> <p>Highest qualification:</p> <p>English teaching qualification:</p> <p>Year attained:</p>	
1. How long have you taught English in the primary school?	
2. What theory/methodology do you apply in your English teaching?	
3. What strategies do you use in practising speaking and listening?	
1. What limitations do you find in the teaching method and strategies you currently use in promoting listening and speaking proficiency for students?	
2. What outcomes do you expect from the children? How do you assess if this is	

achieved in speaking and listening? Where do they perform most weakly in your assessments?	
<p>3. What impact if any has the ICT intervention program had on the children's learning outcomes in relation to speaking and listening?</p> <p><i>(Show the teachers brief recorded free production or each learner of ICT.)</i></p>	
4. What kind of support do you need from parents to improve language learning outcomes?	
5. What kind of support do you need from the school to improve language learning outcomes?	
6. What do you think further integration of computers and technology could mean for language learning classrooms?	
7. What formats of computer integration might be valuable?	

Appendix 4

Interview Questions for Parents

Questions	Answers
Name:	
Gender:	
Age range: 20-25, 25-30, 30-35, 35-40, 40-45, 45-50, 50-55, above 55	
Graduate School / Dept.:	
District:	
1. What outcome do you expect for your children from their language instruction?	
2. How do you measure this?	
3. Why did you select this school?	
4. How do you judge the current language teaching situation? What kind support do your children need from school to improve their language learning?	
5. Have there been problems or disappointments from your children's language learning experience?	

6. What do you expect from language teachers teaching at school?	
7. What would you like to see change in the teaching of English at the school?	
8. Is your child willing to use their target language at home?	
9. In what ways do you think your child's language learning has changed as a result of participating in the ICT enhanced learning project?	

Appendix 5

CQU Human Research Ethics Committee Approval

Secretary, Human Research Ethics Committee

Ph: 07 4923 2603

Fax: 07 4923 2600

2 April 2010

Email: ethics@cqu.edu.au

Ms Monica Huang

99 New Canterbury Road

Petersham NSW 2049

Dear Ms Huang

HUMAN RESEARCH ETHICS COMMITTEE CONDITIONAL APPROVAL:
PROJECT H10/03- 026 INCORPORATING AN ON - LINE EXCHANGE
STUDENT LEARNING PROGRAM WITHIN SECOND LANGUAGE
CURRICULA: A CASE STUDY BETWEEN AUSTRALIAN AND TAIWANESE
PRIMARY SCHOOL STUDENTS

The Human Research Ethics Committee is an approved institutional ethics committee constituted in accord with guidelines formulated by the National Health and Medical Research Council (NHMRC) and governed by policies and procedures consistent with principles as contained in publications such as the joint Universities Australia and NHMRC *Australian Code for the Responsible Conduct of Research*. This is available at http://www.nhmrc.gov.au/publications/synopses/_files/r39.pdf.

On **30 April** 2010, the committee met and considered your application. The committee is pleased to tell you that they have granted conditional approval for your research project, *Incorporating an on - line exchange student learning program within*

second language curricula: A case study between Australian and Taiwanese Primary school students (Project Number H10/03-026). There are a number of conditions to be met:

- a) You have ticked 'YES' to 5.2.3. This means that the project has previously been conducted. Please clarify.
- b) It was noted that you have permission from one of the two schools – please provide a copy of permission from the other school
- c) With respect to the 12 week period – it is suggested that you amend your end date to the end of July to accommodate vacation periods (eg Australian students take holidays in the first 2 weeks of April)
- d) As your project involves research conducted overseas, section 4.8.4 and 4.8.5 of the National Statement, requires you to advise HREC whether there are processes for ethical clearance required within the country (in this instance Taiwan), how the processes operate, and whether it is voluntary or mandatory to obtain local ethical clearance.

The period of ethics approval will be from date of compliance with the conditions above to 31 July 2010. The approval number is H10/03-026; please quote this number in all dealings with the Committee. HREC wishes you well with the undertaking of the project and looks forward to receiving the final report and statement of findings.

PLEASE NOTE: It is important that you do NOT commence any aspects of the project involving human participants until you have lodged with the Human Research Ethics Committee the required information and/or acceptance of the outlined conditions.

Please lodge the above information by e- mail or memo with the Secretary, Human Research Ethics Committee within fifteen (15) working days upon the receipt of this advice or contact the Secretary and negotiate an appropriate due

date.

The standard conditions of approval for this research project are that:

- (a) you conduct the research project strictly in accordance with the proposal submitted and granted ethics approval, including any amendments required to be made to the proposal by the Human Research Ethics Committee;
- (b) you advise the Human Research Ethics Committee (email ethics@cqu.edu.au) immediately if any complaints are made, or expressions of concern are raised, or any other issue in relation to the project which may warrant review of ethics approval of the project. *(A written report detailing the adverse occurrence or unforeseen event must be submitted to the Committee Chair within one working day after the event.)*
- (c) you make submission to the Human Research Ethics Committee for approval of any proposed variations or modifications to the approved project before making any such changes;
- (d) you provide the Human Research Ethics Committee with a written “Annual Report” by no later than 31 January each calendar year and “Final Report” by no later than one (1) month after the approval expiry date; *(A copy of the reporting pro formas may be obtained from the Human Research Ethics Committee Secretary, Sue Evans please contact at the telephone or email given on the first page.)*
- (e) if the research project is discontinued, you advise the Committee in writing within five (5) working days of the discontinuation;
- (f) A copy of the Statement of Findings is provided to the Human Research Ethics Committee when it is forwarded to participants.

Please note that failure to comply with the conditions of approval and the *National Statement on Ethical Conduct in Human Research* may result in withdrawal of

approval for the project. In the event that you require an extension of ethics approval for this project, please make written application in advance of the end-date of this approval. The research cannot continue beyond the end date of approval unless the Committee has granted an extension of ethics approval. Extensions of approval cannot be granted retrospectively. Should you need an extension but not apply for this before the end-date of the approval then a full new application for approval must be submitted to the Secretary for the Committee to consider.

The Human Research Ethics Committee is committed to supporting researchers in achieving positive research outcomes through sound ethical research projects. If you have issues where the Human Research Ethics Committee may be of assistance or have any queries in relation to this approval please do not hesitate to contact the Secretary, Sue Evans or myself.

Yours sincerely,

Associate Professor Lorna Moxham

Chair, Human Research Ethics Committee

Cc: Project File

Dr Alison Owens (Supervisor)

Application Category: B

Appendix 6

Consent Form for Teachers

CONSENT FORM

I consent to participation in this research project and agree that:

1. An Information Sheet has been provided to me that I have read and understood;
2. I have had any questions I had about the project answered to my satisfaction by the Information Sheet and any further verbal explanation provided;
3. I understand that my participation or non-participation in the research project will not affect my academic standing or my employment.
4. I understand that I have the right to withdraw from the project at any time without penalty;
5. I understand the research findings will be included in the researcher's publication(s) on the project and this may include conferences and articles written for journals and other methods of dissemination stated in the Information Sheet;
6. I understand that to preserve anonymity and maintain confidentiality of participants that fictitious names may be used any publication(s) unless I have expressly granted permission as outlined below;
7. I understand that the researcher will observe the process and gather online data as 'learning journal' of the twelve weekly sessions by web-cam software, and the data will be coded and stored for 5 years;

8. I am aware that a Plain English statement of results will be available on the web address provided in the Information Sheet;
9. I agree that I am providing informed consent to participate in this project.

Signature: _____

Date: _____

Name (please print):

Where relevant to the research project, please check the box below:

	YES	NO
1. I wish to have a Plain English statement of results posted to me at the address I provide below.		
2. I am prepared to be named in any publication(s).		
3. I give permission for photographs and digital images of me to be used in any publication(s) from the research project. <<delete if not applicable>>		

Postal Address:

E-mail Address:

Appendix 7

Consent Form for Parents

CONSENT FORM

I consent to participation in this research project and agree that:

1. An Information Sheet has been provided to me that I have read and understood;
2. I have had any questions I had about the project answered to my satisfaction by the Information Sheet and any further verbal explanation provided;
3. I understand that my participation or non-participation in the research project will not affect my academic standing or my employment.
4. I understand that I have the right to withdraw from the project at any time without penalty;
5. I understand the research findings will be included in the researcher's publication(s) on the project and this may include conferences and articles written for journals and other methods of dissemination stated in the Information Sheet;
6. I understand that to preserve anonymity and maintain confidentiality of participants that fictitious names may be used any publication(s) unless I have expressly granted permission as outlined below;
7. I understand that the researcher will observe the process and gather online data as 'learning journal' of the twelve weekly sessions by web-cam software, and the data will be coded and stored for 5 years;

8. I am aware that a Plain English statement of results will be available on the web address provided in the Information Sheet;
9. I agree that I am providing informed consent to participate in this project.

Signature: _____

Date: _____

Name (please print):

Where relevant to the research project, please check the box below:

	YES	NO
1. I wish to have a Plain English statement of results posted to me at the address I provide below.		
2. I am prepared to be named in any publication(s).		
3. I give permission for photographs and digital images of me to be used in any publication(s) from the research project. <<delete if not applicable>>		

Postal Address:

E-mail Address:
