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**COMPUTER-MEDIATED COLLABORATIVE  
LEARNING IN A VIETNAMESE TERTIARY EFL  
CONTEXT: PROCESS, PRODUCT, AND  
LEARNERS' PERCEPTIONS**

A thesis presented in partial fulfilment of  
the requirements for the degree of  
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## ABSTRACT

Viewing language learning from a sociocultural perspective, this study investigates the nature of both synchronous and asynchronous computer-mediated communication (CMC) and how these two modes of communication may complement each other and contribute to collaborative learning in an EFL classroom environment. The focus is on collaborative language learning competence and learners' perceptions of the application of CMC to classroom practices. This classroom-based research took the form of a collaborative problem-solving experiment in a group of EFL students in a large university in Central Vietnam. Various data were collected for the study, including the initial pre-project questionnaire on students' background and attitudes, transcripts from both face-to-face and chat discussion, after-chat focus-group interviews, peer comments from both traditional pen-and-paper and wiki exchanges, final collaborative written assignments, and post-project questionnaires and interviews with students about their reflections on classroom CMC in collaborative learning. The study, with both process and product orientation, took place throughout a 12-week semester.

Results from the study indicated promising avenues for the application of various CMC technologies in the language classroom. First, although learners' language production in the online synchronous discussion was not as high as that from traditional face-to-face practice, the quality of discussion was persuasively better in the SCMC mode. In addition to the fact that learners' participation was more equal, evidence of interaction and negotiation leading to a satisfactory level of information synthesis were found to be promising elements in online chatscripts. Second, the use of wikis as a new platform for peer exchanges can be considered an innovation, liberating the students from the conventional, narrow, and linear practice of pen-and-paper-based peer editing. The students participated more, interacted more, and negotiated more in the multi-way interactive architecture of participation, the wiki. Third, although there was no significantly statistical difference in any of the comparative criteria between the two sets of essays produced by the two classes,

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indications of trends in terms of quality were positive toward the online essays. Fourth, the students' reflections on and perceptions of the introduction of CMC into the language classroom presented a potential picture of a technology-enhanced classroom. Apart from the fact that computer and typing skills turned out to be the biggest hindrance regarding the effectiveness of CMC integration, the students' reflections on the process were positive and they saw it as constructive.

Finally, the four key issues emerging from the study included classroom boundary, the sociotechnical affordances of the CMC environment, the teacher's roles in the CMC environment, and product-oriented versus learning-oriented collaborative learning styles.

Keywords: CALL, CMC, collaborative learning, CLT, EFL, sociocultural theory, mixed methods research, classroom-based research, Web 2.0.

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## **CHAPTER ONE: INTRODUCTION**

### **1.1 Overview**

This chapter of the thesis provides an overview of the study, starting with the statement of the problem, including the three movements that affect English language education in Vietnam. This is then followed by the presentation of the purposes and the significance of the current study. The introductory chapter ends with the presentation of the thesis organisation.

### **1.2 Statement of the Problem**

The emergence of English as a global language, communication technological innovation, and a growing need for a comprehensive language teaching methodology – as the three current movements in the regime of language education – have challenged language teaching programs worldwide, especially in Asian countries.

#### *1.2.1 The first movement: English as a world language*

As for the first movement of English as a world language, English is now growing in popularity resulting in the formula: EFL > ESL > ENL, in which more people use English as a foreign language than English as a second language, but second language speakers in turn outnumber those using English as their native, or first, language (Warschauer, 2004). In other words, English is a global language, or a lingua franca (Crystal, 2006), with well over one billion English users in the world today, and the number is increasing exponentially. This movement, together with changing employment patterns and the growth of new technologies, has characterised the new international economic and technological order known as informationalism (Warschauer, 2000a). According to the Association of South-East Asian Nations (ASEAN), for example, English has been heralded as a lingua franca in South-East Asia since its establishment in 1967; and “the de facto adoption of English as the sole working language of ASEAN is about to be formalized” (Kirkpatrick, 2008, p. 27).

*1.2.2 The second movement: The integration of CMC into education*

The second movement involves the integration of computer-mediated communication (CMC) into education. Technologically, following on from face-to-face communication, writing and the development of printing, CMC is regarded as the fourth revolution in the means of knowledge production and delivery (Warschauer, 1997). CMC is originally described by December (1996a) as the process by which people create, exchange, and perceive information using networked telecommunications systems that facilitate encoding, transmitting, and decoding messages. Normally, common characteristics of CMC include asynchronous (ACMC) and synchronous (SCMC) communication capacity with high and multiway interactivity (Luppicini, 2007; Pfaffman, 2008). Conversely, looking from the socio-oriented perspective, CMC is not just a tool but also a medium and engine of social interactions. It structures social communities within which diverse relations occur and evolve (Jones, 1995; Thorne, 2008a). In line with the current communicative, sociocognitive trends in education, both synchronous and asynchronous CMC as everyday authentic communication tools offer numerous possibilities for second language acquisition in terms of collaborative learning and are now a significant avenue of enquiry in applied linguistics. In fact, CMC-based and CMC-enhanced learning is now available in most secondary, vocational and especially tertiary educational institutions in many countries, particularly in North America, Europe, and some parts of Asia.

The movement of information and communication technology (ICT) application to education has lately been introduced to South-East Asia. South East Asian Ministers of Education Organisation (SEAMEO) member countries recently joined to share and discuss initiatives in integrating ICT into their education systems during the 30th SEAMEO High Officials Meeting in 2007. The discussion, led by Malaysian representatives (2007), focused on ICT capabilities and challenges of providing the needed infrastructure and in encouraging teachers and students to adopt the culture of ICT in general education and language development.

### *1.2.3 The third movement: Language teaching pedagogical reform*

Finally, in terms of language teaching pedagogical reformation as the third movement, there have been two widely known trends in classroom research and practice. First, the social turn in foreign language education (Block, 2003; Lantolf & Thorne, 2007) has urged educators and teachers to seek for more comprehensive methods and approaches to classroom practices. Attention has transferred from psycholinguistic approaches to sociocultural perspectives, emphasizing language development through meaningful social interactions (Lund, 2006; Norton, 2009a; Warschauer, 2000b). As a result, a pedagogical shift has progressively moved from a narrow focus on individual learning to more contextual, collaborative, and sociocultural approaches to language development (Kern & Warschauer, 2000; Stahl, Koschmann, & Suthers, 2006). Collaborative learning has therefore grown in significance and attracted increasing interest.

Together with the social turn, there has been a remarkable increase in the application of CMC to language teaching and learning, as the second trend, over the past two decades. This increase is partly due to the high-speed evolution of ICT but mainly because “more and more language instructors are integrating the use of technology into their classroom” (Chun, 2008, p. 16). CMC has introduced us to the idea of new literacies and language genres; and at the same time has blurred the line between written and oral communication (Kern, 2006; Warschauer, 2004) by “combining the interactivity of speech with the permanence of writing” (Fang & Warschauer, 2004, p. 304). Researchers are constantly exploring how CMC may help or hinder the language learning process in particular sociocultural settings.

These two trends have married collaborative learning and CMC so as to set up a fashionable style of learning, namely computer-mediated collaborative learning, or CMCL. In other words, collaborative learning and CMC have developed in a parallel fashion and in a mutually supportive way. To date, learning English through computer-assisted instruction and becoming computer literate through learning English is a trend in many ESL/EFL learning and teaching programs (Warschauer, 2004).

Zooming out to Vietnamese education in general and English language education in particular, at the moment it presents a dull picture. Countless debates in the press have focused on poor quality in the tertiary education sector, targeting graduates' inability to satisfy both initial work requirements and on-going professional development demands in the multinational employment market, which has been attributed mainly to the lack of collaborative and communicative competence (T. M. H. Nguyen, 2007). The list of causes for this dissatisfaction may be numerous; but most importantly, it is the teaching methods in which most classrooms have been teacher-fronted (Sullivan, 1996) and examination-oriented that are at the root of the problem. It is acknowledged that the current methods and classroom practices are outdated, relying almost entirely on stringent teacher-centred pedagogical techniques and rote learning.

Taken together, introducing CMCL, with its assumed academic, social, and psychological benefits in language education (Lamy & Hampel, 2007; Ware & O'Dowd, 2008), into Vietnamese classroom practices may therefore be considered as one of the solutions, killing three birds with one stone: English language development, collaborative practice training, and the development of online communicative competence. A thorough understanding of CMC-supported collaborative learning processes is thus essential for Vietnamese educators, and in particular for language teachers, who need to capitalise on the advantages and potential strengths that CMCL has to offer.

### **1.3 The Research Problem**

Even though collaborative approaches to foreign language learning via various forms of CMC have now been well established with a theoretical underpinning (Warschauer, 1997), there are still questions left unanswered. What actually is CMC in regard to collaborative learning? What are the unique social activities of the online collaborative environment? What theories and forms of collaboration can be applied in the CMC environment? What are learners really doing in the process of online collaboration? How do learners view CMC and what are they doing in collaborative processes? Does proficient collaboration in CMC contribute to language improvement? How may differences in learners' sociocultural backgrounds affect the

learning process? How can SCMC and ACMC complement each other in collaboration? And most importantly, how can CMC be naturally immersed into the collaborative learning so that the use of computers is not framed as a special case but rather as an integral aspect of foreign language education? As a result, further research on authentic online collaborative learning is needed; and the questions have demonstrated the need for classroom research that investigates the nature and the contributions of both synchronous and asynchronous CMC in collaborative language learning and how learners in the particular Vietnamese sociocultural context reflect on the application of various modalities of CMC in the EFL classroom.

#### **1.4 Purpose of the Study**

This study aims to investigate the nature and effectiveness of synchronous and asynchronous CMC in collaborative foreign language learning. In particular, the research centres around the three critical attributes of collaborative learning (Ingram & Hathorn, 2004), namely participation, interaction, and synthesis of information. The study strives to answer the following guiding research questions:

1. What is the nature and contribution of online synchronous discussion in comparison with traditional face-to-face discussion in collaborative learning in the EFL classroom?
2. What is the nature and contribution of online asynchronous peer review in comparison with traditional pen-and-paper peer review in collaborative learning in the EFL classroom?
3. To what extent, and in what ways, do online exchange processes lead to improved English language achievement?
4. What are students' reflections on and perceptions of the application of CMC collaboration in the EFL classroom?

The results are discussed in four main sections, entitled discussion process, peer review process, final collaborative products, and students' reflections and perceptions, in accordance with the four research questions. It is noted that the analysis is carried out drawing on significant aspects of the Vietnamese sociocultural setting.

### **1.5 Significance of the Study**

It was hoped the project would provide implications for theory, policy, and practice in second/foreign language education. Theoretically, the study is of importance in that it had the potential to help improve classroom practices by fulfilling certain theoretical gaps in current SLA theories from a sociocultural perspective. The consideration of technology-based learning in contrast to classroom-based learning was appropriate and timely; and the application of synchronous and asynchronous modes in different learning strategies could possibly extend language teaching and learning opportunities in further contexts. The results drawn from the study, together with other previous related research on online applications to collaborative language learning, may help to understand how to seamlessly integrate CMC into language education. This may in turn foster a more confident and knowledgeable attitude among language institutes and teachers in bringing various types of CMC into language classroom settings. Finally, the project was considered to be strategically important for language teaching in the expanding circle countries (Bautista & Gonzalez, 2006; Kachru, 1992) like Vietnam, not merely for university students, but also for the large community who are seeking to develop competent levels of skill in English.

### **1.6 Organisation of the Thesis**

The thesis is organised into ten chapters. Chapter One functions as an introduction to the thesis, including the statement of the research problem, the purpose of the research, and the significance of the study. Chapter Two presents the background of the study. This chapter provides an introduction to the institution where the current study took place, together with information about the students and the uses of technology on the campus. Chapter Three reviews the relevant literature. This chapter covers significant aspects of sociocultural theory as a theoretical framework for the current study, collaborative learning viewed from the prism of Communicative Language Teaching, and various aspects of computer-mediated communication in language education. Chapter Four discusses the research methodology and the procedures involved in the project. It aims to describe the research objective and research questions, the participants and their backgrounds,

methods of data collection and analysis, along with a presentation of the human ethics requirements of the study. The next four chapters, i.e. Chapter Five, Six, Seven, and Eight, present the results of the study, corresponding to the four research questions. Chapter Nine discusses the results in relation to the four research questions and some further discussions of key issues drawn from the project. The last chapter summarises the thesis with personal reflections on the process of conducting the PhD research, along with implications, limitations, and suggestions for further study.

## **CHAPTER TWO: BACKGROUND**

### **2.1 Overview**

Warschauer (1998) has asserted that the actual application of technologies in the classroom is largely shaped by broad sociocultural variables, including the role of the institution, the general culture of teaching, and the beliefs of the teachers as well as students. This chapter therefore aims to put the study into context by describing the institution where the research took place, along with the learners' cultural, social, and educational background. The purpose is to provide an overview of the sociocultural setting, including features salient to the study. But, first of all, we will go through a snapshot of English language education in Vietnam.

### **2.2 English Language Education in Vietnam**

For the past thirty years, English has been the first, dominant foreign language in Vietnam, where English language education has become a compulsory module of education (Goh & Nguyen, 2004). English language education in Vietnam is discussed here from two perspectives. The first part describes the context of English language teaching and learning in Vietnam, focusing on the mismatches between learners' English language requirement from the governmental level and the actual situation of the current English language level of graduates. This is then followed by a presentation of the conflicts between the application of Communicative Language Teaching (CLT) to classroom practices and Confucian learning styles. Several conclusions are drawn as a backdrop for the current study.

#### ***2.2.1 The context***

In a recent national conference on Higher Education Quality on 5 January, 2008 (MoET, 2008), the Deputy Prime Minister and Minister of Education exhorted that the national scheme of enhancing the wide usage of English in Vietnam must be soon completed. The stated aim was that by 2020 all undergraduates on graduating from

university will be able to successfully communicate in English language speaking communities. In order to attain this, it is promulgated by the Deputy Prime Minister that the Ministry of Education and Training, together with universities, has to prepare a comprehensive English teacher training program. This is then to be followed by gradually upgrading English teaching and learning quality. English language education in Vietnam is held up from the very top level of administration as one of the key national policies in the economic and political context of Vietnam's becoming the 50<sup>th</sup> member of the WTO at the end of 2007 (L. V. Nguyen, 2010).

In fact, Vietnam, as a member of ASEAN, APEC, and recently WTO, is not immune from the globalisation of English. English has been increasingly recognised as a very important instrument in national development, international cooperation, and globalisation. There has been a rapid increase in demand for English in Vietnam since the 1990s when the economic renovation process, known as *doi moi*, was introduced. In effect, English has taken the place of Russian, and before that, French and Chinese, to become the most widely learned foreign language. The language has become one of the compulsory subjects in the school curriculum throughout the country, where students have to start learning this first, dominant foreign language as early as secondary school (aged 11) in most big cities, or in high school (aged 16) nationwide. There has been recent debate in the Vietnamese sociocultural context, especially in metropolitan centres, as to whether English should be taught earlier in primary school or in secondary school. This has resulted in the recent Decree signed by the Prime Minister that from 2010 foreign languages, specifically English, will be taught at Form Three (aged 8), instead of Form Six (aged 11), in the national educational system (Vietnamese Government, 2008a). In other words, school students will learn English for ten, instead of seven, years from Form Three till Form Twelve.

Moreover, there is a discussion among scholars over the ambitious redefinition of "literacy" as the ability to read and write not only in the first, native language (Vietnamese) but also in a second language, with English as a dominant choice. In fact, English has been developing at a record speed in Vietnam over the past ten years (Do, 2006). Numerous language centres have mushroomed in big cities throughout the country, offering a variety of courses and programs for learners of

different ages, careers, and purposes. In general, the contemporary trends of the globalisation of English have created a number of concerns and discussion, and have evoked a lot of thought about and reflection on the regime of English teaching and learning in Vietnam.

Although the importance of English has been widely and publicly recognised, the practical teaching and learning situation leaves a number of issues unresolved. The national education in general and the English teaching and learning situation in particular at the moment presents a lacklustre picture. The quality of English education is still one of the primary concerns of many Vietnamese educators and the public. In the twelve years of secondary education and the at least four years of tertiary education, students have a minimum of eleven years of learning English. But, ample evidence shows that a high proportion of these students are hardly able to communicate in English, after such a number of years, simply because of shyness, inadequate vocabulary, or a lack of the necessary communicative knowledge (Bui, 2006; Tomlinson & Dat, 2004). The root causes for this are difficult to isolate but are likely to include unsatisfactory teacher quality, poorly-paid teachers, uninteresting learning materials, inadequate teaching and learning facilities, passive Confucian learning styles and environments, over-sized mixed-ability-student classes, the lack of language environment for practice, and the out-of-date teaching methodology reflected in curriculum content, syllabus and teaching styles. The list may be endless, but arguably, it is the teaching methods whereby most classrooms have been teacher-fronted (Sullivan, 2000) and examination-oriented that are to blame. It is widely acknowledged that outdated classroom approaches relying almost entirely on stringent teacher-centred methods and rote learning are still firmly in place at the start of the twenty first century.

Though it dies hard, the grammar-translation method of ELT that merely focuses on structure and form is beginning to lose its popularity. CLT has been gradually taking its place and gaining in status since the 1990s. Principles of CLT are described as the central stake of the national rhetoric (Nunan, 2003). Various ELT workshops and seminars have been organised by educational agencies for university and school teachers throughout the country. Meanwhile, quite a few teachers, especially at the university level, have been sent to North America, England, Australia, and New

Zealand for postgraduate programs in TESOL or applied linguistics. There is optimism about the prospect of applying CLT in Vietnamese classroom contexts with teachers expressing their positive attitudes toward CLT with its emphasis on interaction and negotiation of meaning. Many teachers have tried to implement new ideas from those workshops and seminars, combining them with the features valued in the traditional educational systems (Lewis & McCook, 2002). There is, however, “a huge gap between ministerial rhetoric and classroom reality” (Nunan, 2003, p. 609). The aching reality reveals that there are still many English classrooms with more traditional practices than a CLT approach; or where the CLT is initially applied, the situation still does not improve due to the widely held mistaken interpretation that CLT only deals with speaking.

### ***2.2.2 The conflicts***

What has gone wrong? Is CLT incompatible with Vietnamese classroom practice? Is collaborative learning with pair/group work not suitable for Vietnamese students? It appears that the option of integrating Western-style CLT into an Asian educational program reveals a number of complexities and problems. These problems and issues may however be clearly identified when the situation is examined through the SCT prism. In terms of social setting, it should be kept in mind that different norms of education emerge from diverse cultural backgrounds; and various cultural environments define a good teaching approach in different ways (Sullivan, 2000). What is good for CLT in Western or Anglo-Saxon, developed, “inner-circle” countries renders completely different values when applied to non-western, developing, “expanding circle” countries like Vietnam. Briefly, like many other adoptions of policies, theories and practices, CLT is socially grounded. What is inside, under, above, and around the meaning of collaborative learning in classroom is viewed, believed, and analysed differently in Anglo-Saxon culture and in Confucian-heritage society (Pham, 2007).

One of the main hindrances may result from the evident conflict between CLT and prevailing Vietnamese traditional educational values known as Confucianism (Sullivan, 2000). Confucianism perceives education more as a process of knowledge accumulation than as a process of using knowledge for immediate purposes (Hu,

2005). Confucianism applied to classroom practice requires an epistemic teacher-centred mode of learning underlining knowledge transmission. Learners coming to class are expected to listen and absorb word by word from the teacher. The classroom is viewed as a very formal auditorium where orders are strictly administered by the teacher, and the students are supposed to follow. As regards collaborative learning, Confucian learners prefer pair/group work with mutual contribution and perform better in groups with a high team-spirit (Hu, 2005), as it should be remembered that this approach to collaborative work is born out of collectivistic, and not individualistic, culture with its different norms and values. The shift to learner-centred methodology with pair/group work as a principal strategy therefore needs to be carefully and sensitively observed in order to overcome the cultural mismatches between the theoretical foundations of CLT and Confucian traditions of learning.

Also influenced by Confucianism is the system of public assessment which impacts strongly and negatively on what takes place in Vietnamese classrooms. The pinnacle of these public assessments is the national university entrance examinations which are held by MoET in early July every year and are highly competitive. Normally, only an estimated 30% from more than 2 million candidates (MoET, 2009) are accepted to around 400 universities and colleges throughout Vietnam. In Vietnam, the fact that a bachelor degree is regarded as a passport to a comfortable and/or secure life and as a form of gatekeeping to the future forces high school graduates as well as their family to pay at all costs to get to university. So, regarding English language education, can communicative competence still be developed in the English classroom with the strong traditional examination-oriented educational system that exists in Vietnam and other East Asian countries? In these countries, teachers are evaluated by how many of their students pass the institutional and national exams, rather than by how the students learn. Many teachers complain that students and parents worry too much about public examinations (Littlewood, 2007) which focus mostly on grammar, vocabulary and reading comprehension and which are nationally and institutionally held frequently throughout the year. As far as this type of assessment is concerned, social tension occurs between the government's macro strategies on English with communicative inclinations (as presented previously in this section) and the students' and parents' *also* macro demands to pass the public

product-oriented and form-based examinations, which makes the application of CLT a big challenge. A syllabus focusing on both meaning and form with both product and process orientation may be called for to unravel the knot.

Classroom management regarding pair/group work participation is also foreseen as another obstacle. Like teachers in Hong Kong (C. Y. Li, 2003), Vietnamese teachers of English complain that the use of CLT presents difficulties for management of over-sized classroom when all students, usually around 35-50, start pair/group work. Experience has shown that the situation can rapidly deteriorate: the class may turn out to be very noisy, disturbing the formal educational environment and leading to complaints from other teachers in neighbouring classrooms. Additionally, there is the contested issue of student participation. Many students, being different in social, cultural, and academic backgrounds along with individual personalities and motivation, may just sit there, reluctantly participating in the collaborative task, doing something else, leaving active students to do most of the designated task, and hence wasting class time. Unequal and reluctant participation is therefore a real problem; and the situation is worse in such large classes because it is challenging for teachers to oversee group dynamics. This may bring about teacher resistance and unwillingness to implement various pair/group activities as a method of instruction, informed by CLT principles, in the language classroom. Instead, they turn to traditional teacher-control methods of classroom management which are less stressful and which are preferred by students as far as the exam focus is concerned.

Finally, even though collaborative work has been established in particular classrooms, it is hard to create genuine communication in an EFL environment. Unlike ESL students who need to use the target language in everyday life for surviving in the target culture, EFL learners generally do not have adequate access to the target language outside the classroom and usually practise what they have learned only within the classroom boundary (Campbell, 2004). EFL students who all normally share the same first language, as in Vietnam, usually do not have an immediate need to use English in the classroom and, more importantly, can hardly find any opportunity to communicate in English outside the womb of the classroom. It seems unreal, though necessary, to ask them to make authentic communication in English to each other while they can just solve the task in their own language.

Therefore, the mother tongue is quite often heard during collaborative learning tasks to solve communication problems.

Notionally, there is no difficulty that cannot be overcome or mitigated provided teachers are aware of situational constraints of academic, social, and psychological nature. Based on the recommendation that CLT should be adapted rather than adopted into the classroom environment (Littlewood, 2007), action research has been intensively and extensively conducted in the Vietnamese context (P. M. Nguyen, Terlouw, & Pilot, 2006; T. M. H. Nguyen, 2007; Pham, 2005, 2007; Sullivan, 2000; Tomlinson & Dat, 2004). Educators and teachers have been searching for ways to improve the situation, in which more effective and culturally sensitive pedagogies are called for.

With the growing popularity of technology in general and computer use in particular, a couple of innovative ways have been discussed to implement information technology into language classroom practice (Bui, 2006) even though these are still in the *beta version*, i.e. trial stage. It is suggested that together with the development and rising requirements of educational standards, language teachers must now, in addition to the knowledge of the target language, that is English, and of CLT as the current language teaching methodology (L. V. Nguyen, 2008b), possess expertise in CALL; the know-how of CMC is foundational to this, based on the belief that CMCL can be seen to be able to help surmount some of the above-mentioned obstacles in order to achieve effective collaborative learning.

In general, given the inconsistencies between the governmental requirements and present situation of learners' English language competence, the current study ambitiously hopes to mitigate this state of affairs by introducing some of the current approaches to language teaching and learning, with the long-term intent of improving the proficiency of teacher trainees.

### **2.3 The Research Setting**

This section describes the current research site, including an overview of the institution, the students, the uses of technology, and the classroom culture in language teaching and learning.

### ***2.3.1 The institution***

The study took place in the College of Foreign Languages (CFL) at the University of Danang (UD), one of the five leading national and regional universities in Vietnam. UD is located in the bustling city of Danang, the largest seaport and business city in Central Vietnam with a population of approximately 1 million, lying along the sea with an agreeable environment for living and studying. Geographically, the city of 1,300 km<sup>2</sup> is close to three World Heritage sites attracting foreign tourists: the ancient town of Hoi An in the south, the Holy Land of My Son in the south-west, and the former capital of Hue in the north of the city. Danang's cultural history dates back only approximately 300 years, so the area is historically new when compared to the 4,000 year existence of Vietnamese culture. Economically, the city is classified as an industrial zone with a large number of light industries located in the city. Since Danang became one of the five independent municipalities in Vietnam in 1997, the city has experienced very fast economic growth. The economic outputs include seafood exports, furniture, household goods, clothing, and tourism. The income per capita in 2007 ranked third nationwide. Danang city is home to four universities, including, public UD, private Duy Tan University, private Danang University of Architecture, and public Danang Sports and Physical Exercise University. The city also has several other small colleges, numerous schools, and foreign language centres. The city's Human Development Index (HDI) in 2007 ranked third out of 63 Vietnamese cities and provinces.

UD, a comprehensive university, has a long history of development inherited from its member colleges for around 35 years. The University was established in 1995 with the amalgamation of the University of Polytechnics (established in 1975), Danang University of Economics (1976), College of Foreign Languages (1976), College of Education (1985), and Vocational Technical Junior College (1975). It is now composed of six campuses scattered around the city and one newly-established campus in the highland province of Kontum, 400 km south-west of Danang City. With its own capacity, the government's investment, and international collaboration, UD has been developing as a regional multi-disciplinary university, a centre for training and research, and a destination for cultural exchanges of Central Vietnam. Technology, economics, and foreign languages are the training and research

specialisations at UD. The key role of the University is the training of engineers, business leaders, teachers, and researchers, mostly serving the 27 million inhabitants of Central Vietnam. Major training programs include mainly 4 - 5 year Bachelors with around 90 majors, 2 - 2.5 year Masters with 20 majors, and a few 3 - 4 year Doctorates with 12 majors. The number of entry candidates (more than 95% for Bachelors' programs) has grown from approximately 20,000 in 1995 to 40,000 in 2000 to nearly 55,000 in 2008. Yearly enrolment is about 10,000 new students from throughout Central Vietnam's 11 cities and provinces, together with a small number of students from the neighbouring countries of Laos, Cambodia, China, Thailand, and Korea enrolling at the University as part of bilateral or multilateral agreements between the governments. Still, 90% of students are Vietnamese. Annual enrolments of new students are also varied in different colleges, ranging from as many as 3,000 in the College of Engineering (previously University of Polytechnics) to around 1,000 in CFL.

Located in the southeast of the city on a newly built campus, CFL hosts approximately 4,000 students in the 4-year BA programs of foreign languages and cultures, including English, Chinese, Japanese, International Studies, French, Russian, Korean, Thai, and Vietnamese as a foreign language (VFL) in order of popularity and student number. There are two departments of English in CFL: the English Department and the Department of ESP (English for Specific Purposes). The English department offers BA programs in TEFL (Teaching English as a Foreign Language) and Translation/Interpretation as well as an MA program in Linguistics. Every year, the department receives around 70 students for the BA in TEFL program (divided into 2 classes), 250 students in the BA in English Translation/Interpretation program (divided into 8 classes), and 30 students for the MA in Linguistics program. These formal<sup>1</sup> English language programs are physically taught in the campus of

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<sup>1</sup> The term "formal" indicates that these English programs are Majors, including MA in Linguistics, BA in TEFL, BA in English translation/Interpretation, and BA in English for Business. Whereas, English as Minors includes EAFL, Continuing Education English program, ESP, and other evening classes.

CFL. Another formal in-campus English program is the BA in English for Business, recently introduced in 2008 and offered by the other department of ESP.

In addition, there are quite a large number of English (as an additional foreign language, or EAFL) classes for students of other foreign languages. These classes are normally taught by teachers in respective departments; teachers of Russian, who have been retrained in some English courses, will teach English for students of Russian, for example. This less than ideal status quo exists due to the fact that teachers from the two English departments already have to teach too many hours, and that teachers from the other departments conversely do not have enough classes. It should be noted that teachers are paid according to the number of in-class teaching hours; and because of that, it is quite usual to find teachers of English who teach three or four hours in the morning, then another two to three in the afternoon, then two or three hours in the evening, not to mention some having several private classes at home at weekends.

Furthermore, CFL also offers a continuing education English program for people working during the daytime and going to class in the evening. Yearly enrolment for this type of education is as many as 500 students from Danang city and throughout the university catchment area. Though the program is designed and managed by the English department, teachers of English from various departments in the college are additionally invited to teach in these evening classes due to the shortage of staff. In addition, evening classes for conversational English, IELTS, and TOEFL preparation are mushrooming at CFL. These classes are regarded as informal and highly varied in the number of enrolments. Additionally, CFL, as a member of UD, is also in charge of teaching ESP programs as compulsory subjects in the other five member colleges and junior colleges. These ESP programs are provided by the department of ESP; and the ESP staff have to travel to the other colleges to teach the students there. To sum up, CFL English staff have a huge number of teaching hours every year and an adverse set of teaching demands and classroom sites. Academically, this is a burden (Table 2.1).

In terms of the academic staff, there are about 70 lecturers in the English department and 40 in the department of ESP, ranging from very young new graduates to older,

experienced semi-retired professors. Most of the lectures (70%) have received a Masters degree in TESOL, linguistics, or applied linguistics either in Vietnam or overseas, including mainly Australia, North America, Britain, and New Zealand (30% of the MA qualified staff). While there are five lecturers with doctorate degrees in linguistics or education in the English department, the department of ESP has none. In spite of the fact that teacher education and the English language skills of teachers at tertiary level are, according to Nunan's report (2003), truly inadequate nationwide, the CFL English language staff's qualifications (proportionate with the institutional and professional requirements) would appear to ensure a smooth flow of CLT in the higher education context. However, the reality is not as promising as expected partly due to the issues discussed in the previous section, and mainly because the staff have to teach so many hours that they can hardly find enough time, energy, and effort for research, innovation in teaching or even lesson planning.

Table 2.1 Enrolments in different English programs at UD and CFL

Programs	Annual enrolment	Program duration	Total number of students	Department in charge
MA in Linguistics	30	2 years	60	English Department
BA in TEFL	70	4 years	280	English Department
BA in English				
Trans/Inter	250	4 years	1,000	English Department
BA in English for Business*	50	4 years	50	Department of ESP
EAFLE	500	4 years	2,000	Retrained teachers
BA in English (Cont. education)	500	2.5 years	1,250	All English staff
ESP in other colleges	> 10,000	Varied	> 50,000	Department of ESP

\* started in 2008-2009 academic year.

Source: CFL Department of Academics, 2009

Whether the introduction of technology in general and CMC in particular helps somewhat reduce the burden of huge in-class teaching hours for teachers is one of the missions of the current study. The application of CMC in the classroom potentially increases students' level of autonomy and at the same time expands the learning possibilities beyond the classroom wall, which thereby hopefully reduce the level of teacher's manipulation and regulation in the classroom and in the learning process.

### ***2.3.2 The students***

While there are evidently various sources of learners of English at CFL, the focus of this part is on those students who enrol in the formal 4-year BA programs of three types, i.e. BA in TEFL and BA in English Translation/Interpretation in the English department; and the BA in English in Business in the ESP. These students are considered 'mainstream' at the college in terms of proficiency, formality, and a consistent number of annual enrolments.

Having passed the extremely hard national entrance examination<sup>1</sup> held in early July every year, the foreign language component of which is based mainly on grammar, vocabulary and reading comprehension, normally 20% from approximately 5,000 candidates are selected to study at the CFL as students majoring in foreign languages, including English, Chinese, Japanese, French, Russian, Korean, and Thai. Usually, there are about 300 freshmen English majors each academic year, making up the total of 1,200 students at the CFL every year<sup>2</sup>. The new students are divided into ten classes of around 30 each, with the first two allocated to the TEFL program while the other eight assigned as the English Translation/Interpretation program. The assignment between the two programs is based on candidates' selection before taking the national entrance examination. The students within each program are then

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<sup>1</sup> To enter the CFL, candidates need to sit for three subjects in this national entrance examination: Mathematics, Vietnamese literature, and a foreign language. Results from the three subjects added together are ranked in order of competence, based on which top candidates are selected.

<sup>2</sup> As these are 4-year programs, 300 students each year x 4 year = 1,200 students at a certain time.

randomly assigned into different classes. It is in these classes they stay together for the full 4 years of the programs.

In order to get a BA degree in one of those majors, students have to pass around 150 credits, divided into 60 subjects and roughly equally allocated in eight semesters within the 4-year period. While the BA in English in Business is newly introduced, the BA in TEFL and BA in English Translation/Interpretation have been offered over a long history of establishment; they share many subjects (90%), except for some specialised ones particular to the individual discipline. Table 2.2 shows a sample list of the number of subjects, together with the corresponding number of credits that students of BA in TEFL and BA in English Translation/Interpretation had to complete during semester six when the present study was conducted.

Table 2.2 List of subjects of semester six (out of eight semesters)

No. <sup>a</sup>	Subjects <sup>b</sup>	No. of credits <sup>c</sup>
44	Introduction to General Education Theory	2
45	Translation Practice 2	3
46	Contrastive Linguistics	2
47	American Culture	2
48	Technology in Language Teaching and Learning <sup>d</sup>	3
49	Advanced English 2	3
50	Pedagogy 2	3
Total	7 subjects with	18 credits

<sup>a</sup> Students have passed 43 subjects in previous 5 semesters.

<sup>b</sup> Alternatively named courses. Subject and course are used interchangeably in this study.

<sup>c</sup> One credit equals one hour of in-class teaching per week for the 15-week semester.

<sup>d</sup> This newly introduced subject was cancelled in the semester when the current study was conducted due to a lack of facilities.

It is noted that these were compulsory subjects, like all other subjects throughout the eight semesters of the BA programs. Students have no option in selecting which subjects to study, not even the chronological order in the list. In other words,

decisions about designing curricula, providing learning materials, and applying methods of delivery are made from the ministerial and teacher-centred viewpoint, with no learners' stance being taken into account (Mitchell & Myles, 2004).

Presented in Table 2.3 is an overview of some basic background information about the total number of third-year students of English at the CFL, who took 'American Culture' as part of their sixth semester curriculum in the academic year 2008-2009.

Table 2.3 Overview of third-year students of English at CFL

Variables		No.	%	Total
Mean age (Range: 21 - 25)		21.95		
Gender	Female	343	93%	370
	Male	27	7%	
Demographic background	City	179	48%	370
	Province	191	52%	
English at high school	10 years	61	16%	370
	7 years	260	70%	
	3 years	49	14%	
Computer skills	Poor	185	50%	370
	Good	74	20%	
	Fairly good	78	21%	
	Very good	33	9%	

Source: CFL Department of Academics, 2009

Most of these learners had been studying English for seven years at the secondary and high school with a mainly grammar translation approach, while some others received either three or ten years of English during their secondary education depending on the schools they attended. Their linguistic focus was on grammar, vocabulary, and reading comprehension. They studied English because it was a compulsory subject at the secondary level. All they needed was to possess knowledge of the language and to pass the exam, but not to communicate. The learning outcome could therefore be described as more about the knowledge of the language rather than the usage of the language itself. The consequence of this exam-

oriented teaching methodology, as discussed previously, was that while they may be strong in grammar and reading comprehension, their writing, speaking and especially listening were at a very low level.

The biggest hindrance they faced was the switch from grammar translation method at high school to a quite different, rather communicative approach in English language teaching at college. Hence, many students are reported by their university teachers to suffer from stress during the first year when they are confronted with the conflict between the familiar teacher-centred classrooms and the unfamiliar learner-centred ones. Moreover, due to the lack of previous contact with English-speaking environments, they had many difficulties in listening and understanding their college teachers (both native and non-native) who used mainly English for instruction in the class. This is evident from the data in the table, which shows 52% of the students were from the country where hearing an English word outside school was nearly impossible. It is however important to observe that the students gradually become accustomed to the new learning style over time. By the time this current research was conducted, the students expressed their preference for more interaction with the teacher and classmates. They also requested reducing the level of teacher-fronted classroom methods, considered as boring.

As far as computer experience is concerned, three matters from Table 2.3 need to be highlighted: gender, cultural background, and computer skills. It should be kept in mind that 93% of these potential learners were female and were reportedly less computer literate than their male counterparts (L. V. Nguyen, 2008b). Another concern was that 52% of the learners came from the country where access to computers and the Internet was evidently seen to be much more limited. These two factors no doubt contribute to the clear indication shown in the table that 50% of the students had very limited knowledge of using computers. However, the biggest advantage of applying the technological facilities for this group of users was the age range (21 - 25) of learners. Learners of this age span can be considered active and dynamic (Levy, 2002): they are neither too old nor too young to be able to adapt to this new (and rather technical) learning environment.

After studying at the college for four years, those studying the BA in TEFL program would become teachers of English in K-12 educational level (primary, secondary and high schools), including some with high distinction results being selected and starting their job as junior lecturers at universities or colleges. Those attending the BA in English for Translation/Interpretation and English for Business programs would join the labour market as tourist guides, or translators/interpreters, and so on. In addition, many of the students seek jobs in the increasing number of foreign companies where they can be a secretary, an accountant, or even a manager. They use their English as a tool to study other vocational skills and to communicate with their foreign colleagues in the work place.

### ***2.3.3 Uses of technology***

Though there are not as yet any specific indications of the movement of applying ICT in language education from literature, Vietnam has recently conducted several national and international conferences related to strengthening the application of ICT in education and administration management as part of Decree 64 (Vietnamese Government, 2008b). Productively, the academic year 2008-2009 was themed by the Ministry of Education and Training as "The Year of ICT Application", connecting schools to the Internet and integrating new technologies into the curriculum. This promotion, which aims to improve teaching quality and renovate educational management, is considered as one of the initial steps in introducing and naturalising technology into the Vietnamese educational system.

As in many other universities and colleges, the use of computer technology is still quite limited at the CFL, both at the managerial level and in the application to teaching and learning, in spite of having been promulgated and encouraged from the governmental level (Vietnamese Government, 2008b). While there is a website for the college, it is in Vietnamese, in spite of the value of English as part of the internationally cooperative inclination and the college's function as an educator in foreign languages. The website is mainly used for administrative announcements, news, and introductions about the college, rather than for communication. College announcements are still primarily placed on notice boards scattered around the campus. Intended viewers of the website are simply visitors who are attracted by the

two missions of the college right at the introduction page: (A) training foreign language teachers and specialists for Highland and Central Vietnam; and (B) conducting research and providing services related to languages and cultures. The two missions are concretised into several duties and responsibilities:

1. offering programs in foreign languages at undergraduate and post-graduate levels;
2. teaching English for specific purposes for students of member colleges;
3. fostering teachers of English from schools;
4. teaching Vietnamese language and culture for foreigners;
5. conducting research and providing services related to foreign languages and cultures;
6. enhancing national and international cooperation; and
7. teaching and administering international certificates in foreign languages.

Also on the website, viewers will have an overview of the college's management organisation, training programs, scope and capacity, and infrastructure in a brand new campus with 60 classrooms, lecture halls, and administration section. In addition, the campus has a library with 10,000 titles serving its staff and students in their study and research. Finally, presented on the website is the college's goal of endeavouring to become a leading research centre for foreign language teacher trainers and specialists of high quality for the socio-economic development of Highland and Central Vietnam.

The constraints of technology-supported communications are also reflected in the fact that staff members use different email systems based on their preference. Looking through the email addresses of the college staff even from the top levels, there are a number of Yahoo, Hotmail, Gmail, and several other free email service providers. Of course, this will not matter if formality and consistency are not taken into account. The explanation of this inconsistency would be that the issue has yet to be the priority of the college and that the principal means of communication has yet to be technology-mediated.

In terms of teaching and learning, communication between teachers and students, and among students themselves are principally face-to-face in the classroom. The use of e-learning software platforms like WebCT and Blackboard is just a somewhat distant prospect. Even though a project to use Moodle, an open-source course management system, was mentioned in meetings some years ago, this has so far remained an idea on paper.

Nevertheless, there are still a few teachers who are keen on the application of computer technology to teaching and learning, asking their students to send written work to them via email so that they can give feedback and correct them before going to class. In addition, the use of office applications like PowerPoint for presentations in class is always encouraged by these teachers. There are also some who make use of the computer lab, which was set up in 2005, for their students to practice word processing and surfing the Internet to look for learning materials. It is noted that during the current study this was the only lab (Figure 2.1), consisting of 36 computers, expected to be used by the around 4,000 foreign language majors at the college.



Figure 2.1 The computer lab at CFL

Finally, experience with computers among students is also varied. According to a survey as part of the current study, only 35% of the students had their own computers at home. The remaining 65% had to go to the Internet shops outside the campus to use a computer and get access to the Internet, which in 2008 cost about half of their lunch money for one hour of use. On the other hand, quite a few other students (30% of ‘fairly good’ and ‘very good’ combined, according to the survey) were very fluent with computer use. It is reported that these students very often used computers for chatting, and sending and receiving emails with friends; some others even wrote blogs and wikis; still others had their diaries on Twitter or, more popularly, Facebook. However, the use of these Internet facilities was just for personal pleasure and entertainment. Bringing them to class for educational purposes was still somewhere in its prenatal stage.

#### ***2.3.4 The way to the classroom***

Turning away from a busy street full of traffic into a smaller road, one can see the newly built campus of the CFL in the distance. Like many universities and colleges in Vietnam, CFL campus is located in a densely populated residential area. Since the beginning of the construction, still incomplete at the time of the current study, various shops and services were mushrooming to serve a large number of students and staff. Along the road, one can see a coffee shop, a refreshment shop, a hairdresser’s, a photocopy shop, an Internet shop, another coffee shop, yet another coffee shop, one more Internet shop, a book shop, another photocopy shop, and even ‘flat for rent’, among many other premises standing side by side opposite the campus gate. These shops and services are run and managed by local residents who use the front part of their house for these kinds of business. These people are seemingly happy with the existence of the CFL as a symbol of intellectual growth and achievement for the region and as the source of a living for their family. Even the campus gate itself cannot escape from the business-related banderols advertising for short courses in foreign languages, business, and informatics, for BA and MA programs from other universities, both domestic and foreign, for bank accounts, and for a new type of shampoo.

One step into the gate are two tole-covered garages, one on the left for staff only and one on the right for students. While the staff garage is full of motorbikes, mopeds, and scooters, the student garage is overflowing with bicycles along with quite a few scooters. Whereas the staff garage is free, the student garage charges 1,000 dongs (5 US cents) per bicycle. A wide path between the two garages leading from the gate to the newly-built five-storey, U-shaped, and light-yellow-painted building is obstructed by a large white notice board where one can see a variety of managerial and administrative announcements, mainly made to students. Mostly, the announcements remind the students of the tuition fees, examination results, temporary classroom changes, and the required appropriate dress style, among other things. Some steps further along is another notice board with similar content to ensure students are well informed before going to class. Here in the CFL, like many other colleges, uniforms are not required. Nevertheless, students are asked to dress formally with ankle-length trousers, shirts with collars, and shoes or sandals; no shorts nor slippers are permitted. Female students are requested to wear ‘ao dai’, a Vietnamese traditional dress, on special occasions.

Students usually go straight to their classroom or hang around, chatting with friends along the corridors, while teachers may like to go to the common room for a cup of tea before starting their teaching. It is here in the common room, notices for teachers are usually found on the wall or placed under the glass of the large table.

The class will not start until the bell rings. All teachers leave the common room for their class where students are already waiting for them, as expected. Being on time is strictly observed in the college. A late student has to enter the class in a timid manner with an excuse to the teacher who often accepts this but with an uneasy facial expression, indicating that she/he should not be late next time. Following the government’s working hours, classes in the CFL, like many others, start as early as 7 o’clock for the morning session or 1 o’clock for the afternoon session. There are usually 5 in-class teaching hours in the morning and another 5 in the afternoon. Each 5-hour session usually covers two subjects because each subject is normally allocated two or three in-class teaching hours (per week). There is a 10-minute break after each teaching hour. Students attend either the morning or the afternoon session according to their class timetable for the semester. More precisely, to ease the administrative

work, all students at the same level go to class in only one session of the day for the whole week throughout the whole semester. During the second semester of the academic year 2008-2009 when the current study was conducted, for example, first and third year students occupied the afternoon sessions, while the morning sessions were for second and fourth year students. These were then shifted in the following semester. Similarly, teachers who have classes in the morning will normally have a break in the afternoon before going back to the campus for evening classes, or in fact to teach somewhere else. Quite often, teachers describe their teaching as ‘ploughing’ (a field). One of the common rhetorical questions of greeting between English staff is ‘how many hours do you plough this morning?’, for example. By the same token, lecturers are oftentimes referred to as ‘teaching workers’, by the media in recent debates about the workload that university lecturers have to take nationwide. Clearly, the synchronic style of administration and teaching reflects in the timetable management, which is, by some means, not much different from factory workers or military soldiers.

### ***2.3.5 In the classroom***

Back to the classroom where noises made by the students playing and chatting are stopped by a moment of silence when the teacher steps into the room, one can see around 30 students sitting in rows, facing the blackboard, getting ready for the lesson by listening attentively to the teacher. There is not much furniture in the room. As well as the many desks arranged in rows for students, there is a teacher’s desk, and a wall clock right above a blackboard, four ceiling fans, and curtains on the door and the four glass windows to protect the room from the direct sunlight (Figure 2.2). Other teaching-support facilities, such as cassette players, screens, and LCD projectors are available in the staff common room, and can be borrowed by students when needed. Usually, teachers who own a laptop can take it to the class; others can borrow one from the common room.

The facilities are however much better in the computer lab which is well-equipped with modern technology-supported learning and teaching facilities (see Figure 2.1). All of the aforementioned facilities are available in this room, together with a TV, a VCR, and a number of networked computers, enough to accommodate the whole

class of 30 - 35. The lab is air-conditioned. In spite of this, other expensive supplies such as photocopiers or printers are not available for students on campus. Students have to walk outside, opposite the campus gate to have learning materials (provided previously by the teacher) photocopied in one of the several photocopy shops on hand. The photocopy fees are paid from the class fund contributed by class members. Normally, it is the class monitor who does this job for the whole class right before class time.



Figure 2.2 A classroom at CFL

The classroom atmosphere can be described as a family, as characterised by Kramsch and Sullivan (1996), where the teacher plays an eldest brother/sister's role (or, if one is old enough, one can play a parental role) while the students are brothers and sisters. They know each other rather well from having learned together for a long time. In the Vietnamese context, such more senior family members are given respect, and others defer to them. Additionally, using a Western expression, the teacher in the classroom is really more of the so-called 'the sage on the stage' than 'the guide on the side'. In other words, the teacher is granted undisputed power and respect by the hierarchical teacher-student relationship in this Vietnamese teacher-centred classroom. The classroom behaviour is broadly controlled and directed by the

teacher. This is endorsed in Fu's (1995) comment: "what and how teachers do and say things greatly affects the atmosphere of the class community" (Fu, 1995, p. 199). The students can be very noisy or quiet, and active or passive, for example, depending on the teacher's personality, attitude, and mood. Nevertheless, the teacher tends to endeavour to stimulate and sustain a positive class atmosphere. At this point, it is seen that the teacher in a Vietnamese classroom does have power, but at the same time, he/she also has clear responsibilities in building a learning atmosphere in order to attain required goals set up by higher levels of administration, both institutional and national.

Despite being encouraged by the teacher to contribute ideas in class discussion, many students hesitate to participate because of lack of confidence mostly in their language competence and partly in sharing personal opinions. For many, verbal perfection is traditionally and predominantly more important than speaking a lot but incorrectly (Lewis & McCook, 2002; Tomlinson & Dat, 2004). Still, active students do contribute their ideas during class discussions. Sometimes, in order to create opportunities for many other students to talk, the class is requested to do group or pair work, when a lot of playfulness and laughing are observed, so as to attain the ideals of mutual obligation, harmony, and unity. Arguments and negotiation are sometimes experienced in these group exchanges among peers, while disagreeing with the teacher is scarce, and is generally considered by the students as a rebellious behaviour. In addition, both English and Vietnamese are heard in group work in this monolingual context. The further the teacher is away, the more Vietnamese is used in these collaborative activities. Individual groups later on take turns to report their discussion to the whole class. However, ideas from the teacher are considered ultimately right; or if one or two students do not agree, they remain silent in a secure manner. Those answers by the teacher are what students expect to 'learn' as one of their main duties and purposes of going to class. Many students express their uneasiness when the teacher does not give them the answers, by asking them to think more instead. The students' learning style is thus more of listening and perceiving knowledge imparted by the teacher than justifying, challenging, or negotiating those ideas (Lewis & McCook, 2002; Sullivan, 2000; Tomlinson & Dat, 2004).

As for textbooks, a series of reading materials are often compiled by a, normally senior, teacher in charge of a particular course. This can be better described as a course reader and used by all teachers who teach the same course in a particular semester. Teachers may have some flexibility to bring in some more learning materials of different kinds, including books, audio and video tapes, etc. However, these additions are only secondary; students first need to absorb the compiled reading materials as a primary source for exams. It is necessary to make sure that all the students in different classes of the same course receive the similar required level and amount of information and knowledge related to that specific course because they have to take the same exams during the semester.

Two sources of knowledge the students expect to acquire are those from the reading materials and answers from the teacher. Throughout the lesson, the students tend to add a lot of notes from the teacher's lectures to the photocopied learning materials mainly to prepare for examinations, which are principally product-oriented. One exam, called an on-going mid-term exam, takes place in week 7 of the 15-week semester; and the other one, the final exam, is taken at the end of the semester. These exams are more often summative than formative, and prepared each year by the group of teachers who teach the same course. All students in the same course must sit the same exam. Quite a few students fail some of these exams. If they fail the on-going exam, they have another chance to resit in a supplementary one later within that semester. Failing the final one, however, means they have to unfortunately take that course again during the following year. Therefore, exam periods are always the most stressful time for most of the students. Finishing the final exam signals the completion of a subject in order to progress to another one, one after the other toward the end of the 4-year program.

The Confucian tradition is evidently reflected in this CFL classroom when one goes back to the faraway history of Confucian philosophy in which highest in the social ranking was the king, followed by the teacher, and the father in that strict order. In other words, the teacher played a more important role than the father in individual educational and social development; and if a person was your teacher at one time, you would regard him as a teacher for a lifetime. Likewise, if somebody was your classmate at one time, he/she would be your classmate for a lifetime. It is with your

classmates that you develop lifelong relationships and obligations, as observed by P. Sullivan (1996) in her study on the Vietnamese sociocultural influences on classroom interactional styles.

The society, along with its epistemology and philosophy, has of course changed considerably and thoroughly toward a more modern ideology. However, shadows of Confucianism are still readily perceived everywhere in the social, cultural, and especially educational footsteps, and ambiguously observed in the classroom.

#### **2.4 The Researcher's Background**

I started my teaching career at the University of Danang, Vietnam in 1996 when I finished my undergraduate program of BA in TEFL. First I worked in the College of Education for two years; later, due to the University's reorganization, I was transferred to the CFL, where I have been located ever since. During these first years, I was in charge of teaching general English skills and American/British Culture for the first- to fourth-year students in BA programs of English for Translation/Interpretation and TEFL.

The personal interest in using computers in language teaching accompanied my initial explorations of computer technology in general, with the purchase of my first computer in 1997. The computer cost several of my monthly salaries, ran on Windows 3.2, with a 500-megabyte hard drive and no other external plug-ins except for a 5 1/2-inch floppy drive. When I needed to install new programs, the only option was to take the CPU (model 486) to a computer shop in town where they opened the case and got connected to the hard drive. Sometimes, I tried to do installing work myself to save money; but the outcome was that most of the time I had to replace the hard drives due to errors, the later ones having more capacity than the previous. What I could do with the computer for my teaching was to type my lesson plans and activities, and prepare PowerPoint presentations with various quizzes, using Microsoft Office 97. These files were copied to a floppy disk, and taken to the department office for printing. It was class monitors who were in charge of multiplying the 'master' copies, and then delivering to students during class-time. The PowerPoint presentations were shown from a 14-inch CRT monitor to the students of around 30-40 in number.

My interest in ICTs escalated as Vietnam came, though late and slowly, to Internet in 1997 when the first service was offered (Internet World Stats, 2010). Growth in popularity has been exponential since 2000s. I had chances to be familiar with educational programs, from Frontpage and HTML Designer that helped design websites offline and later upload onto the Internet, to Hot Potatoes and Easy Test Maker that supported in making quizzes and exercises, and to Multimedia Builder, Macromedia Flash, and Macromedia Toolbox for designing lessons with video and audio capacity. Working with these software and programs over an extended period allowed me to become competent in manipulating and applying user-friendly computer programs in my teaching.

As my involvement in CALL went deeper, I was selected by the Centre for Continuing Education, where I taught part-time in the evening, to attend an online postgraduate course in ‘Teaching Online in Higher Education’ provided by the University of Texas - Pan America in early 2003. I was introduced to a Learning Management System (LMS), then known as WebCT, for the first time. The course provided basic information on how to make use of various tools built into WebCT in teaching and learning. Having finished the course, I was sent to Hanoi National University for a workshop in a similar field, e-learning, by World University Service of Canada (WUSC), as part of the project of upgrading teaching quality in the CFL.

On coming back from Hanoi, with support from two Canadian interns from WUSC, I coordinated a series of workshops for language teachers in the College. These language teachers’ knowledge of computer technology varied greatly, from many having never used Microsoft PowerPoint before, for example, to some being quite perceptive in technology use. The main focus of the workshop was to help teachers bring their teaching materials online (L. V. Nguyen, 2003, 2004; L. V. Nguyen, Grevstad, & Fong, 2003). This first workshop series in the new area of e-learning was evaluated as successful and appreciated by both the Rector of the College and the President of the University.

Through various activities relating to early CALL, I realised that there were two main factors that influenced the context of applying ICTs to language education: those from institutional discourse and those from teacher discourse. While the

movement was supported from official and institutional policies (at least at the university level), there were barriers from the teachers' side, mainly due to lack of time and effort (cf. section 2.3.1), lack of necessary skills and expertise, and therefore some resistance to 'change'. The world of the language teachers at CFL was much more complex than anticipated and a simple treatment of ICTs as add-ons to conventional practices seemed impossible.

As time went on, I learned that what concerned most was less the technology itself which, though expensive, could be attained and manipulated (Egbert, 2010); rather, it was a theory behind these computer programs that counted. For me, entering the avenue of instructional technology in language education with a certain level of technology expertise was good, but not enough. As presented, we already had tools for uploading teaching materials; we had websites with lesson plans and exercises and quizzes. However, how we could assess these materials; how we could evaluate learners' learning process; and most importantly, how we could persuade other teachers to become involved in the new, but challenging, area were what we were looking for. In other words, I moved an interest in CALL from a technology-driven approach to a more pedagogy-driven approach to technology in education; and I have been in search of answers for the latter ever since.

Thanks in part to my personal achievements and mainly to my academic contributions to CFL, I was promoted to the position of Deputy Head of Academic Affairs at CFL in April 2006, when I came back from the University of Queensland, having earned my MA degree in TESOL Studies. Among many responsibilities that I was in charge of was cooperating with other faculties to create and upgrade learning materials and training programs using technology in language education. However, by the time I planned to introduce the LMS of Moodle to the College staff, I had received scholarships for my PhD project. I left for Massey University to further my study in CALL in late 2007.

As indicated throughout the current study, I would like to research for answers to the above questions from classroom practices; and the subjects of the study were our students. My main reason, in this particular context, was that approaching students, with their particularly high motivation and openness to learning, was easier than

starting with the teachers, who were quite often overwhelmed by their dense teaching schedule. Second, positive results from the research per se would provide the teachers with evidence of the need to integrate technology into the language classroom, taking learners' language competence into consideration. Finally, beyond a 'change' in classroom practices with technology enhancement would be a 'change' of how the language learning process was viewed and should be progressed from a cognitive perception to a more sociocultural perspective.

It can be concluded that I am not neutral in conducting this research on the application of various CMC tools in language education. Warschauer asserted that "behind every research method lies a belief, and behind every belief lies a person" (Warschauer, 1999, p. 188). I have a belief that technology may in a certain aspect help improve and enhance learners' language proficiency. The current research hence looks for evidences to confirm my belief. In addition, I argue for the assumption made by Bogdan and Biklen (2003) that "no matter how much you try you cannot divorce your research and writing from your past experiences, who you are, what you believe and what you value. ... The goal is to become more reflective and conscious of how who you are may shape and enrich what you do, not to eliminate it" (Bogdan & Biklen, 2003, p. 34). Finally, the journey from being a user of computer technology in English language teaching to becoming a researcher of ICTs in language education accompanied my beliefs, my experiences, and my expectations. In this journey, I would use my experience in my experiment to achieve my expectation.

## **2.5 Summary**

This chapter shows that there are several drives for conducting the current research. At the macro governmental level, there is concern to enhance English proficiency and develop computer technology in tertiary education. At the local level, there are issues relating to the institution's awareness and capacity, teachers' preference and expertise, and students' ability and perception in introducing information technology into the pedagogical environment.

Grounded in these concerns, the focus of this study, therefore, is to investigate whether the application of computer technology in general and, more specifically,

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CMC would help to address the problems of English language teaching and learning at the CFL with its own particular sociocultural background and especially its classroom culture as discussed. Overall, what can CMC do in the Vietnamese EFL setting where the implementation of CLT has not brought forth the outcomes anticipated by its supporters? Answering this critical and comprehensive question will help to facilitate the needs of the students through apposite uses of computer-mediated communication.

## **CHAPTER THREE: LITERATURE REVIEW**

### **3.1 Overview**

Over the last 20 years major paradigm shifts in language learning and teaching have occurred moving from structural to cognitive/constructivist, and to sociocognitive approaches (Zuengler & Miller, 2006). These changes in perspective in language education have paralleled developments in computer technology from mainframe to personal to networked computers (Warschauer, 2004). The nature of computer use in language teaching has changed across the three theoretical perspectives accordingly. In structural frames, computers provide unlimited drills, practice, tutorial explanation, and corrective feedback. In cognitive frames, they provide language learners not only with comprehensible input and analytic and inferential tasks but also with opportunities to produce comprehensible output (Barab, Evans, & Baek, 2004; Lamy & Hampel, 2007). In sociocognitive frames, they provide alternative contexts for social interaction where learners can work with text or negotiate meaning with peers and teacher, facilitating access to existing language instruction, discourse communities, and the creation of new ones (Kern & Warschauer, 2000).

From a sociocultural perspective, language instruction has been viewed not only in terms of providing comprehensible input, but also in terms of helping students enter into the kinds of authentic social discourse situations and discourse communities that they would encounter outside the classroom (Lamy & Hampel, 2007). This interdisciplinary and socially informed approach sheds light on the role of social interaction in creating an environment to learn language, learn about language, and learn through language (Warschauer, 1997, 2005). A considerable amount of research on language learning within the broad social and cultural perspective has shown that modern technology can enhance an interactive way of communication (Kern & Warschauer, 2000; Warschauer, 2005).

The following literature review on the relationship between sociocultural theory, contemporary language teaching approaches and methodologies, CMC both synchronous and asynchronous, and computer-mediated collaborative learning, will set a theoretical framework for the current study.

### **3.2 Sociocultural Theory**

According to Torres and Vinagre (2007), the pedagogical framework that supports collaborative language learning can be traced back to Piaget's (1932) constructivist theory and to Vygotsky's (1978) sociocultural theory (SCT). Constructivism, as a theory of learning, posits that learners learn by actively constructing their own knowledge. From Piaget's constructivist view, learning is an organic metacognitive process and learners construct meaning in a scaffolding of perspectives; knowledge is not discovered but constructed by an individual through his/her interactions with the environment. Collaborative learning, in this sense, provides students with a means to access multiple perspectives on a concept or an idea.

However, although the idea of collaborative learning as a pedagogically desired outcome of constructivist pedagogies in online settings is widespread in the literature of CMCL, and the Internet has long been believed to be a typical constructivist learning environment as it enhances collaboration and interaction through many web tools and facilities, it still "requires further probing" (Lamy & Hampel, 2007, p. 198). This perspective, for example, does not explain precisely how learners use language-related collaboration to become competent members of a speech community, to gain important cultural knowledge, and to develop literacy skills (Warschauer, 1997). In addition, constructivism also ignores many important factors possibly contributing to the success or failure of learning, including learner characteristics, teacher role, and institutional and societal settings. Whereas the constructivist model views learning as a process by which a learner internalises knowledge, whether constructed and/or experienced in interaction with others, the sociocultural approach focuses on the nature of the learner, of the world, and of their relations. Knowledge is thus constructed in joint activity, and learning is a process of participating in cultural and social practices. In other words, this broader theoretical

frame principally “focuses on interaction and social aspects of learning” (Lamy & Hampel, 2007, p. 23).

SCT, or cultural psychology or cultural-historical psychology, is defined as the study of “the content, mode of operation, and interrelationships of psychological phenomena that are socially constructed and shared, and are rooted in other social artefacts” (Ratner, 2002, p. 10). The theory, originating from the work of Vygotsky (1978) and colleagues, has had considerable influence in the fields of education, and more recently, second language acquisition (SLA), and computer-assisted language learning (CALL). Examining Vygotsky’s contributions will help understand how SCT can be applied to CALL (Warschauer, 2005) in general and CMCL in particular.

Vygotskian theory requires understanding of the interrelatedness of the three aspects of development, namely cultural-historical, interpersonal, and intrapersonal or individual (Figure 3.1). Interpersonal processes between people will be hardly comprehended without understanding individual characteristics. Similarly, knowledge of the broader cultural-historical context is also required in order to understand the interactions between these individuals.

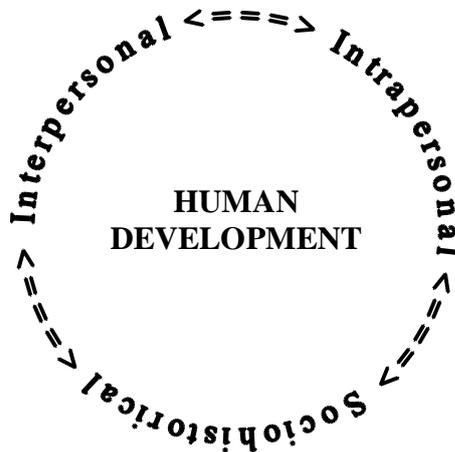


Figure 3.1 Vygotskian circle of human development

According to Vygotsky (1978), knowledge is first seen on the social plane and afterwards becomes internalised on the psychological plane and that knowledge is sociohistorically mediated. In SCT, learning is a process that entails not only

internalisation of the knowledge of the learning task, but also transforming and using the internalised knowledge for other purposes in the process of the learner's social and cognitive development. The theory stresses the importance of social interaction in creating a learning environment within a broad social and cultural context. In other words, a primary tenet of Vygotskian psychology is that individual mental functioning is inherently situated in social interactional, cultural, institutional, and historical contexts (Vygotsky, 1978). Therefore, to understand human thinking and learning, the context and setting in which that thinking and learning occurs must be examined thoroughly (Bonk & Cunningham, 1998).

Among many aspects of SCT, the main principles, including genetic analysis, mediation accompanied by activity theory, and the zone of proximal development along with the issue of internalisation, are seen as relevant to the rationale behind the CMCL in a CLT approach.

### ***3.2.1 Genetic analysis***

Genetic, or developmental, analysis, as a new research methodology, is proposed by Vygotsky (1978) to study the culturally organised human mental system. This approach, as the heart of the SCT (Lund, 2008), is motivated by the hypothesis that various aspects of mental processes can be understood only by comprehending their origin and the transitions they undergo (Wertsch, 1991). The method includes four different genetic domains (Vygotsky, 1981), namely (1) phylogenesis - the development of species during human evolution, (2) sociocultural - the development of human cultures, (3) ontogenesis - the development of an individual over the lifespan, and (4) microgenesis – the development of an individual during a particular task.

According to Lantolf (2006), the genetic method focuses on the history or formation of the system, and not on its fully formed and smoothly functioning version as represented in the adult mind. Because of this, Vygotsky attentively concentrated most of his empirical studies on young learners while they struggled to gain control over mediational means, especially language as the most powerful of human mediational artefacts, in their communities. The learners in his genetic experiments were instructed to carry out challenging tasks with some form of mediation as

supporting tools. Vygotsky then examined if and how they made use of the external support to control their activity.

This novel approach to research methodology suggests that the application of technology in education in general and in language teaching and learning in particular needs to be placed in a “broader historical, social, and cultural contexts” (Warschauer, 2005, p. 43) in order to be understood. In other words, the genetic method helps to extend our view when examining a phenomenon or event. That is, the explanation and understanding of a given phenomenon or event should always be situated in an all-encompassing social and cultural framework.

### ***3.2.2 Mediation and activity theory***

Another important construct in the SCT of learning that is significant to CMCL is the notion of mediation (Lantolf & Thorne, 2007) which is one of the three main themes that runs through Vygotsky’s formulation of a sociocultural approach to mind. Vygotsky claimed that “higher mental functioning and human action in general are mediated by tools (or ‘technical tools’) and signs (or ‘psychological tools’)” (Wertsch, 1991, p. 90). In Vygotsky’s view, such forms of functioning as logical thought, problem solving, critical thinking and learning are the result of the interaction of the human mind with the environment mediated by those tools, including symbolic/psychological tools (numbering systems, art, music, and language), and to a lesser extent by physical tools (material objects), which have been culturally constructed. It is therefore reasoned that human cognition cannot be understood separately from the society and culture in which it develops. In other words, viewed from this perspective, social and individual psychological activity is mediated by the tools and signs in one’s sociocultural milieu (Bonk & Cunningham, 1998). Consequently, the development of human thinking is socially and culturally constructed (Lantolf, 2000). Over time, human societies and cultures create psychological and physical tools to be used and modified by new generations.

Because individual development is dependent on institutional settings and cultural artefacts in one’s learning environment, technology - as mediational tools - advances not only to alter the available cultural tools and settings, but also to modify the human mind. For Warschauer (2005), the significant feature of these mediational

tools is not their abstract properties, but how they fundamentally transform human actions, and alter the flow and structure of mental functions. Learning is therefore located in the interplay between culture and individuals and it implies the transformation of learners in terms of the nature of the tasks they master. With regard to second language learning, Lantolf (2000) examined the domains of mediation as social mediation (mediated by others in social interaction), self-mediation (mediated by the self via private speech), and artefact mediation (mediated by language, tasks, and technology).

By the same token, Vygotsky (1981) advocated the use of semiotic tools, especially language, to mediate interpersonal and intrapersonal development. Language, as a semiotic system documenting a culture, is a medium through which people jointly interact and a unique tool that exercises the most influence on higher order thinking. Semiotic mediation is important to discourse in that actors use language to share meaning, but at the same time, language shapes the activities they engage in and their interpretations thereof. In Vygotsky's theory, language is the mediating link or psychological tool for inducing learning in social situations. Language is the tool with which meaning is constructed, but the character of the tool shapes the resulting construction. Just as a hammer implies the use of nails rather than screws or pegs, the ways in which languages and other symbolic systems organise ideas imply the kinds of knowledge that is constructed. Because every language encodes the epistemology of its users, the cultural sources embedded in the linguistic codes may come to shape the language users' understanding of the world. Human beings initially rely on language for communicative needs. As time goes on, the semiotic signs appropriate their thinking within their own culture. Vygotsky's widely accepted stance is that the use of language scaffolds learner's intellectual development. Everyone's thoughts and behaviours are socially and culturally mediated by the language which reflects the norm of a society.

The discussion of mediation has been further extended to include various modes of communication, contrasting the characteristics and functions of spoken and written text (Lantolf, 2006; Lantolf & Thorne, 2007; Wells, 1999). Wells, for instance, argued that the second order symbolism of written text in combination with the relative permanence of written artefacts contribute to the "relatively great

abstractness of writing" (Wells, 1999, p. 141). He characterised written text as epitomising second order symbolism because in writing, letters stand for words and words in turn stand for ideas. He argued that the longer time required to produce written texts means that they are well suited for use in individual reflection, but that the dialogic exchanges in speech, with their quick production and response, are better suited for use in collaborative action. It stands to reason that electronically mediated communication, whose nature falls somewhere between formal writing and informal speech depending upon the context in which it is used, would support both reflection and dialogue.

Other socioculturalists, such as Leontiev (1981), developed the concept of mediation further to introduce 'activity theory', previously operationalised in Vygotsky's work. Activity theory is defined by Kuutti (1996) as a "philosophical and cross-disciplinary framework for studying different forms of human practice as development process with both individual and social levels interlinked at the same time" (Kuutti, 1996, p. 25). This theory emphasises that human understanding is not only mediated by physical and symbolic artefacts but also by the social distribution of labour and cultural practices (Engeström, 1999). According to Leontiev (1981), even though participants might display the same overt behaviours during completion of a task, the activities in which they are engaged might be quite different based on the differences in motives or goals of the learners. The idea is later further explained by Barab, Evans, and Baek (2004) and Lantolf and Thorne (2007), who described the theory in activity systems, within which participants often differ in both the outcomes they work towards and the ways they bring about any one outcome. As indicated by this theory, the context and the mediating tools are catalytic components of an instructional setting, capable of changing the pedagogy as well as the institutional and sociocultural settings (Wertsch, 1991).

As a set of basic principles that constitute a general conceptual system rather than a predictive assumption, activity theory commences with the notion of activity as a unit of analysis for understanding human cognition and behaviour. The theory focuses on activities which are composed of a subject, and an object, mediated by a cultural tool (Figure 3.2), and which are carried out by humans when assisted by tools. Tools are created and transformed during the development of the activity itself

and carry with them particular culture-historical remains from their development. Therefore, the use of tools is an accumulation and transmission of social knowledge. Tool use influences the nature of external behaviour and also the mental functioning of individuals.

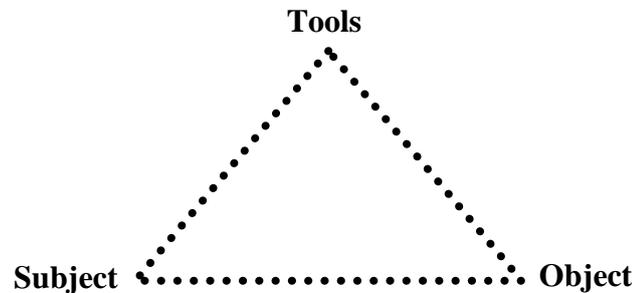


Figure 3.2 Vygotskian mediational model

To sum up, the examination of mediation, together with activity theory, as a potential framework of research on human-computer interaction (Kuutti, 1996) and human-human communication via computers, proves that new technologies may transform prior forms of human activity, and that computer-mediated interaction is therefore not simply a combination of a traditional form of written language plus computers, but rather we now have a completely new form of communication that needs to be uncovered (Warschauer, 2005).

### ***3.2.3 Zone of proximal development and internalisation***

The zone of proximal development (ZPD) is another idea put forth by Vygotsky as one of the “most profound contributions to the educational debate” (Daniels, 2001, p. 56) and one on which CMCL framework is based. The ZPD, according to Lantolf and Thorne (2007), has had a significant influence in a variety of research areas, including developmental psychology, education, and applied linguistics. The concept is most often associated with social learning, also called apprenticeship learning (Blyth, 2008). The most frequently referenced definition of the ZPD is by Vygotsky:

The zone of proximal development ... is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined

through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 86)

In the regime of second language acquisition, the definition of ZPD was reformulated by Ohta (2001) as:

The distance between the actual developmental level as determined by individual linguistic production, and the level of potential development as determined through language produced collaboratively with a teacher or peer. (Ohta, 2001, p. 9)

In other words, the ZPD is commonly understood as the difference between what a person can achieve individually and what that person can potentially achieve with the help of others or symbolic tools. Receiving support from the more experienced peer allows a novice to work at a level of competence they would not be able to attain on their own.

According to the doctrinal interpretation of the ZPD (Lantolf & Thorne, 2007), individuals can bridge the gap with the help of an expert. Through social communication, an expert can give an apprentice the ability to do something. This interpretation includes the idea of skills acquisition, scaffolding and peer assistance (Kinginger, 2002), which have had a considerable impact on the field of language education and research. An expert, e.g. a teacher or more capable peer, scaffolds by providing a novice with more help and guidance in the beginning, gradually reducing this guidance as the novice advances further towards his/her potential. A person can thus reach a higher level of development through the help of somebody more capable.

This conventional interpretation of the ZPD has been challenged in recent years. One emerging view is what Daniels (2001, 2005) terms the collectivist interpretation, which is endorsed by Lantolf (2000) and Wells (1999). According to this stance, the emphasis is not on the transfer of skills or ability from an expert to a novice; rather it is on the creation of meaning through the collaborative use of tools. Similarly, Wells (1999) viewed that a ZPD is created not just within an individual learner, but in the interaction between the learner, partners, and available tools during participation in a shared activity. In other words, people work together in order to co-construct

meaning, so a higher potential is reached as a result of the work of the group (Lantolf, 2000). Consequently, the change occurring in the ZPD is less a matter of scaffolding as it is of negotiated, collaborative activity.

In general, the ZPD is hence an essential feature of learning, and learning is more than a result of dynamic social interactions by which teachers or expert students can offer appropriate models and supports to novice students to progress through the ZPD. According to Lantolf and Thorne (2007), the ZPD is considered a framework that brings all of the pieces of the learning setting together, namely the teacher, the learner, the social and cultural background, the goals and motives as well as the resources available to them. The authors also emphasised the two critical issues that further characterise the ZPD, namely that cognitive development has its origin in social and interpersonal activity becoming the foundation for intrapersonal functioning, and that this process involves internalisation.

Internalisation is the process of taking new information that was experienced or learned within a social context and developing the necessary skills or intellectual functions to independently apply the new knowledge and strategies (Bonk & Cunningham, 1998; Lantolf, 2006; Mitchell & Myles, 2004). The internalisation of socially constructed knowledge is a central key to learning, the currency of which is language (Vygotsky, 1978). As individuals interact with people around them, they talk to each other, negotiating a shared understanding through talk (Wells, 1999; Wertsch, 1991). Gradually, the learner internalises this understanding and dialogue. In turn, this internalised learning/dialogue influences future interactions. Vygotsky (1978) referred to the process as moving from the intermental or interpsychological plane to the intramental or intrapsychological plane. In other words, development appears twice, once socially and later as self-regulating problem-solving behaviour, moving from an external to an internal plane. He emphasised the profound importance that talk has on a person's development, commenting:

Language arises initially as a means of communication between the child and the people in his environment. Only subsequently, upon conversion to internal speech does it come to organize the child's thought. (Vygotsky, 1978, p. 89)

Bruner (1990) expressed a similar viewpoint, asserting that a person enters his/her life as a participant in a larger negotiable public process rather than as a private and autistic individual in primary processes. A vital notion is that learning is not an exact copying process; the learner instead appropriates skills or information from social interactions, based on his/her own skills, needs, and experiences.

In summary, looking from the sociocultural perspective conceptualised by Vygotsky (1978) into language education, the role of social interaction is clarified in creating an environment to learn language, learn about language, and learn through language (Warschauer, 1997). That is to say, as Chun puts it, “for sociocultural approaches, language development is essentially a social process. ..., language is not owned solely by the learner, but is co-constructed with others” (Chun, 2008, p. 20). This angle examines the interaction within a broad social and cultural context. Vygotsky (1978) emphasised the importance of collaborative learning in assisting each student to advance through the ZPD.

As illustrated in Figure 3.3, learners navigate the ZPD through two interpretations: a) the modelling - the teacher models an approach to learning; and b) the text-mediation - viewing texts (verbal, written, or nonverbal) as thinking devices, which has been developed from i) collaborative-apprenticeship learning, and ii) semiotic-apprenticeship learning. The semiotic-apprenticeship learning is previously reflected mainly through the community of practice where thinking is developed through talk rather than modelling and cognitive amplification where the relationship among texts, talk, and literate thinking is investigated. Meanwhile, the collaborative apprenticeship learning highlights the use of expressive speech and writing, peer collaboration, and meaningful problem-solving tasks. As a result, informed by the sociocultural perspective, the text-mediational view - as an applicable framework - connects “concepts of expression, interaction, reflection, problem-solving, critical thinking, and literacy with various uses of talk, text, inquiry, and collaboration in the classroom” (Warschauer, 1997, p. 472).

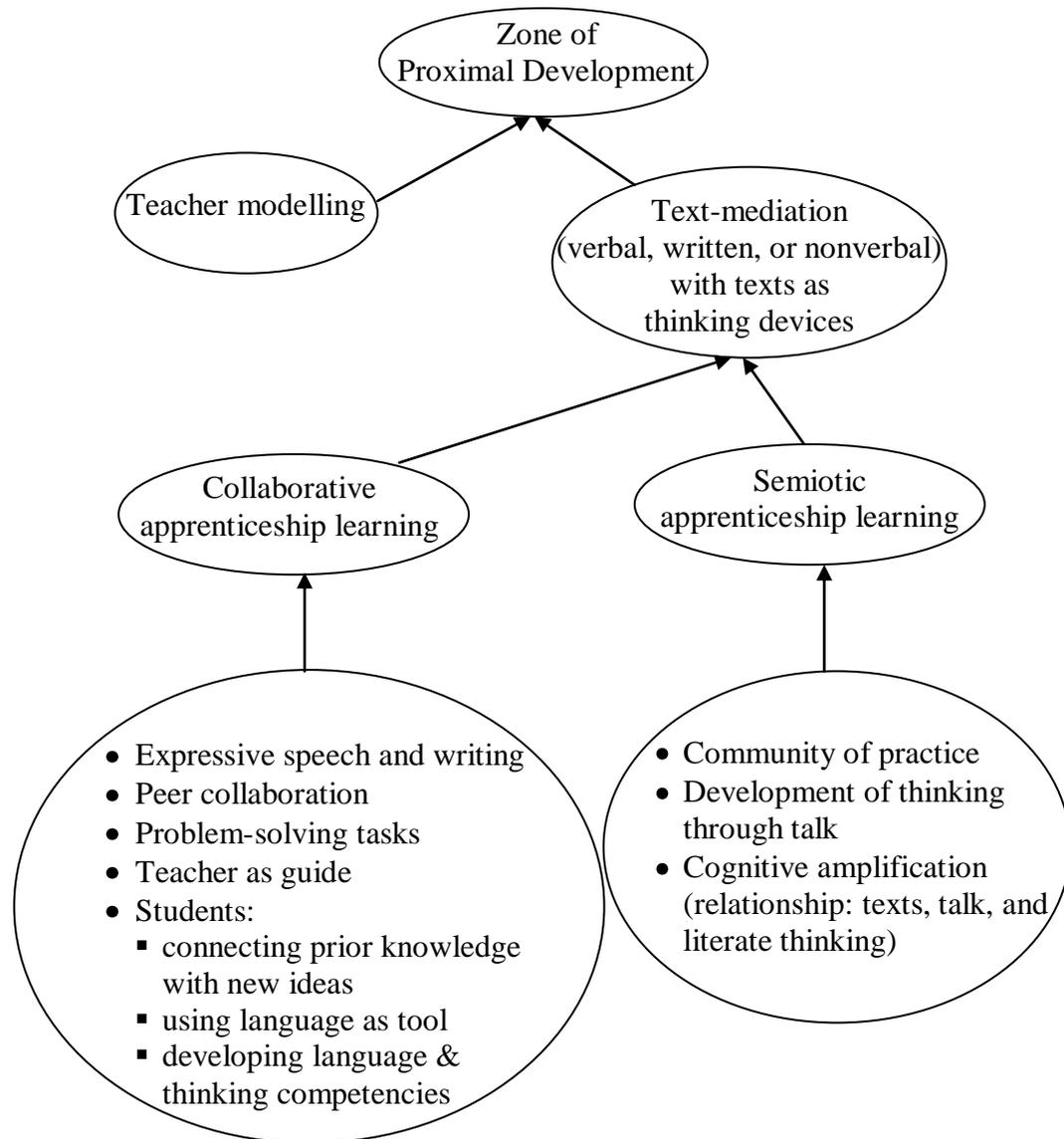


Figure 3.3 A sociocultural framework for collaborative learning

In a word, SCT’s fundamental focus is less on the relationship between the learner and the language but more on the relationship between learners and the world with its specific social, cultural, institutional, and interpersonal context which “is represented by and acted upon through language” (Lund, 2006, p. 185).

### 3.3 Collaborative Language Learning

There exists a dialectical relationship between collaborative language learning and communicative language teaching. Looking from the SCT prism, the long-established Communicative Language Teaching (CLT) methodology entails

interaction, and thereby collaboration, while the collaborative learning approach per se embodies the spirits of CLT in a sociocultural context of learning. In other words, there is obviously a social turn in research on foreign language education in general and CLT more specifically (Block, 2003; Lantolf & Thorne, 2007). CLT therefore needs to be first revisited; and another definition of CLT from an SCT perspective seems to be necessary, in order to attain a better understanding of collaborative language learning within the CLT methodology.

### ***3.3.1 Communicative language teaching***

As a system of arbitrary vocal symbols by means of which the members of a society interact in terms of their total culture (Trager, 1979), language is defined by Sapir as “a cultural, not a biologically inherited, function” (Sapir, 1921, p. 1). This definition has been shared by many other linguists. Among them is Halliday (1973), who, putting language in the cultural context, emphasised that language is a range of potentials, an open-ended set of opportunities in behaviour that are available to the person in his existence as a social human being. He also emphasised “the context of culture defines the potential, the range of possibilities that are open. The actual choice among these possibilities takes place within a given context of situation” (Halliday, 1973, p. 31). A recent up-to-date view on language is understandably consistent with the above definitions. According to Norton (2009b), language is theorised not only as a linguistic system, but as a social practice in which experiences are organised and identities negotiated. Norton (2009b) also asserted that language should, therefore, not be considered as a neutral medium of communication, but will better be understood with reference to its social meaning.

It can, therefore, be understood from these definitions that *language is primarily a tool of thought and communication*. Learning a language means not only understanding how to use the language with its particular specific skills within a social setting and becoming part of the speech community, but also developing a deep conceptual understanding of literacy in that language. Communication means using language to make communicative functions in specific cultural contexts (Savignon, 2007). The focus should first be on meaning as a priority, then on form in the other end of the continuum (Figure 3.4). That is, what matters most rests less on

whether learners learn to use the language accurately; rather, it is more important for learners to learn how to get their message across.

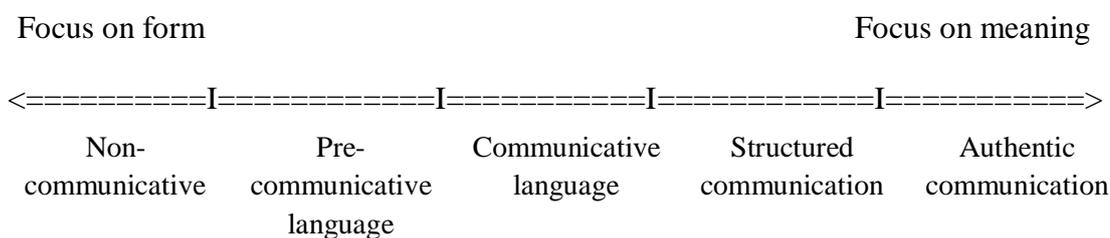


Figure 3.4 Communication continuum

### 3.3.1.1 CLT re-visited

The life circle of language teaching methods continues to rotate. Old approaches and methods are manipulated or bring forth new ones in a cycle, popularly known as *competition-between-rivals*. Among them, CLT has long been considered and accepted as an inclusive approach to language teaching, which encompasses various approaches and methods, motivations for learning English, types of teachers and the needs of individual classrooms and students themselves; it is learner-centred and emphasises communication in real-life situations. CLT was originated in Britain in the mid-1960s as a replacement of earlier conventional methods and has become a widely acknowledged EFL teaching approach since the 1980s.

The approach endeavours to expand on the intention of creating communicative competence as opposed to traditional methods that serve the same objectives of language education. Teaching students how to use the language is considered to be as important as, if not more important than, learning the language itself. Brown (2007) aptly describes the professional march towards CLT:

We are probing the nature of social, cultural, and pragmatic features of language. We are exploring pedagogical means for ‘real-life’ communication in the classroom. We are trying to get our learners to develop linguistic fluency. We are equipping our students with tools for generating unrehearsed language performance ‘out there’ when they leave the womb of our

classrooms. We are concerned with how to facilitate lifelong language learning among our students. And our classroom practices seek to draw on whatever intrinsically sparks learners to reach their fullest potential. (Brown, 2007, p. 42)

The notion of communication is accordingly central in CLT; and CLT advocates learning through communication. In CLT, communicative emphasis tends to be placed on the development of the basic skills of speaking, listening, reading, and writing for many purposes. Teachers are provided with a repertoire of communicative activities in their selection of teaching skills and learners are given opportunities to practise the language skills in the classroom (Littlewood, 2007). Learners, as the centre of the teaching-learning process (White, 2007), are encouraged to use language in order to communicate with others, rather than speaking and writing just to practise language.

According to Nunan (1991, p. 279), there are five basic characteristics of CLT. First, CLT emphasises learning to communicate through interaction in the target language. Second, CLT introduces authentic texts into the learning situation. Third, CLT provides opportunities for learners to focus not only on the language but also on the learning process itself. Fourth, CLT enhances the learner's own personal experiences as important contributing elements to classroom learning. Finally, CLT attempts to link classroom language learning with language activation outside the classroom. These five basic features have since been later endorsed by Holliday (1997) and Richards (2005), who differentiates CLT from traditional approaches<sup>1</sup>, according to a set of principles summarised in Table 3.1.

In terms of classroom practice, while considering the classroom as a social community with its own collaborative characteristics, Richards (2005) further extended the process-based CLT movement to the two well-known models of instruction, task-based and content-based, which “take different routes to achieve the goals of communicative language teaching - to develop learners’ communicative competence” (Richards, 2005, p. 29). While in task-based instruction language is

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<sup>1</sup> Grammar-translation and audiolingual methods, for example.

acquired via the mediation of meaningful tasks, language acquisition is mediated by the content areas of interest in content-based mode. Furthermore, these modes are often mingled, i.e. task-based instruction regularly contains content-based model and vice versa.

Table 3.1 CLT versus traditional approaches to language teaching

Principles	Traditional approaches	CLT
Goals of language teaching	Grammatical competence	Communicative competence
How learners learn a language	Process of mechanical habit formation	Processes of purposeful interaction and collaborative creation of meaning negotiated
Classroom activities	Memorisation of dialogues and drills in classroom as a lab	Pair/group work activities, role plays, and project work in classroom as a social community.
Roles of teachers and learners	Teacher: model for correct speech and writing Learners: individualistic	Teacher: facilitator and monitor Learners: cooperative and collaborative

It should be noted that within the literature communicative competence is seen as consisting of several components. Whereas Canale and Swain (1980) suggested a model of communicative competence including grammatical competence, sociolinguistic competence, discourse competence, and strategic competence, Bachman & Palmer (1996) proposed a more specific model of communicative proficiency with two hierarchical components: the first factor being the grammatical structure of language manifested by the production of texts (written and spoken), and the second being the contextually constructed communicative expertise needed to pragmatise the grammar-tuned language production. Communicative competence is thus planned and developed in accordance with a particular social and cultural milieu.

### 3.3.1.2 CLT re-defined

More precisely, CLT - as a language teaching approach with principles established and filtered over the past four decades in the field of SLA - was born under the light of SCT (Meskill & Anthony, 2005). The adaptation of SCT into CLT “implies a shift from theories of universal generative grammars, genetic blueprint and innate structures” (Lund, 2008, p. 38) to viewing language as a cultural mediational tool with its cultural conventions. Similarly, SCT also informs a turn from individual acquisition to artefact-mediated collaborative participation in language learning (Lund, 2008; Savignon, 2007). Viewed from the SCT perspective, language is not only a means of communication but also the reflection of culture and the human thinking process. SCT-based CLT approaches make several fundamental assumptions. First, language is best learned through the active negotiation of meaning via social interactions. Second, learning is normally mediated by social and cultural tools. Third, learners’ linguistic performance improves through the ZPD via collaborative learning with peers. Finally, collaborative learning as a principal communicative strategy plays a significant role in a CLT language classroom.

Once CLT is viewed from the SCT perspective, it should be examined in accordance with space and time. In terms of space, it might be accepted that CLT applied to an Asian-based classroom must be different from CLT as applied to a Western-based classroom, for example. As far as time is concerned, it would hardly be completely suitable to implement the philosophy and the concept of 20<sup>th</sup> century CLT to the 21<sup>st</sup> century language classroom. In other words, if we are going to approach CLT from a sociocultural perspective, we cannot assume that the values that underlie CLT are universal (Sullivan, 2000). This idea has been endorsed and expanded by Savignon (2007), who confirmed that

CLT is an approach that understands language to be inseparable from individual identity and social behaviour. Not only does language define a community; a community, in turn, defines the forms and uses of language. The norms and goals appropriate for learners in a given setting, and the means for attaining these goals, are the concern of those directly involved. (Savignon, 2007, p. 217)

Cultural, historical, and institutional factors on a local level must be taken into account. It is not sensible to simply assume that what works well in one educational backdrop will work well in another, and to ignore the interrelatedness of history, culture and pedagogy, as well as the argument that ELT methodology is associated with an Anglo-American tradition of communication (Sullivan, 2000). CLT can thus be perceived to derive from a multidisciplinary perspective that includes linguistics, psychology, philosophy, sociology, and educational research (Savignon, 2007), based on which assorted dimensions of collaborative learning will be better understood. The following section presents collaborative learning with its various aspects.

### ***3.3.2 What is collaborative learning?***

Collaborative learning, defined as a process in which participants are collectively responsible for developing knowledge through structured activities and in which the instructor's role is to facilitate and co-participate in the learning process (Nunan, 1992), is one of the principal elements in a sociocultural perspective of learning, in which learning is seen as a social process rather than restrained within an individual (Vygotsky, 1981). Different from traditional learning, which is characterised as the sage on the stage where learning is a transmission of information from the teacher to learners, collaborative learning is a learning method that considers social interaction as a means of knowledge construction (McInnerney & Roberts, 2004). This type of group-based learning is related to the concept of the teacher as facilitator and the learners as active participants (Lamy & Hampel, 2007). As far as units of analysis are concerned, collaboration is principally conceptualised as a process of shared meaning construction (Stahl, et al., 2006) which is assumed to be a group interactional achievement, rather than an expression of individual mental representations.

The pedagogical framework that supports collaborative language learning can be traced back to Piaget's (1932) constructivist theory and to Vygotsky's (1978) sociocultural theory (Torres & Vinagre, 2007). Piaget (1932) observed that learning is the result of collaboration. Likewise, Vygotsky (1978) highlighted the significance of social interaction, such as peer collaboration, in developing cognition. He believed

that collaboration promotes learning because the process enables learners to operate within one another's ZPD, as discussed in section 3.2.3 of this chapter. Learning through the ZPD is supported by complete social interaction. Working with peers is academically beneficial because when learners are closer to one another in their levels of proximal development, they are able to describe things to one another in a way easier to comprehend, rather than being explained by a person with a very different mental age. In other words, looking from the ZPD's point of view, collaborative learning provides a framework for guided concept-building and assists learners to advance to greater competency (Warschauer, 1997).

Sociocultural theories also support the supremacy of collaborative learning over traditional methods. McCafferty, Jacobs, and Iddings (2006) maintained that the course of conversation during the process of collaborative learning helps students verbalise and elaborate their initial, immature thoughts. According to Beatty (2003), collaboration should be encouraged in the classroom as it promotes social and thinking skills and also "mirrors the way in which learners often need to work once they leave an academic setting" (Beatty, 2003, p. 100). In other words, SCT views learning as grounded in diverse collaborative activities. Regarding language learning, collaboration is not only valued for its contribution to learners' "accumulation of language knowledge" (Donato, 2004, p. 289) through their own decisions about what materials they study and how they should study them; it is also conceived as an approach that enables learners to involve themselves in a social community of practices, thereby supporting individual's sociolinguistic development and reciprocal contribution to that language community. In sum, the SCT perspective considers collaborative activity as a facilitator for learning which promotes dialogic intermental relationships, leading to target language internalisation.

### *3.3.2.1 Collaborative versus cooperative learning*

First of all, both collaborative and cooperative learning involve processes which lead to supporting peer group impact on intellectual concerns, renegotiating classroom control, validating knowledge as a social construct, contributing to education as a process of reacclturation (Bruffee, 1999). Though the terms 'collaborative learning' and 'cooperative learning' are sometimes used interchangeably by some authors

(Graham & Misanchuk, 2004; Greenfield, 2003; Kumpulainen & Wray, 1999; P. M. Nguyen, Terlouw, & Pilot, 2005), some others (Barkley, Cross, & Major, 2005; Beatty & Nunan, 2004; Ingram & Hathorn, 2004; McInnerney & Roberts, 2004) insist on a transparent distinction between the two terms. Whereas cooperative learning takes place when individuals in a pair/group split the task in the “divide-and-conquer” style of working (Ingram & Hathorn, 2004, p. 216) so that each member solves a part of the assignment, collaborative learning is the interdependence of the pair/group members as they share ideas, negotiate all aspects of the task and co-construct a conclusion. Cooperative learning is believed to focus on the products of group interaction and individual skills development. Collaborative learning is, on the other hand, used in higher education for interdependent learning, focusing on the processes of group interaction, social learning and management of the educational setting in attaining educational outcomes (Roberts, 2004).

As regards teaching methodologies, cooperative learning is defined as a teaching strategy where groups of learners undertake a group task, and are individually and collectively accountable for the group’s presentation to produce a cooperative performance. In contrast, collaborative learning is associated specifically as a didactic approach to help learners become members of a knowledge society (Roberts, 2005). Another way of differentiation suggests that cooperative learning is an activity initiated and controlled by the teacher while collaborative learning activities are those naturally set up by the learners (Beatty, 2003; Bruffee, 1999).

Viewed from the perspective of classroom practice and for those who hold a more pragmatic approach to this distinction, cooperative and collaborative learning are on a continuum. On the cooperative end, group-based learning is highly constructed in a well-structured task and algorithmic skills; the collaborative extreme, in contrast, involves a loosely-structured task and synthesis skills (P. M. Nguyen, et al., 2005). Figure 3.5 summarises the key features that differentiate cooperative and collaborative learning on the continuum (Lamy & Hampel, 2007; P. M. Nguyen, et al., 2005; Oxford, 1997).

Enhances cognitive and social skills	<b>Purpose</b>	Acculturates learners into knowledge community
Higher	<b>Degree of structure</b>	Lower
Lower levels/algorithmic	<b>Skills</b>	Higher levels/synthesis
Well-structured	<b>Tasks</b>	Loosely-structured
Assigned	<b>Learner roles</b>	Negotiated
Teacher facilitates, but group is primary	<b>Relationships</b>	Learners engage with more capable peers who provide assistance and guidance
<=====>		
<b>Cooperative extreme</b>	<b>Variables</b>	<b>Collaborative extreme</b>

Figure 3.5 Cooperative/collaborative learning continuum

In general, learners are required to take more control of their learning process in collaborative than in cooperative learning. It is suggested that collaborative learning can be applied to higher level skills than is the case in cooperative learning; and collaborative objectives can be seen as one of the motivational elements, along with competitive and individualistic goals, in classroom learning (Beatty & Nunan, 2004). While cooperative learning is seen by some researchers as including collaboration (D. W. Johnson & Johnson, 2004), I agree with Chung (1991) and later, Mangenot and Nissen (2006), who consider collaborative learning as an *umbrella term* which includes cooperative learning as one of the components. In other words, students can still assign some subtasks among others in collaborative learning, and then combine and synthesise them later to form the whole task. This umbrella conceptualisation encompasses multiple educational strategies and approaches involving both the teacher and students in a joint intellectual effort.

### 3.3.2.2 Potential benefits of collaborative learning

According to Danielewicz (2001), collaborative learning generates a social setting in which not only are learners supported to negotiate access to the academic discourse

community and acquire disciplinary knowledge, but also their collaborative efforts will produce new knowledge, leading to a critique of accepted knowledge, conditions, and theories, as well as of the institutions that produce knowledge.

As for the major categories of potential benefits created by collaborative learning, many key authors, such as Lamy and Hampel (2007) and Roberts (2005), refer to Panitz's (2001) extensive list presented in Table 3.2. These academic, social, and psychological benefits of collaborative learning are thought to reside in the social interaction between group members.

Table 3.2 Potential benefits of collaborative learning

Category	Theme
Academic	Promoting critical thinking skills; Involving students actively in the learning process; Improving classroom results; Modelling appropriate student problem-solving techniques; Personalising large lectures; Motivating students in specific curriculum.
Social	Developing a social support system for students; Building diversity understanding among students and teacher; Establishing a positive atmosphere for modelling and practicing cooperation; Developing learning communities.
Psychological	Increasing students' self esteem; Reducing anxiety; Developing positive attitudes towards teachers.

Looking from a more specific sociocultural point of view, collaborative learning has been growing in popularity in education because it is a move away from the traditional teaching-learning process that emphasises knowledge transmission from teacher to student, in favour of socio-constructivist approaches that emphasise discovery learning and view knowledge as the product of social activity. In addition,

learning how to work collaboratively prepares students for life after school in the workplace and in communities. Furthermore, opportunities for students to work together are enhanced by the use of technology, advances in which (e.g. the Internet, videoconferencing, and blog/wiki) enable students to interact in both asynchronous and synchronous modes (De Lisi & Golbeck, 1999).

### *3.3.2.3 Components of collaborative learning*

Based on various dimensions surrounding collaboration, including the context, the domain, the theory, the type of control and tasks, and the type and role of participants, that characterise collaborative learning (Kumar, 1996), Ingram and Hathorn (2004), operationalise collaborative learning into three critical attributes, namely interdependence, synthesis of information, and independence. According to Ingram and Hathorn, the key element of interdependence not only influences individual behaviour in positively promoting learning in others, rather than obstructing or ignoring learning of others as in competitive or individual learning respectively; it also affects outcomes of the group, in which the individual's aim will not be attained unless the group goal is accomplished. Collaborative learning also requires, apart from the exchange of ideas, a creation of new insights in the individuals of the group during the discussion, i.e. the synthesis of shared information. Independence of the teacher is the third requirement of collaborative learning, which facilitates the classroom power shift from the teachers to learners, and encourages the autonomy of learners.

These three attributes are measured by examining the elements of participation, interaction, and idea synthesis of the collaborative group (Figure 3.6). While participation is important since collaboration cannot occur without roughly equal participation among the participants, equal participation in and of itself is not enough. The level of interaction and synthesis of ideas of the group should be the main focus for analysis. Without these three characteristics, group work may be many things, but it cannot be called collaboration (Ingram & Hathorn, 2004). In summary, the key point of collaborative learning therefore is to build up a community of equals in which learners can gain a sense of real responsibility to perform an authentic discourse in the academic community.

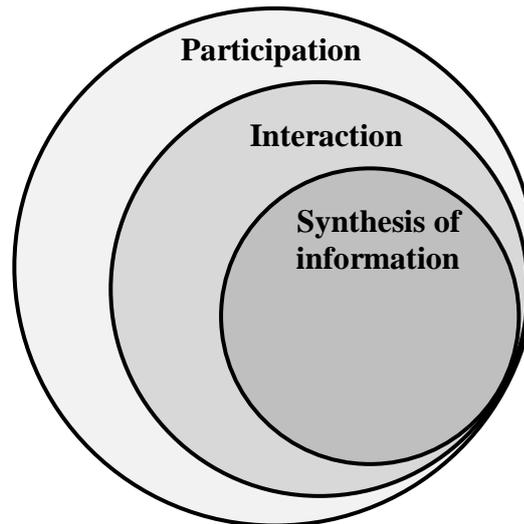


Figure 3.6 The three central elements of collaborative learning

In a word, the benefits that collaborative learning brings about in education in general and language education in particular are evident from the literature. Learning in and of itself cannot and should not be a solitary process. There is certainly a need for social interaction for the sake of learning. The questionable issue has therefore shifted from the effect paradigm to the condition paradigm, and then to the interaction paradigm (Dillenbourg, Baker, Blaye, & O'Malley, 1996). In other words, the concern regarding collaborative learning is now not whether it is more effective than learning alone; nor under which conditions it is efficient; but rather, “which interactions occur under which conditions and what effects do these interactions have” (Dillenbourg, et al., 1996, p. 197). Under this paradigm shift, microgenetic features of the interactions between peers have become a key element of the collaborative process, and therefore a key variable of analysis.

### **3.4 Computer-Mediated Communication**

The development of the computer along with the widespread use of the Internet has rapidly promoted computer-mediated communication (CMC) as a very important communication media which has been used widely and effectively, and has a profound effect on many aspects of education (Beatty & Nunan, 2004; Pfaffman, 2008). Alongside face-to-face (FTF) communication, writing and printing, CMC - as the fourth revolution in the means of knowledge production (Warschauer, 1997) and

as a new medium with unique characteristics - is becoming an increasingly significant element in teaching and learning environments. In fact, CMC has proved to be a feasible and preferable alternative to FTF communication in many ways as it provides an ideal environment for English to be used in communicative situations. CMC-based CALL has revolutionised the world of education by offering countless new ways to teach and to learn (Boone, 2001). Researchers are constantly exploring how CMC may contribute to the education process in particular sociocultural settings while also identifying some of its limitations. It has introduced us to the idea of new literacies and language genres; and at the same time has blurred the line between written and oral communication (Kern, 2006; Warschauer, 2004). A thorough understanding of CMC-supported learning processes is essential for not only educators but language teachers as well. Hence, language professionals need to capitalise on the advantages and potential strengths that this technology has to offer.

### ***3.4.1 What is CMC?***

As a generic term for using computers and the Internet to communicate online (Chun, 2008), CMC has been extensively researched from various disciplinary and methodological perspectives. This form of communication, with a broad scope of processes and tool-use, facilitates information design and delivery, and human-machine and human-human interactions with structural, cognitive and sociocognitive implications. It has been more than ten years since the online CMC Magazine started the debate, ‘what is CMC?’ in 1997. Various definitions have been offered from a diversity of perspectives. CMC, the term first being coined by Hiltz and Turoff (1978), was originally described as “the process by which people create, exchange, and perceive information using networked telecommunications systems that facilitate encoding, transmitting, and decoding messages” (December, 1996b). This rather technical-oriented definition has been endorsed by a number of researchers. Luppicini (2007), for example, defines CMC as “communications, mediated by interconnected computers, between individuals or groups separated in space and/or time” (p. 142). Similarly, according to Herring (2001) and Warschauer (1999), CMC is openly delineated as communication taking place between human beings via the instrumentality of computers. Technically, CMC is widely known as a transmission

and reception of messages using computers as input, storage, output, and routing devices.

However, just like the fast-changing CMC technologies themselves, the definition of CMC is not fixed. Rather, there has been an evolution from focus on tool or medium to emphasis on process or interaction between human beings. A human-oriented description of CMC perceives it as any form of organised computer-supported interaction between people; or as an environment in which users interact with other users over the network (D. E. Murray, 2000). In other words, CMC is a generic term that embodies all forms of communication between individuals and among groups via networked computers. Another more abstract definition claims that CMC “means different things to different people, which is both its strength and the source of some of the problems arising in the research literature” (P. J. Murray, 1997, p. 1; Paramskas, 1999). In reference to language learning, “CMC allows language learners with network access to communicate with other learners or speakers of the target language” (Kern & Warschauer, 2000, pp. 11-12).

Many a researcher has recently suggested the application of SCT as a theoretical framework to the study of CMC (Chapelle, 2001; Kern & Warschauer, 2000). Looking from the sociocultural perspective,

CMC is not just a tool. It is at once technology, medium, and engine of social interactions. It not only structures social relations, it is the space within which the relations occur and the tool that individuals use to enter that space. (Jones, 1995, p. 16)

In quite a few circumstances the uniqueness of CMC mirrors and contributes to recent changes in society and developments in educational theories (Romiszowski & Mason, 2004). Regarding the contextual setting, CMC is “more than the context within which social relations occur... It is commented on and imaginatively constructed by symbolic processes initiated and maintained by individuals and groups” (Jones, 1995, p. 16). Accordingly, as a pedagogical shift has moved language educators from cognitive assumptions about knowledge and learning as brain-local phenomena to contextual, collaborative, and sociocultural approaches to language development and activity (Kern & Warschauer, 2000), CMC - like all other human creations - should be considered as a cultural tool possessing particular

interactional and relational associations, expectations, and preferred uses (Thorne, 2008a). In other words, CMC with its own social and cultural features, has various implications, meanings and uses in different communities.

In general, CMC can be viewed both as a mediational tool and as a communication process. When viewed as tools, CMC is examined from technological aspects that provide the medium for communication and interaction. Other aspects are revealed when CMC is perceived as a communication process, which includes the message, the sender, and the receiver. It is human factors with their sociocultural and historical background that play significant roles during the interaction process. Therefore, a more comprehensive understanding of CMC will be attained through the examination of its characteristics, modes, and scopes.

### ***3.4.2 Characteristics of CMC***

Though there has been an exponential increase in the number of publications on the subject of CMC available (Abrams, 2006; Shi, Mishra, Bonk, Tan, & Zhao, 2006), research interests are often centred upon those characteristics of CMC that are assumed to differentiate it from the traditional form of FTF communication (Abrams, 2006; Sierpe, 2005). It is noted that “CMC differs substantially from FTF communication, in form if not in function” (Walther, 2007, p. 2539). The various features of CMC presented below are, therefore, those that make it different from traditional FTF communication mainly in terms of forms; though, in some cases, functions of CMC are marginally mentioned. These discussions include the technological, social/cultural, and linguistic characteristics of CMC.

Technologically, hyperpersonal and interpersonal communication (Walther, 2007) is facilitated by the use of computer network technology, which theoretically makes online participants communicate with each other independently of time and space. In other words, CMC provides freedom from temporal and spatial constraints (Luppicini, 2007), since communication via CMC can be asynchronous as well as synchronous. Furthermore, CMC affords a variety of media, combining text, audio, and video with hyperlink and hypermedia features. Multimedia CMC is now becoming popular and used everyday by a large number of people the world over. Another technological affordance of CMC is that it enables multi-dimensional

communication including one-alone, one-to-one, one-to-many, and many-to-many. Regarding language learning, the electronic nature of CMC “makes language manipulable” (O'Rourke, 2008, p. 232). In sum, it can be seen that all of the technical and technological developments of CMC are combining various mediational tools together, and therefore, potentially fostering a innovative style of collaborative learning.

In terms of social and cultural communicative aspects, impersonality in CMC has been mentioned in literature (Kreijns, Kirschner, Jochems, & Van Buuren, 2004). Previous research has noted the negative aspect of the non-humanlike communicative nature of CMC (Jonassen, 2004; Lund, 2006) and that CMC lacks particularly relational features, “which enable the interlocutors to identify correctly the kind of interpersonal situations they find themselves in” (Riva, 2002, p. 581). Misunderstandings and therefore misinterpretations may occur due to the lack of gestures, facial expressions and other general social, non-verbal or para-verbal cues (such as head nods, smiles, eye contact, distance, and tone of voice).

However, regardless of the oppositions mentioned, the impersonality itself brings certain benefits to learning. Hiltz and Turoff (1978), for example, asserted that computer conferencing seemed much less intimate and self-exposing than oral communication due to its impersonal nature. Mental and physical effort can be focused on the topic discussed rather than on unnecessary visual and auditory cues. Research (Q. Wang & Woo, 2007, for example) also revealed that CMC users take more time than those in FTF communication in order to reach a common view, which helps them make better decisions with appropriate attitudes and language. In other words, despite the lack of human qualities including paralinguistic and non-linguistic behaviours (O'Rourke, 2008), CMC, while gaining more and more popularity, allows relational development through extended communication (Knight, 2005). There seems to be a trade-off between social skills and technical expertise in this regard.

Last but not least are the linguistic features of CMC, being described as having its own unique language. For D. E. Murray (2000), CMC in general has four linguistic characteristics. First, it is related to both spoken and written language. According to

Crystal (2006), CMC is fundamentally different from speaking and writing media; it shares in their properties, but possesses those features that neither could possibly have. CMC combines oral and written language forms and provides for real-time communication, similar to oral language. There is a complex interaction of contextual aspects in specific contexts. In many cases, CMC exchanges may be viewed as a typed conversation (Sierpe, 2005), in which participants can freely use the ability to stress words and phrases in italics or by bolding, the same functions seen in speaking in a first person's point of view (Smith, 2003). Smith (2003) also described some characteristics of written language in CMC, such as the lack of intonation, the permanent record of the discourse, the lexical density, and the use of punctuation and textual formatting in messages. In other words, some textual features of CMC are comparable to those found in writing and others found in oral language.

As for the second linguistic characteristic, CMC language has a simplified register due to the fact that the speaker either perceives the addressee as a language user with limited competence or performs under constraints of time and space. D. E. Murray's study (2000) reports that learners in the CMC environment delete subject pronouns, determiners, and auxiliaries, use abbreviations, do not correct typos, and hardly ever use mixed case in order to reduce typing time. "Shorter sentences, abbreviations, simplified syntax, the acceptance of surface errors, and the use of symbols and emoticons to express emotions" (Smith, 2003, p. 39) are frequent. In general, it must be asserted that the language of CMC is developing as less expressive and less sophisticated than previous forms of writing.

The third linguistic attribute of CMC deals with the structure of conversations. There are at least two aspects that make CMC conversations different from traditional telephone or FTF exchanges (Smith, 2004). Due to automatically technology-supported identification, some norms, such as openings, closings, greetings, and different turn-taking strategies (Gains, 1999) are optional in CMC. In addition, because of its reduced sensory nature, CMC conversations require more explicit signifying of understanding and non-understanding.

Lastly, the mechanism of maintaining topic threads like in email, blog, and wiki exchanges make conversations more cohesive and coherent. This feature of threaded

discussion is considered to promote collaborative learning (Suthers, Vatrappu, Medina, Joseph, & Dwyer, 2008). The critical issue, however, is that different technologies amplify certain features of communication and reduce others. The use of the new technology for human communication is said to promote language change and to demand the acquisition of new literacy skills (Braga & Busnardo, 2004). To sum up, regarding the language used in CMC, Warschauer (2005) concluded that it is not merely an amalgamation of a traditional form of written language plus computers, but rather there is now a completely new system of language that needs to be discovered, analysed, and studied.

### ***3.4.3 Modes of CMC***

CMC is conventionally divided into two basic modes, synchronous (SCMC) and asynchronous (ACMC) communication capacity, both of which share high and multiway interactivity (Levy & Stockwell, 2006; Luppacini, 2007; Pfaffman, 2008). SCMC discussion involves users exchanging opinions in real time format via chat rooms, instant messengers, or video conferencing. Participants in SCMC environments post typed messages which appear on the computer screen; and they can scroll back and forth to review previously sent stretches of the discourse text. SCMC discussion not only allows learners to communicate in a similar manner to FTF discourse (L. Lee, 2001), but, at the same time, also increases learner monitoring of language usage (Sykes, 2005). Learners must however sign onto a computer system simultaneously to launch the network, which is considered the downside of this mode of communication in education with regard to different class times and time zones (Levy & Stockwell, 2006).

On the other hand, in ACMC, such as World Wide Web (WWW), e-mail, web blog, newsgroups, and postings in bulletin board system, interaction does not need to be simultaneous. The ACMC mode allows students more time to read, understand, reflect, and respond to the posted written messages. Learners also have a chance to monitor and edit their own or other learners' writing. ACMC has been widely used in collaborative writing and brainstorming, fostering critical thinking habits of the participants (L. Lee, 2004).

Still, this binary division is not absolute. As far as the simultaneity is concerned, even real-time chat, for example, is hardly completely synchronous due to delays depending on such variables as the Internet speed, typing speed (D. E. Murray, 2000), and preferences of use, in which an offline chat message, for example, may be received and responded to days after being received.

Another widely-accepted classification of CMC is whether it is text-based or audio/video-based (Figure 3.7). Text-based computer-mediated communication (CMC) still remains most common in education environments, although bandwidth and hardware for two-way audio and video is now widely available and gaining their popularity (Paulus, 2007). The textual nature of CMC, which makes language more “persistent, visual, and archivable” (O'Rourke, 2008, p. 232), still has a significant impact on language study (D. E. Murray, 2000; Warschauer, 1997). It has introduced us to the idea of new literacies and language genres, and has blurred the historical division between written and oral communication (Kasper, 2000), both of which have been merged into a single medium of text-based CMC, as previously discussed. Because of this, text-based CMC has been the subject of research in many disciplines from general education to language studies.

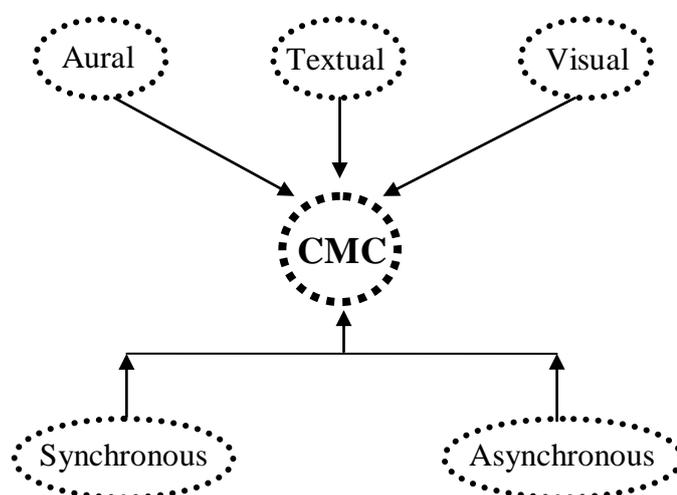


Figure 3.7 Modes of CMC

Nevertheless, information technology in general and CMC technology in particular have been developing so fast and growing to be so hybrid that the bimodal partition of CMC has soon become obsolete. Historically, CMC has developed from the first

generation of email and chat to the second generation of Wikis and Blogs (Blake, 2008), which has recently combined and a new name, Bliki has been coined, and then to Podcasting and Gaming, which are considered the third generation (Thorne, 2008b). Regarding both technical and communicative issues, some CMC forms, such as blogs and wikis, are hardly ever listed as either asynchronous or synchronous. These mediation tools can be used either asynchronously or at the same time depending mainly on participants' preferences and objectives, which makes the synchronicity classification of CMC unnecessary. Similarly, online chat services in many providers, such as MSN Messenger, Yahoo Messenger, Skype, and Google Talk now include both text and audio/video functions, which makes textual/aural/visual grouping of CMC redundant.

The categorisation can also be made according to the various affordances of different modes of CMC, namely temporal, social and psychological, linguistic, material, and individual (Levy & Stockwell, 2006), which have various potentials to influence the communication mediated through CMC. In other words, CMC “*technology plays a major role not only in the choice of language used, but also the types of messages that can be conveyed, the social relationships that can be formed, the psychological pressure that participants may feel, as well as the choice of tool in conducting the communication*” (Levy & Stockwell, 2006, p. 97, italics added).

Socioculturally, the concept of multimodal CMC is therefore suggested (Blake, 2005) and now commonly used (Kern, 2006; Lamy & Hampel, 2007; Thorne, 2008a). Kern (2006) noted that CMC is not a single uniform genre of language use, but rather a collection of genres related in part to the particular medium (Figure 3.8) and in part to the particular sociocultural contexts of a given act of communication. Kern explained that while at the product-oriented end of the continuum, messages are composed as wholes before being released to their readership, on the process-oriented end utterances may be more fragmentary and multiple participants can communicate spontaneously and simultaneously, and several turns may be required to accomplish a single message. Communicative motivation or purpose tends to vary along the continuum in terms of forms and functions. The product end is biased toward information exchange, whereas the process end is inclined toward phatic

communion, reinforcing social contact in and of itself (Crystal, 2006; Herring, 2001; D. E. Murray, 2000).

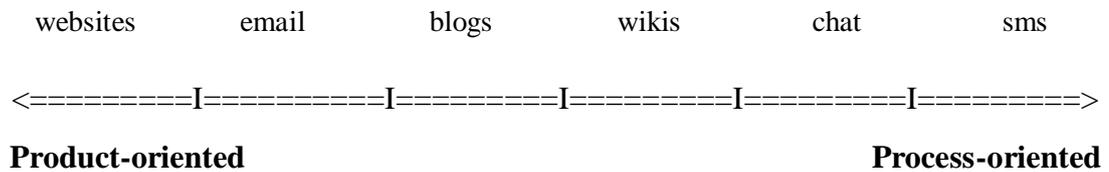


Figure 3.8 CMC continuum

As regards education research and, in particular, language studies, the classification of text-based CMC in terms of synchronicity is still of great necessity. Together with ACMC, having already gained its place in both everyday communication and language education with a steady increase in formality, “using SCMC for learning and practising a target language now seems like the most natural thing in the world” (O’Rourke, 2008, p. 227). SCMC and ACMC each has its own characteristics, complementing each other (Honeycutt, 2001). While synchronous discussions may be best suited for brainstorming and quickly sharing ideas during interaction, asynchronous exchanges allow more time for considered opinions and are more effective for deeper discussion of ideas (Ingram & Hathorn, 2004; Sotillo, 2000). By the same token, as Motteram (2001) puts it, SCMC tools have often been considered as appropriate for the social aspects of learning, whereas ACMC tools have been viewed better for a more academic orientation. A combination of synchronous and asynchronous experiences seems to be necessary to promote the kind of engagement and depth required in collaborative learning. In line with the current communicative, sociocognitive trends in education, both synchronous/process-oriented and asynchronous/product-oriented CMC as everyday authentic communication tools offer numerous possibilities for SLA in terms of collaborative learning and are now a significant avenue of enquiry in applied linguistics.

In general, it is emphasised that the selection of synchronicity-based interaction modes via CMC depends largely on temporal, cultural, socio-psychological, institutional, linguistic, material and individual dimensions, purposes, aims, objectives and preferences (Levy & Stockwell, 2006), while technology with its

various affordances just moderately affects the choice. This is confirmed by Stockwell (2007), who claimed that the reasons for choosing a particular technology are probably as varied as the range of technologies themselves, but some of the main ones may include pedagogical objectives, institutional decisions, personal curiosity, and trends and fashions. Furthermore, Salaberry (2001) argued that it is pedagogical goals that should be the driving force behind decisions of what medium is most efficient in implementing a particular task.

#### ***3.4.4 Scopes of CMC: Intercultural versus intracultural***

CMC, due to the characteristic of space and time independence, is widely known for affording both intercultural and intracultural exchanges (alternatively termed intercultural and intra-class/group respectively by Chun, 2008). Intercultural CMC is also known as telecollaboration, in which participants are from at least two different countries or communities. Conversely, intracultural CMC involves participants who share a native language (Abrams, 2006), and can be conducted within-class and out-of-class, i.e. on campus, at canteens or at home.

Intercultural CMC is exemplified in Ware and O'Dowd's (2008) study. Spanish students learning English and American students learning Spanish exchanged online across the two countries over a year-long period in a telecollaborative research project. These students were required to write at least an essay in their foreign languages weekly. They were placed into pairs (one English native and one Spanish native) and then exchanged their writings through the function of asynchronous CMC in Blackboard for peer responses. Another similar telecollaborative language learning project is found in Greenfield's study (2003), which examined high school students' attitudes toward and perceptions of a telecollaborative email exchange between a 10<sup>th</sup> grade English class in Hong Kong and an 11<sup>th</sup> grade English class in Iowa.

On the other hand, Liu and Sadler (2003) divided their EFL students in a large university into traditional group and technology-enhanced group. The two groups followed the same syllabus; but in contrast to the traditional group who used pen and paper for their writing and editing, the technology-enhanced group exploited Microsoft Word for writing assignments and MOO for group discussion. The study

investigated whether differences in modes of interactions resulted in differences in students' quality of peer revisions. Similarly, Beatty and Nunan (2004) also investigated intracultural CMCL. However, they examined group work at the computer, rather than via various CMC tools. Students in their study were divided into pairs, sitting and collaborating orally in front of the computer to solve various language tasks. The study strived to test the hypothesis that a constructivist interface generated greater collaboration than the behaviourist model of instruction. It is this intracultural type of CMCL that I wish to focus on in the current project, i.e. foreign language students collaborate through CMC support, within in-class as well as out-of-class settings.

### ***3.4.5 CMC in education***

Since being applied to the educational environment, CMC is believed to offer a number of pedagogical applications. Numerous primary and secondary studies on didactic characteristics of both SCMC and ACMC have been published, through which educators are gradually realising their educational potential to the learning context. CMC is reported not only to support a range of learning activities such as discussions, role-play, and simultaneous games but also to serve different functions and learning goals. The applications of CMC, either intra-class or inter-class and with or without teachers, are hardly limited to any particular topic or discipline. CMC is seen as a dynamic and adaptable application for educators and teachers who need to be conversant with its strengths, limitations, and weaknesses in order to improve sound pedagogical activities.

#### ***3.4.5.1 Pedagogical features of CMC***

Within SCT framework, it is argued that “socialization and language acquisition cannot be separated from the interactive linguistic contexts in which they occur” (Kitade, 2000, p. 145). Looking from a SCT perspective, educational CMC offers a variety of potential benefits to human social and cultural development alongside language proficiency. CMC, having been proved to be an efficient medium in facilitating the emergence of a learner-centred discourse community (Zeng & Takatsuka, 2009), can be considered as one of the potential technical and linguistic mediators (Darhower, 2002) of the transformation process from lower mental

functions to higher, cultural functions (Vygotsky, 1978). In Vygotskian terms, CMC could be argued to give learners access to two types of mediators which develop their cognitive processes: psychological tools and other human beings. CMC allows learners to mediate their psychological processes by facilitating the exchange of text between human beings. In addition, CMC can assist learners to develop a greater sense of mastery if the conditions are right, i.e. if learners are working collaboratively on tasks or if learners are interacting with domain experts. In the case of language learning, these experts are native or proficient speakers of the target language. Darhower (2002) similarly claimed that if mediational means are viewed as a series of items making up a “tool kit” (p. 253), CMC then should be considered as one of the items in the language learning tool kit. The social, cognitive, and affective functions found in CMC interactions in Darhower’s study are reported to be consonant with the SCT view of constructed second language learning.

A review of the literature on SCT in education also reveals that CMC not only provides opportunities for socialisation, but also facilitates collaborative and comprehensible interaction (Kitade, 2000) together with reflective learning and learner autonomy (Benson, 2007). CMC facilitates the collaborative construction of knowledge through the social negotiation of ideas in an authentic context (Jonassen, 2004). In addition, it provides access to a variety of perspectives due to the fact that participants could be based in any number of different contexts. CMC also provides learners with opportunities to engage in activities which require them to perform relevant tasks with an emphasis on reflection and production. This kind of social interaction, according to Vygotsky (1978), promotes cognitive development.

Presented in Table 3.3 is a summary of the pedagogical features of CMC reviewed from key studies. The principle pedagogical features to be discussed are believed to support the SCT view on CMC in education. It is also argued that there is a cause-effect relationship among these didactic features of CMC.

First, research has shown that learners’ motivation can be more positive in the CMC context than in FTF interaction (Beauvois, 1998). Interaction with a real, often international, audience in the target language via CMC may linguistically and socially affect the quality of online negotiation and students' motivation toward CMC

(L. Lee, 2004). This authentic and meaningful type of interaction also supports learners to become more responsible and willing to engage in their own learning (Chen, 2005).

Table 3.3 Pedagogical features associated with CMC

Pedagogical features of CMC	Sample research publications	Mode of CMC	
		SCMC	ACMC
Increase motivation	L. Lee, 2004; Schwienhorst, 2004; Smith, 2003	√	
	Sotillo, 2000	√	√
	Weasenforth, Biesenbach-Lucas, & Meloni, 2002		√
Support active learning	Warschauer, 1996	√	
	L. Lee, 2005	√	√
	Bikowski & Kessler, 2002		√
Promote reflective learning	Swaffar, Romano, Markley, & Arens, 1998	√	√
	Jonassen, 2004; Weasenforth, et al., 2002		√
Enhance learner autonomy	Arnold, 2002; Payne & Whitney, 2002; Warschauer, 1996	√	
	Beauvois, 1995; Schwienhorst, 2004	√	√
	Chiu, 2008		√
Foster collaborative learning	Peterson, 2009; Zeng & Takatsuka, 2009	√	
	Darhower, 2002; Leahy, 2008; Warschauer, 1997	√	√
	Abrams, 2005; Arnold, Ducate, & Kost, 2009; Judd, Kennedy, & Cropper, 2010; Kessler, 2009; Savignon & Roithmeier, 2004; Weasenforth, et al., 2002		√

Moreover, many studies have reported that the level of motivation and attitudes towards learning during a CMC task is enhanced due to the interactive nature of the activity (Chun, 1994; L. Lee, 2004; Sotillo, 2000), which contributes to the reduction

of shyness and anxiety about computer use. Another motivating factor of CMC is novelty; learners are exposed to a different type of language learning activity (Meunier, 1998). These aspects of the activity could be said to be unique, such as interacting with different people, meeting people from other countries, chatting in real time and using the computer to communicate. Students are fascinated by how the system works and are reported to write more due to the novelty factor (Felix, 2005), which then augment learners' active learning.

Second, CMC is reported to support active learning, in which learners take the initiative to explore and manipulate information in the learning process. The literature on conditions for language learning and acquisition indicates that learning takes place when learners are active (Egbert, 2001; L. Lee, 2005; Warschauer, 1996); and active learning is one of the crucial elements creating a successful online learner-centred language learning environment (White, 2007). In other words, dynamic and active learning is reflected in the learner-centred learning setting, through which students develop their self-awareness and become accountable for their own learning. The electronic medium allows for access to more lateral exploration as structured by learners who are given more freedom to discover alternative pathways to develop their own learning styles. Egbert (2001) also claimed that CMC can often make it easier to develop meaningful tasks during which language learners of any language level are active and have opportunities to interact. This idea is endorsed by Lee's study (2005) on learners' perspectives on online active learning. Lee confirmed the use of web-based instructional tools, like Blackboard or WebCT, not only facilitated the development of students' language skills and reinforced their cognitive skills but also supported an active learning environment. Lee's conclusion emphasises that "for online active learning to occur, both effective pedagogical principles including specific instructional goals and procedures, as well as technological tools must be thoughtfully taken into account at the stage of implementation" (p. 152).

Third, reflective learning engages learners in evaluating their experiences, and is a trend in language learning which is supported by CMC. This style of learning, a metalinguistic functions (Yamada & Akahori, 2007), is supported in CMC environments, where learners have more time to reflect on others' work than in FTF conversations. They are in turn able to see how others achieve similar purposes. In

other words, learners have access to models and reflect on them. The idea is endorsed by Jonassen (2004), stating that CMC, especially ALCMC, allows more time for reflection and referring to other electronic sources of information. Moreover, the asynchronous nature of the CMC medium not only allows learners to prepare their messages more carefully in a word processor but also is believed to invite quiet students to play more active roles since their more reflective learning styles are easily accommodated (Weasenforth, Biesenbach-Lucas, & Meloni, 2002). Finally, it is proved that with the social-oriented development of CMC technology, such as wikis and blogs, learners are able to more easily access people and knowledge in ways that encourage creative and reflective learning practices that extend beyond the boundaries of the school and the limits of formal education.

Fourth, CMC promotes learner autonomy, a central but complicated concept in online learning (White, 2003), defined by Sinclair (2000) as the notion of taking responsibility for one's own learning and also associated with a number of other terms, such as learner independence, independent learning, lifelong learning, learning to learn, and thinking skills. Advances in CMC technologies are encouraging the development and promotion of autonomy in language learning (Arnold, 2002; Benson, 2007; Chiu, 2008). Chiu's study (2008), for example, asserted that there is a positive connection between CMC and learner autonomy in language education and that the use of networked computers not only shifts the authority from the teachers to learners but also provides opportunities for interactions, especially among learners. Online language learners automatically become partly interdependent of the teacher because of the easy availability of supporting tools such as online dictionaries, word processing tools, and the Internet which give students control over their own learning (Chapelle, 2001). In other words, it can be seen that the roles of the teacher as provider of information and the student as receptacle therefore have shifted radically in CMC environments (L. V. Nguyen, 2008a). In addition, according to Toyoda and Harrison (2002), CMC technologies are becoming more and more user-friendly, which results in the fact that the more learners get to know the tools, the more autonomy they develop. With CMC technologies, individuals are given the opportunity to move out of their individual comfort zones in order to participate productively and effectively in the learning process (Hoven, 2006).

Furthermore, by looking at three different approaches to learner autonomy, including an individual cognitive, a social-interactive, and an experimental-participatory perspective, Schwienhorst (2004) claimed that combinations of CMC technology and pedagogy can lead to more successful implementations of learner autonomy principles. In general, CMC provides an environment that promotes learners' autonomy with the teacher as the facilitator (L. V. Nguyen, 2008a; Warschauer, 1999), through which learners will be able to “experience autonomy in order to become more autonomous” (Murphy, 2008, p. 83) as the result of their getting opportunities for more control, more participation, and more interaction via online exchanges, all of which are believed to be premises for collaboration. This process has been termed autonomisation.

Finally, motivation, participation, reflection, and autonomy all play significant roles in collaborative learning (Figure 3.9), and all have been researched as reported in literature. Collaboration seems to be the central component in a CMC-based learning setting. In fact, online collaborative learning research in education in general and in language learning in particular has been widely studied and published. For the purpose of the current research, a detailed account of computer-mediated collaborative learning, or CMCL, will be discussed more comprehensively and extensively in the subsequent section.



Figure 3.9 CMC pedagogical circle

#### *3.4.5.2 CMC in language development*

Numerous studies have been devoted to CMC in language education so far (Kern, 2006; Kern & Warschauer, 2000; Luppicini, 2007; D. E. Murray, 2000; Romiszowski & Mason, 2004; G. Stockwell, 2007; Thorne, 2008a, 2008b). CMC is reported as a student-centred tool in language learning to facilitate interaction, discussion, and collaboration among learners from a variety of backgrounds. This enhances the social component of any course and gives learners access to multiple perspectives (Jonassen, 2004). All of the pedagogical features of CMC discussed above clearly support, augment, and enhance language development via electronic exchanges.

Presented in detail below are both metalinguistic aspects that are believed to be effective for SLA and language areas and skills that language learners are able to develop through CMC environments (Chun, 2008; Lamy & Hampel, 2007; Levy & Stockwell, 2006; Thorne & Payne, 2005).

First of all, a substantial amount of CMC research has examined various metalinguistic aspects of language development, including negotiation of meaning, sociolinguistic environment, and intercultural competence (Table 3.4). A variety of studies, from either an interactionist approach or a sociocultural viewpoint to SLA have been conducted on negotiation of meaning and CMC (Chun, 2008). Covering the topic from different focuses and angles, previous studies have proved that CMC, both ACMC (Kitade, 2006) and especially SCMC (Blake, 2000; O'Rourke, 2005; Pellettieri, 2000; Sotillo, 2005; Tudini, 2003), facilitates interaction and negotiation of meaning. Interestingly, as far as task types are concerned, research has shown that SCMC and ACMC may complement each other in completing different tasks leading to successful linguistic objectives (Ingram, Hathorn, & Evans, 2000).

CMC is also known for providing a profitable environment for sociolinguistic development (Kitade, 2000; Smith, 2003). Learners reflect less anxiety and increase self-esteem, thereby liberating the minorities (Honeycutt, 2001) during electronic communication compared with face to face interactions, which has led students, often reluctant to participate in oral discussions, to contribute more actively in electronic discussions (Al-Sa'di & Hamdan, 2005). Similarly, data analysis in the

study by Kitade (2000) revealed three salient distinctive interactional features of CMC which facilitated encouraging conditions for developing positive attitudes towards language learning: no turn-taking competition, text-based interaction, and a lack of nonverbal cues. Finally, intercultural competence learning (Abrams, 2006; Kramsch & Thorne, 2002; Ware & O'Dowd, 2008) is evident through CMC research as these tools provide “convenient, authentic, direct, and speed access to native speakers and their cultures” (Kramsch & Thorne, 2002, p. 100). According to D. M. Chun (2008), though many studies have focused on intercultural competence via both ACMC and SCMC, attention has also been paid to intracultural CMC in the EFL/ESL classroom (Abrams, 2006).

Table 3.4 Studies of CMC on metalinguistic aspects

Metalinguistic aspects	Sample research publications	Mode of CMC	
		SCMC	ACMC
Negotiation of meaning	Blake, 2000; O'Rourke, 2005; Pellettieri, 2000;		
	Shekary & Tahririan, 2006; Sotillo, 2005;	√	
	Tudini, 2003; L. Wang, 2006		
	Sotillo, 2000; Toyoda & Harrison, 2002	√	√
	Kitade, 2006		√
Sociolinguistic environment	Kern, 1995; Kitade, 2000; Warschauer, 1996	√	
	Schwienhorst, 2004	√	√
Intercultural & intracultural competence	Kramsch, A'Ness, & Lam, 2000; Sotillo, 2005;	√	
	Thorne, 2003		
	Abrams, 2006; Chun & Wade, 2004; Kramsch & Thorne, 2002; Thorne, 2003	√	√
	Itakura, 2004; O'Dowd, 2003; Ware & Kramsch, 2005; Ware & O'Dowd, 2008		√

Second, as far as language areas and components are concerned, a number of studies, taking a more cognitive approach to SLA, have suggested an increase in linguistic competence, both quality and quantity, among learners (Table 3.5). An influential study by Kern (1995) revealed that CMC-supported learners created more language

production than their friends in the FTF group. Kern found that SCMC discussions produced between two and four times more turns, more sentences, and more words than the oral discussions. This conclusion was later confirmed by Abrams (2003), who claimed that students in CMC environments produced more language, especially the SCMC, than the control group. Another beneficial effect is that CMC also fosters improvement in linguistic and grammatical development, which is proved in Kern's (1995) study, which showed learners' language production was at a greater level of sophistication regarding grammatical accuracy and complexity. Similarly, Shang (2007) demonstrated that the nature of CMC application promoted written accuracy and sentence complexity. In addition, previous studies also indicate that the delayed nature of APMC exchanges appears to give learner more chances than SCMC to produce complex language (Sotillo, 2000).

Table 3.5 Studies of CMC on language areas or components

Language areas or components	Sample research publications	Mode of CMC	
		SCMC	ACMC
Grammar	Bax, 2003; Fiori, 2005; Fitze, 2006; Kern, 1995; L. Lee, 2006; M. R. Salaberry, 2000; Sotillo, 2005; Van Deusen-Scholl, Frei, & Dixon, 2005	√	
	Abrams, 2003; Dussias, 2006; Honeycutt, 2001; Sotillo, 2000	√	√
	Gonzalez-Bueno & Perez, 2000; Y. Li, 2000; Shang, 2007; Stockwell & Harrington, 2003		√
Vocabulary	Fitze, 2006; Fuente, 2003; Toyoda & Harrison, 2002	√	
	Fotos, 2004; Y. Li, 2000		√
Pronunciation	Jepson, 2005	√	

As may be expected, not all studies release positive results. Fitze's (2006), for example, reported on a study where there is no statistically significant difference in the number of words produced by students in CMC versus FTF discussions.

However, a greater range of vocabulary is found in electronic exchanges (Fitze, 2006; Fuente, 2003; Y. Li, 2000). Moving beyond text-based CMC out to voice chat rooms, Jepson (2005) focused on pronunciation when comparing the patterns of repair moves of non-native speakers in text chat rooms versus voice chat rooms. Jepson concluded that there are a higher number of total repair moves made in voice chats than in text chats, and that these repairs in voice chats are often pronunciation-related. To sum up, the conclusion can be drawn from most of the previous studies that CMC environments do enhance the improvement and development of various language areas and components.

Finally, with regard to language skills, both written and spoken skills are enhanced through various modes of CMC in language learning projects (Table 3.6). In fact, there is a common tendency to associate CMC with the development of specific language skills (Levy & Stockwell, 2006).

Table 3.6 Studies of CMC on language skills development

Language skills	Sample research publications	Mode of CMC	
		SCMC	ACMC
Writing	Y. Li, 2000	√	
	Blake, 2000	√	√
	Arnold, et al., 2009; Davis & Thiede, 2000; Meunier, 1998		√
Reading	Godwin-Jones, 2008; Greenfield, 2003	√	
	Fotos, 2004; Gruber-Miller & Benton, 2001	√	√
Speaking	C.-Y. Lee, Turner, Huang, & Kessler, 2007	√	
	Cheon, 2003; Jepson, 2005; Payne & Whitney, 2002; Tudini, 2005	√	√
	Abrams, 2003; Dussias, 2006		√
Listening	Volle, 2005	√	

Authentic communication through CMC, especially ACMC, is reported to develop writing skill due to the fact various forms of text-based CMC resemble written

language and allow more time, more autonomy, and more opportunity for learners to brainstorm and discuss the topic among groups, in comparison with in-class teacher-fronted writing classes (Davis & Thiede, 2000). In addition, the teacher is able to participate in collaborative activities, and thus models the writing process in real time and real situations, thereby assisting students within their ZPD (Vygotsky, 1978). Improvement in reading abilities is also provided via CMC. Authentic interactions in APMC, such as email, blog, and wikis, provide meaningful reading for learners (Levy & Stockwell, 2006). In addition, during text chat exchanges, learners are more adept at skimming and scanning at rapid speeds in order to follow and participate fully in the conversation thread (Godwin-Jones, 2008).

Furthermore, possibilities for cross-modality transfer between real time, online conversational exchange text and oral language production has recently been mentioned in various CMC projects (Chun, 2008; Lund, 2006; Thorne & Payne, 2005). The hypothesis that SCMC may improve speaking proficiency has been tested by Payne and Whitney (2002), who found that participants in a chatroom have a significantly higher oral proficiency than those just spending time in traditional oral classes. This obvious benefit of CMC for speaking competence is confirmed by Dussias (2006), who suggested that the language competence mediated via CMC appeared to readily transfer to spontaneous oral language production. In general, as learners traverse the boundary zone, they introduce language elements from one modality to another (Lund, 2006). In short, it can therefore be seen from the tables that CMC has been used widely in developing most language areas and skills, except for listening skills which are normally supported and developed through other forms of visual and audio technology (G. Stockwell, 2007).

In general, the text-based nature of CMC brings about many meaningful applications in language education. This medium, according to Blake (2000), Hampel and Hauck (2004), and Y. Wang (2004), not only amplifies students' attention to linguistic forms, but it also stimulates increased written production of the target language as well as creating a less stressful and more equitable environment for discussion. In other words, the benefits of CMC, both synchronous and asynchronous, have been shown from the literature to outweigh the few challenges needing to be considered. It is the active roles of the teacher "in raising awareness, in designing appropriate tasks,

in monitoring the collaborations, and in following up on these exchanges” (Chun, 2008, p. 36) that have been repeatedly mentioned in the literature to promote the success of a CMC-integrated language classroom.

### **3.5 Computer-Mediated Collaborative Learning**

Based on a critical historical review of the literature, Stahl et al (2006) commented that “learning sciences as a whole have shifted from a narrow focus on individual learning to an incorporation of both individual and group learning, and the evolution of [CMCL] has paralleled this movement” (Stahl, et al., 2006, p. 411). In other words, they emphasised that the focus is now less on what is taking place in the heads of individual learners than on what is happening between and among group members during their interactions for collaborative knowledge building. CMCL presents an environment in which a student interacts with one or more collaborating peers to solve a given problem, mediated by a computer including all of its communicative facilities, prevalently divided into asynchronous and synchronous communication capacity with high and multiway interactivity. A recurrent theme in the literature is that collaborative learning and collaboration via CMC enhance communicative language teaching and learning from a sociocultural perspective. CMCL, as a mediator of language learning, creates not only an enriching opportunity for language practice itself but also a promising environment for general skill development (Warschauer, 1997).

The text-based nature of CMC has meant that collaboration has become a prime source of data for researchers from both interactionist and sociocultural approaches who are investigating SLA. Online interaction environments, which involve active construction of knowledge, can be potentially used as a powerful tool for collaborative learning and group communication. CMC, according to Kaye (1989) and Warschauer (1997), can provide a valuable dimension to collaborative learning as it both fosters more equally distributed turn-taking and supports more thoughtfully composed inputs. Similarly, Harasim (2007) claimed that this technology provides a new way for interaction between teachers and learners and among learners themselves and this new form of online environment creates a new domain which facilitates collaborative learning.

Reviews on online collaborative learning started with Warschauer's (1997) influential study, which discussed five distinct features of CMC that were believed to enhance collaboration: (a) text-based and computer-mediated interaction, (b) many-to-many communication, (c) time/place-independence, (d) long distance exchanges, and (e) hypermedia links. Warschauer presented CMCL by using a conceptual framework starting with famous theories of input and output and leading to sociocultural learning theory. Later studies (Beatty & Nunan, 2004; Greenfield, 2003; Harasim, 2007; Marmini & Zanardi, 2007; Sotillo, 2006) have also shown the promising capacities of CMC in collaborative learning. This section of the literature review focuses on how CMC can foster collaborative learning by examining three contributing factors, namely participation, interaction, and synthesis of information.

### ***3.5.1 Participation in CMCL***

The amount of learner participation, an outstanding characteristic of collaborative learning, has been the subject of wide inquiry on CMC. It is reported that CMC has the role of equalizing participation, fostering greater participation (Bikowski & Kessler, 2002; Fitze, 2006; Kern, 1995; L. Lee, 2002; Smith, 2003; Warschauer, 1996), and liberating marginal members (Honeycutt, 2001). Classroom research on both ACMC and SMC, for example, demonstrated that learners reflect less anxiety during electronic communication than in face to face interactions, which has led students who were more often reluctant to participate in oral discussions to contribute more actively in electronic discussions (Al-Sa'di & Hamdan, 2005). Even students who do not consider themselves to be fluent participate as much as other students in computer mode (Warschauer, 1996). This is due to the fact that computers offer a medium wherein quieter, shyer students feel comfortable participating (Warschauer, Knobel, & Stone, 2004).

Kitade's study (2000) also showed that CMC helps augment learners' participation in various classroom activities because this environment is believed to provide opportunities for more varied modes of interaction than traditional FTF classrooms. In particular, Kern (1995) reported that students in electronic discussions used a wide variety of discourse structures and that this variety was greater in the electronic discussions than in the oral discussions, which resulted in increased participation and

motivation for meaning negotiation and authentic interaction. Moreover, the medium is also proved to reduce non-verbal cues such as frowning or staring which might be discouraging for timid learners in FTF interactions (Warschauer, 1997). In general, learners actively involving in CMC feel more dynamic and creative in the development of ideas and in following the discussion and selection of topics (Kelm, 1992; Ortega, 1997).

However, a word of caution is that CMC does not automatically guarantee equal participation. Quite a few recent studies (Joiner, 2004; S. W. Lee, 2003; Miller, 2004) have consistently claimed that CMC environments do not eliminate social inequality. According to Miller (2004), for example, marginalised students from linguistic minority may still continue to perceive themselves as inferior in the same hierarchical structure and be subjected to inequity. In addition, another caveat arises from Lee (2003), who found that Korean students of English as a second language tended to prefer the traditional method of instruction to learning in the SCMC-based environment because of their cultural, historical, and social backgrounds, mainly influenced by the Confucian philosophy. Learners' perceptions, therefore, play an important role in the effectiveness of introducing CMC into an academic setting.

In sum, equal participation is a key element of collaboration as discussed in the previous section, but equal participation does not automatically come about in CMC exchanges more than in FTF interactions unless continuous efforts are made by stakeholders, i.e. students and teacher, to contribute to and cooperate within the shared knowledge environment.

### ***3.5.2 Interaction in CMCL***

Findings from this line of research also suggest that CMC modes not only promote greater opportunities for interaction (White, 2003), a central element of the language learning process, but also prove that the interactional features of CMC may lead to success in collaboration (Abrams, 2005; Kern, 1995; Kitade, 2000; L. Lee, 2004; Pellettieri, 2000; White, 2003). Using sociocultural theory to lead his study, Darhower (2002) explored the interactional features of SCMC in an intermediate L2 class and six features were identified, namely intersubjectivity, off-task discussion,

greetings and leave-takings, identity exploration and role play, humour and sarcasm, and use of the L1.

Similarly, data analysis in another study by Kitade (2000) revealed three salient distinctive interactional features of SCMC which facilitated positive conditions for self-correction, others' initiated corrections, and meaning negotiation: no turn-taking competition, text-based interaction, and a lack of nonverbal cues. Furthermore, peer collaboration through CMC was found to enhance critical thinking, which then augmented advanced language competence in Abrams's (2005) study on ACMC, collaboration and the development of critical thinking. The study also found that using both ACMC and FTF in combination offers a rich forum for collaborative learning.

### ***3.5.3 Synthesis of information in CMCL***

As for the third feature of collaborative learning, synthesis of information, previous research (DiGiovanni & Nagaswami, 2001; Hewett, 2000; L. Lee, 2010) consistently demonstrates that peer review (which is sometimes included as or alternatively termed peer response, peer feedback, or peer editing) not only enhances a sense of audience and raises learners' awareness of their own strengths and weaknesses, but also encourages collaborative learning in view of idea synthesis among group members (Lantolf & Thorne, 2007; Tsui & Ng, 2000). In other words, peer review can be considered one of the final steps in the collaborative learning process (Arnold, Ducate, & Kost, 2009) as it helps evaluate and edit drafts, leading to the synthesis of information to the final product, as in the work of Honeycutt (2001), Liu and Sadler (2003), and Ware and O'Dowd (2008). Honeycutt, for instance, compared two text-based forms of CMC (email and chat) to study their effectiveness in the process of grammatical peer response. The results showed that synchronous conferencing and email could aid in the acquisition of collaborative peer review competence in different, yet complementary, ways.

Liu and Saddler (2003) investigated the effect and affect of peer review in electronic versus traditional modes on L2 writing. The study found that the CMC students had a much larger percentage of editing and comments than the traditional peer response group. They also suggested the use of Microsoft Word editing during the

collaborative review process to improve the grammatical competence of learners. However, the study also revealed that face-to-face (FTF) communication is more effective than online exchanges due to the nonverbal communication features that are believed to be indispensable in intercultural communication in a peer review process. A combination of Microsoft Word-based commenting mode and FTF interaction was suggested by the authors to enhance the effectiveness of peer review activities.

### **3.6 Summary**

To sum up, concisely a wide range of studies in the literature explores various aspects of CMC collaboration and collaborative language learning. Many of these studies have, however, dealt with the topic at a rather superficial level. Some mainly present online collaborative characteristics such as increased and equalised participation among learners, and improved linguistic performance (Black, 2005; Fitze, 2006; Kelm, 1992; Kern, 1995; Warschauer, 1996, 1997). Other researchers have just examined the collaborative potentials of online learning (Darhower, 2002; Kitade, 2000) without either thoroughly comparing with the FTF counterparts nor combining the two popular modes of CMC: synchronous and asynchronous. Furthermore, while there are many studies of learners' attitudes to online peer response, similar qualitative research on these attitudes and reflections toward CMC collaborative learning is rare, yet absolutely necessary as far as sociocultural theory of language learning is concerned.

In addition, when comparing CMC with FTF communication, researchers obviously failed to distinguish between what Smith, Alvarez-Torres, and Zhao (2003) refer to as CMC sub-technologies and often conflate results from the two modes, synchronous and asynchronous, each of which has their own characteristics, complementing each other (Honeycutt, 2001). While synchronous discussion may be best suited for brainstorming and quickly sharing ideas during interaction, asynchronous discussions allow more time for considered opinions and are more effective for deeper discussion of ideas (Ingram & Hathorn, 2004). A combination of synchronous and asynchronous experiences seems to be necessary to promote the kind of engagement and depth required in collaborative learning. The current study therefore strives to explore this combinatory potential by putting both of them into

the practices of collaborative foreign language learning in the Vietnamese sociocultural context.

## **CHAPTER FOUR: METHODOLOGY**

### **4.1 Overview**

Overall, the current study adapts a mixed methods approach to examine the pattern of participation, interaction, and synthesis of information as the key factors of collaborative learning, as proposed by Ingram and Hathorn (2004). This chapter describes the research methodology and explains the procedures of the current study. It begins with a discussion about the research design with a detailed examination of various related elements. Also in this chapter is the discussion of the method of data collection and analysis in accordance with the research questions. A detailed timeline for the whole research project is presented in Appendix A. Comprehensive information about the sociocultural background regarding the institution, the learners, and the uses of technology was presented in Chapter Two: Background.

### **4.2 Research Design**

This section describes the research design and research objective, along with research questions. This is then followed by a presentation on the process of attaining the university human ethics approval and a discussion of the participants with their demographic information, and their collaborative and computer experiences. Also included in this section is an analysis of technical selection criteria and procedures. The research design section concludes with a detailed description of the research procedure.

#### ***4.2.1 Research objective***

The main research objective of the current project is to examine and investigate the effectiveness and perceptions of CMC technologies in collaborative foreign language learning in a Vietnamese sociocultural EFL context.

### **4.2.2 Research questions**

Against the backdrop of the literature review, the following are the research questions that guide the study:

1. What is the nature and contribution of online synchronous discussion in comparison with traditional face-to-face discussion in collaborative learning in the EFL classroom?
2. What is the nature and contribution of online asynchronous peer review in comparison with traditional pen-and-paper peer review in collaborative learning in the EFL classroom?
3. To what extent, and in what ways, do online exchange processes lead to improved English language achievement?
4. What are students' reflections on and perceptions of the application of CMC collaboration in the EFL classroom?

Mixed methods research (Dörnyei, 2007), or mixed research (R. B. Johnson, Onwuegbuzie, & Turner, 2007), defined as an approach to knowledge that endeavours to take into account “multiple viewpoints, perspective, positions, and standpoints” (R. B. Johnson, et al., 2007, p. 113) was applied to investigate the roles of both synchronous and asynchronous CMC in the development of EFL learners' collaborative learning in comparison with the traditional face-to-face and pen-and-paper modalities. This innovative research paradigm, according to Luppicini (2007), is the preeminent way to accomplish a thorough understanding of CMC as a complex system. It is an amalgamation that incorporates ideas from qualitative and quantitative research. By congregating numeric details from quantitative data and specific information from qualitative data, an elaborated and comprehensive understanding of a target phenomenon can be achieved through differently complementary angles; and the two sets of findings, i.e. quantitative and qualitative, can be cross-verified against each other. R. B. Johnson et al (2007) have also named it between-methods triangulation(R. B. Johnson, et al., 2007). Above all, the complex nature of classroom environments, as in the current study, “lends itself to mixed methods research” (Dörnyei, 2007, p. 186).

Both quantitative and qualitative data were therefore collected and analysed to examine and compare the process and product of the collaborative learning between two classes of EFL learners: the control classes using traditional face-to-face and pen-and-paper forms for collaboration and the CMC classes using the CMC synchronous and asynchronous modes. Students' reflections on and perceptions of the use of CMC in the classroom was also part of the research.

#### ***4.2.3 Human ethics approval process***

Before actual research was carried out, stringent procedures had to be followed to obtain permission from the Human Ethics Committee of the degree granting institution, Massey University. I went through three phases of the application for human ethics approval as required by Massey University Code of Human Ethical Conduct. The first phase was the design and refinement of the research instruments, including students' questionnaire on educational and cultural background, group selection and assessment for control and experimental study, and semi-structured interview questions. In the next step, I provided detailed information that was outlined in the application form. A separate Information Sheet (Appendix B) and a Consent Form (Appendix C), both in English and Vietnamese, were prepared for the students. These were submitted for approval. The final stage was the amendments to be made based on the recommendations of the Ethics Committee.

In addition, a letter of request for permission (Appendix D) to undertake the research at the host college was also prepared and sent to the College Rector. A letter of approval (Appendix E) was received before the actual research was conducted. A word of note is that the ethics approval process set out by Massey University is much stricter than ethics practices at the University of Danang, where similar procedures and guidelines are not available. In other words, human ethics issues in research are not yet recognised at the research site. Finally, the ethical procedures (application code: 08/37) were reviewed and approved by the Massey University Human Ethics Committee: Southern B on 31 October, 2008 (Appendix F), valid for 3 years from the date of approval. The current research was carried out at the host college during early February 2009 and ended in May 2009. A word of note is that the ethics approval process set out by Massey University is much stricter than the research

site's ethics practices. The researcher has learned much about ethics issues from the process of obtaining permission from the Human Ethics Committee at Massey University.

Before the research began in February 2009, written consent of the participants was obtained for the collection, analysis, and quotation of the transcript data. Regarding the perceived disadvantages to the participants that might be expected, it was explained to the students in the control group, who would not be able to have access to the computers in this course, that they would have other opportunities to do so in other courses in the same semester, or in various other courses during the following semesters. It is the University's mission that every student will have equal access to new technology and methodology at certain times within the 4-year program and this is monitored. Students do not have access to computers during all of the four years at college due to a very large number of enrolments and limited number of computers on campus. Therefore, the students take turns to learn with technology throughout the program.

Finally, related to the human ethics issues is the role of the teacher/researcher in the classroom. In the current project, the researcher played the role of teacher. This may trigger some disadvantages, among which is how to separate these two roles, i.e. researcher versus teacher, for investigation and research. This however results in several advantages regarding data collection and management, classroom control and observation, and student-teacher interrelationship. The teacher/researcher tried to be objective in all aspects of the study, including the process of teaching, data collection and analysis. Ultimately, the purpose of the study is not to show that technology is better, but rather to show differences between the models of learning. Therefore, the researcher had no reason for not being objective.

#### ***4.2.4 Participants***

As described in Chapter Two, this classroom-based research was conducted in the College of Foreign Languages (CFL), The University of Danang (UD), Vietnam. The participants for the study included those students who were at the time taking a four-year BA in TEFL program and would become teachers of English in secondary

schools when they finished their study. Their language competence was at upper-intermediate level.

There were 65 students from two intact third-year EFL classes: 35 from the class entitled 06SPA01, and 30 from class entitled 06SPA02. Later during the data collection process, data from five students in class 06SPA01 were excluded due to the incompleteness of the task, making the final number of 60 students, with 30 from each class, available for research data collection and analysis. One of the two classes was designated as the control class (06SPA01); and the other, the experimental or CMC class (06SPA02). This designation was totally random in order to increase the credibility of the current study and also due to the fact that the two classes shared a similar level of proficiency in English and other comparable variables. The control class used face-to-face interaction for discussion and traditional pen-and-paper method for peer review and collaborative writing. The CMC class used synchronous chat for discussion and wikis for peer editing and collaborative writing.

These young adults, ranging from 21 to 24 years of age, with the mean of 21.63 in the control class and 21.50 in the CMC class, were going to take the compulsory 'American Culture' course in semester six, in the eight-semester Bachelor's program (see Table 2.2). To ensure that all students in the CMC class felt comfortable using the computers and to minimise novelty factors (Felix, 2005), practice sessions were conducted periodically before data collection began. In addition, the teacher endeavoured to deliver similar instructions for the two classes throughout the 12-week semester when the current research took place. While the control class studied with the teacher in their normal classroom on every Thursday afternoon, the CMC class worked in the computer lab, equipped with 36 computers for 30 students on every Friday afternoon. Presented below is participants' detailed background information analysed from the pre-project questionnaire data.

#### *4.2.4.1 Demographic statistics*

It can be seen from Table 4.1, presenting the demographic summary of the participants taken from the pre-project questionnaire survey, that there were 31 out of 60 students (57 female and 3 male) who had studied and received their secondary education diploma from the city, while the remaining 29 were from the provincial

regions, which are believed to have certain disadvantages in education in general and computer access in particular. There was clearly no statistically significant difference in the student number between the two classes in this variable. Likewise, there was no statistically significant difference between the two classes in the number of students with different length of English learning at high school (10 years, 7 years, or 3 years). The accumulated GPA<sup>1</sup> between the two classes was also roughly equal. Notably, the mean GPA of both classes (Control class: 7.35; CMC class: 7.44) was higher than the average GPA of the whole course of 370 students enrolled (7.00)<sup>2</sup>.

Table 4.1 Selected background information

		Total (n=60)		Control Class (n=30)		CMC Class (n=30)		<i>p</i> *
		No.	%	No.	%	No.	%	
Gender	Female	57	95	29	96.7	28	92.3	.561
	Male	3	5	1	3.3	2	6.7	
Age	21-22	41	68.3	25	83.4	16	53.3	.506
	23-24	19	31.6	5	16.6	14	46.7	
	Mean	21.57		21.63		21.50		
Demographic background	City	31	51.6	13	43.3	18	60.0	.203
	Province	29	48.3	17	56.7	12	40.0	
English at high school	10 years	11	18.3	6	20.0	5	16.7	.845
	7 years	41	68.3	20	66.7	21	70.0	
	3 years	8	13.3	4	13.3	4	13.3	
Accumulated GPA	Mean	7.40		7.35		7.44		.496
	Max	8.74		8.72		8.75		
	Min	6.47		6.24		6.70		

\* Significant at  $p < .05$

<sup>1</sup> GPA accumulated during the past five semesters until the current study.

<sup>2</sup> Vietnamese grading system is based on the 1-10 point scale, in which from 5 to 6 is considered a pass grade; 6-7: credit; 7-8: good; 8-9: distinction; 9-10: high distinction.

Initially before this study took place, one of the concerns was that there would be a difference in language proficiency between those students who studied at high school in the city and in the province; and between those who had studied English in different numbers of years. Table 4.2 demonstrates some discrepancies in the mean GPA which increased in accordance with the number of years learning English at high school: 7.20 (3 years), to 7.41 (7 years), to 7.47 (10 years). The same pattern can be seen in terms of place, which showed that city students had a higher mean GPA than provincial students, with 7.50 and 7.27, respectively. However, the analysis of variance (ANOVA) procedure for the number of years and independent-samples *t*-test for the place of learning English revealed no statistically significant difference in the mean of the accumulated GPA for the past 5 semesters among those variables. To sum up, it is confirmed that the selection of either class to be the CMC class was not influenced by those variables discussed above, reflected specially in the similar accumulated mean of GPA of the two classes.

Table 4.2 GPA in terms of time and place of learning English at high school

	N (=60)	Mean	S.D.		
Time learning English at high school				<i>F</i>	<i>p</i> *
10 years	11	7.47	.59	.76	.474
7 years	41	7.41	.49		
3 years	8	7.20	.35		
Demographic background				<i>t</i>	<i>p</i>
City	31	7.50	.57	1.69	.096
Province	29	7.28	.38		

\* Significant at  $p < .05$

#### 4.2.4.2 English language proficiency

The students' self-rating English language ability reflected traditional teaching and learning methodology. All students expressed their confidence in grammar, vocabulary, and reading comprehension with the mean score of 3.83, 3.12, and 3.12 respectively in the 5-point scale, with 5 indicating the strongest (Figure 4.1). In particular, there were 42 students (70%) demonstrating a high confidence in their

grammar. Conversely, the self-evaluation showed that their writing, speaking, and especially listening were at a weak level, in which 66.6%, 91.6%, and 93.3% respectively responded from average to weakest for the three items (see Appendix G: Self-rating of English language proficiency: Detailed information).

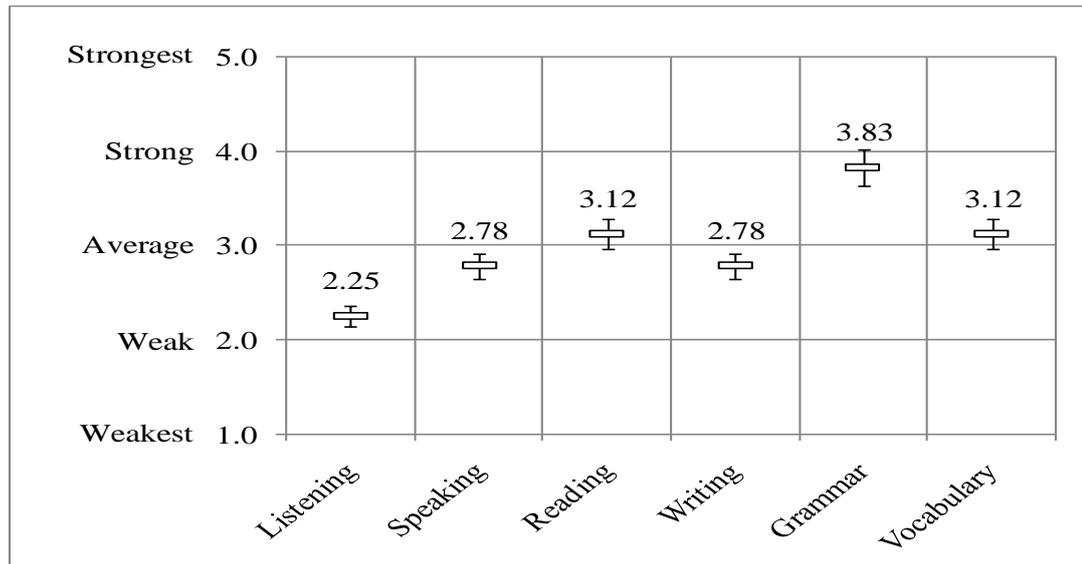


Figure 4.1 Self rating of English language proficiency: Mean

Furthermore, as shown in Table 4.3, there was no significant difference between the two classes regarding the language skills and areas mentioned. The least similarity of the perceived language proficiency between the two classes was the speaking skill with the  $p$  value at .414, still far away from the significant level of .05. In general, both classes shared a similar level of perceived language competence, which made the selection of either class to be a CMC class and the other, a control class less challenging and later comparisons between the two classes more confident.

#### 4.2.4.3 Collaborative learning experience

The pre-project questionnaire data also asked the students how much in-class interaction they had with the teacher and other classmates at present and how much interaction they really wanted. Their responses demonstrated the desire to have more in-class interaction with both the teacher and classmates. The tendency increased from the mean of 1.88 (denoting below 50%) to the mean of 3.00 (meaning around

51-70%) with the teacher. The same discrepancy was seen with in-class interaction with classmates, from 1.43 to as high as 3.47, three times more (Figure 4.2). This reflected the class situation where lecturing was the principal method of transferring knowledge from the teacher to the learners, which most students were not particularly happy with.

Table 4.3 Perceived English language proficiency between the two classes

Skill	Class	N (=60)	Mean	S.D.	<i>t</i>	<i>p</i> *
Listening	Control	30	2.33	.80	.72	.475
	CMC	30	2.17	.99		
Speaking	Control	30	2.70	.60	-.82	.414
	CMC	30	2.87	.94		
Reading	Control	30	2.80	.77	.16	.877
	CMC	30	2.77	.90		
Writing	Control	30	3.07	.79	-.52	.604
	CMC	30	3.87	.97		
Grammar	Control	30	3.80	.71	-.30	.763
	CMC	30	3.87	.97		
Vocabulary	Control	30	3.17	.59	.63	.532
	CMC	30	3.07	.64		

\* Significant at  $p < .05$

The students also expressed their preference about collaborative learning when indicating the usefulness of pair/group work, the usefulness of classmates' comments, and the benefits of collaborative learning in improving English. This was revealed in the positive results of more than 90% answering 'Yes', while less than 5% replying either 'No' or 'No idea' for the three items related to collaborative learning (see Appendix H: Perceived benefits of collaborative learning: Detailed description).

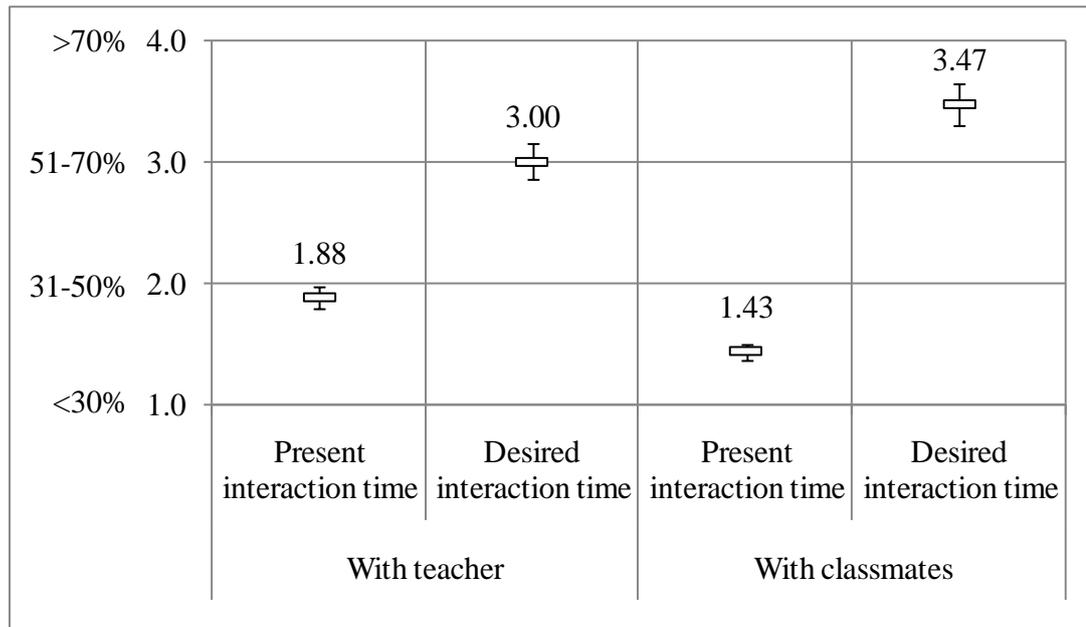


Figure 4.2 In-class interaction time with teacher and classmates: Mean

#### 4.2.4.4 Perceptions of networked computers

The students expressed their optimistic perceptions of the benefits of networked computers in their learning, in that 58 out of 60 students surveyed agreed (29) and strongly agreed (29) that the use of computers is beneficial for learning English in general (Figure 4.3). By the same token, most students believed in the advantages that networked computers might bring about in the development of various language skills and areas, with the agreement level of 86.6% for listening, 91.7% for reading, 83.3% for writing, 86.7% for grammar, and 95% for vocabulary. It is however noted that the participants expressed a greater doubt about the usefulness of networked computers in improving speaking skills and pair/group work when 43.4% and 41.7% respectively gave a negative response to the two questionnaire items. This can be explained by the fact that they had never done collaborative learning through computers before and that to them the pair/group work definitely involved interaction or exchange in person (see Appendix I: Perceived benefits of networked computers: Detailed description).

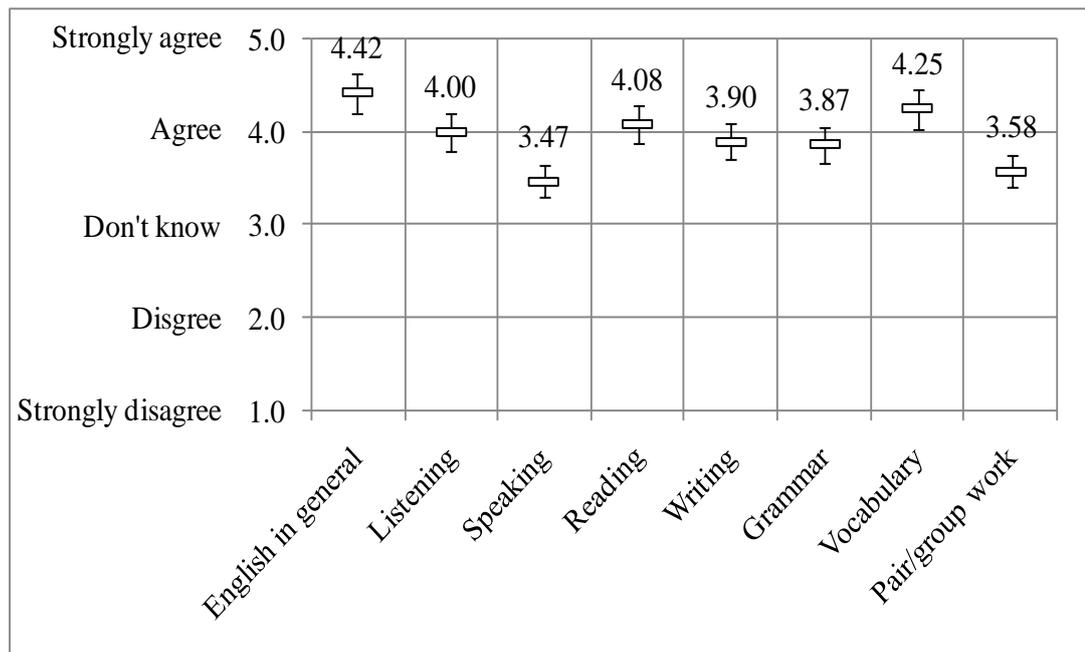


Figure 4.3 Benefits of networked computers: Mean

#### 4.2.4.5 Computer proficiency

This section describes the computer proficiency of those students who were going to participate in the CMC experience. Only details about students in the CMC class are presented to help capture an overview of their computer proficiency. Of the 30 students in this class, 60% owned computers at home, while the remaining 40% did not (Table 4.4 shows all information of both classes just for comparison purposes). Though 60% of them had used computers for more than a year, the self-evaluation of computer and typing skills showed a need for further training. Twelve students self-reported on their computer skills as being poor, while another ten considered themselves good, seven fairly good, with only one student feeling very good at computers. A similar pattern was seen in the typing skill, in which 17 students were weak in typing, whilst six each responded good and fairly good. Again, only one student was confident with her typing ability.

Table 4.4 Self-rating of computer experience: Descriptive statistics

		Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
		No.	%	No.	%	No.	%
Own computers?	No	20	66.7	18	60.0	38	63.3
	Yes	10	33.3	12	40.0	22	36.7
Start working with computers	< a year	8	26.7	12	40.0	20	33.4
	> a year	22	73.3	18	60.0	40	66.7
Computer skills?	Poor	16	53.3	12	40.0	28	46.7
	Good	5	16.7	10	33.3	15	25.0
	Fairly good	7	23.3	7	23.3	14	23.3
	Very good	2	6.7	1	3.3	3	5.0
Typing ability?	Poor	16	53.3	17	56.7	33	55.0
	Good	7	23.3	6	20.0	13	21.7
	Fairly good	5	16.7	6	20.0	11	18.3
	Very good	2	6.7	1	3.3	3	5.0

Figure 4.4 illustrates how much time and what the students did with computers throughout a week. According to the graph, the students spent an average of 11 – 15 hours per week working with computers, although half the students (15 out of 30) notably spent more than 21 hours a week. Most of the online time was used for surfing the Internet, learning English, and word processing (averaging 6 – 10 hours a week). The amount of time spent on email, chat and blog/wiki, on the other hand, was rather low with the mean of less than 5 hours per week. Results from the questionnaire also revealed that seven students in the CMC class had never chatted online before and 21 students spent less than 5 hours/week chatting. This number for blog/wiki was 16 and 13 students respectively. It is suggested that for a computer-based research like the current study to be legitimate, students need to be computer-literate with the information technology (Coniam & Wong, 2004) in general and with the specific programs, such as Yahoo! chat and wikis in particular (see Appendix J: Computer use per week: Detailed information).

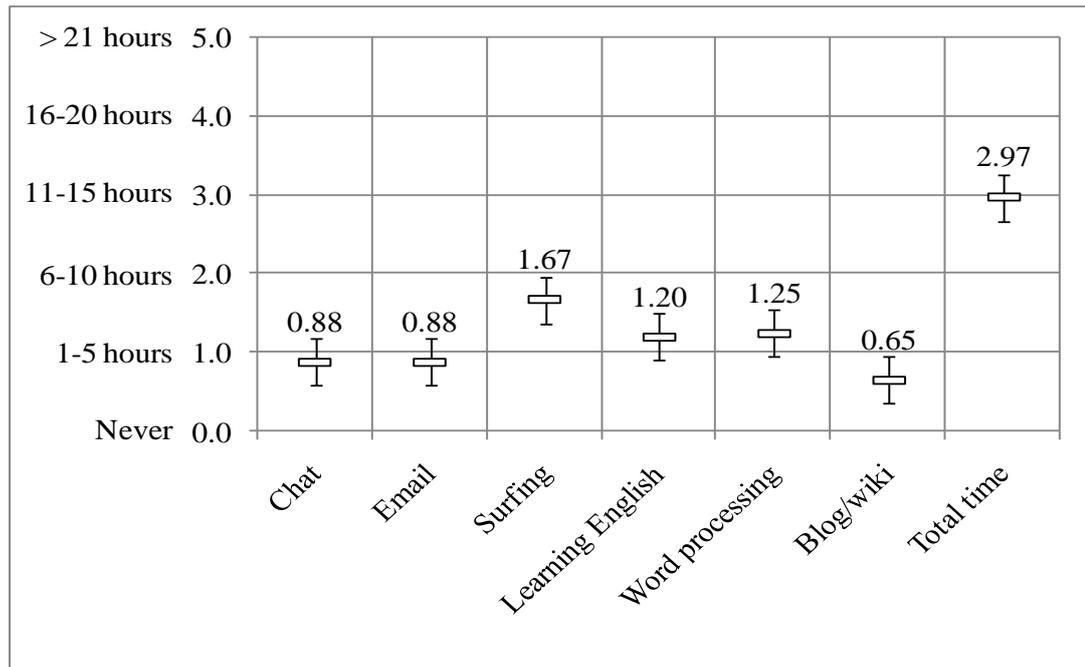


Figure 4.4 Computer use per week: Mean

#### 4.2.5 Technical selection criteria and procedures

This section outlines some concerns during the process of selecting the most suitable tools for conducting the current research. The selection of an asynchronous peer review tool appeared to be less challenging than the negotiation about which synchronous tool to choose for the discussion process. In brief, Yahoo! Messenger was selected for the discussion process, while the asynchronous peer review process as well as the final collaborative product was conducted on PBWiki. Selection priorities included ease-of-use and being free-of-charge.

##### 4.2.5.1 Synchronous chat

Due to the reality that the college has not yet been equipped with any course management systems, such as Blackboard and WebCT, not even an open-source one like Moodle, I had to search for and build up the facility myself. Free and easy-to-use computer and Internet programs were the priority. Initially, I intended to use the chat function of the Gmail system as the tool for the CMC class's discussion because no installation was needed for this; the students just needed to get online, logging into Gmail with their own account, and the chat utility would be available there. The

second option that I thought of was Skype, which had good quality chat and voice functions and was also free-of-charge like Gmail. Another possibility was to let the students choose whatever chat platform (Yahoo! Messenger, GChat, Skype, etc.) they felt accustomed to and comfortable to work with. The group would just notify me which platform they used and I would create an account for that platform in order to be able to participate and facilitate the discussions.

However, after conducting the first questionnaire survey, it was revealed that only one third of the class (10 students) had email addresses and 90% of these (9 students) were with Yahoo! Messenger. The same number usually chatted with friends and family through Yahoo! Messenger. On discussing and negotiating with the whole class, the decision was made to use the free Yahoo! Messenger as a chat tool for discussion due to its user-friendly features and, most importantly, its popularity among the students.

Similar to several other chat platforms, the Yahoo! Messenger conversation window is divided into three main boxes. The bottom narrow box allows chatters to type in a message which can be sent by either pressing the return key on the keyboard or clicking the send button next to the box. The message, preceded by the nickname and the time stamp, almost immediately appears on the top, larger, screen-shared box, where all chatters can view the message. The right vertical rectangular box on the right of the screen-shared box presents all the chatters' nicknames (Figure 4.5). In addition, Yahoo! Messenger allows chatters to change text font and colour, to select various emoticons and audibles, and to send and receive photos and files, in addition to the webcam and chat voice functions. Most important of all, this program helps store the chat history, which can be copied and pasted to word processors, or saved into a text file as the first step of data collection.

Later during the week, the researcher arranged with the college technician to have the Yahoo! Messenger software installed into all computers in the lab. By the end of the first week, all the 30 students in the CMC class had created a nickname on Yahoo! Messenger. Some already had one; some others created their own with others' help. With this decision, the researcher could easily control all the ten groups

with only one Yahoo! account (see Appendix K for a snapshot of the teacher's laptop during the chat discussion).

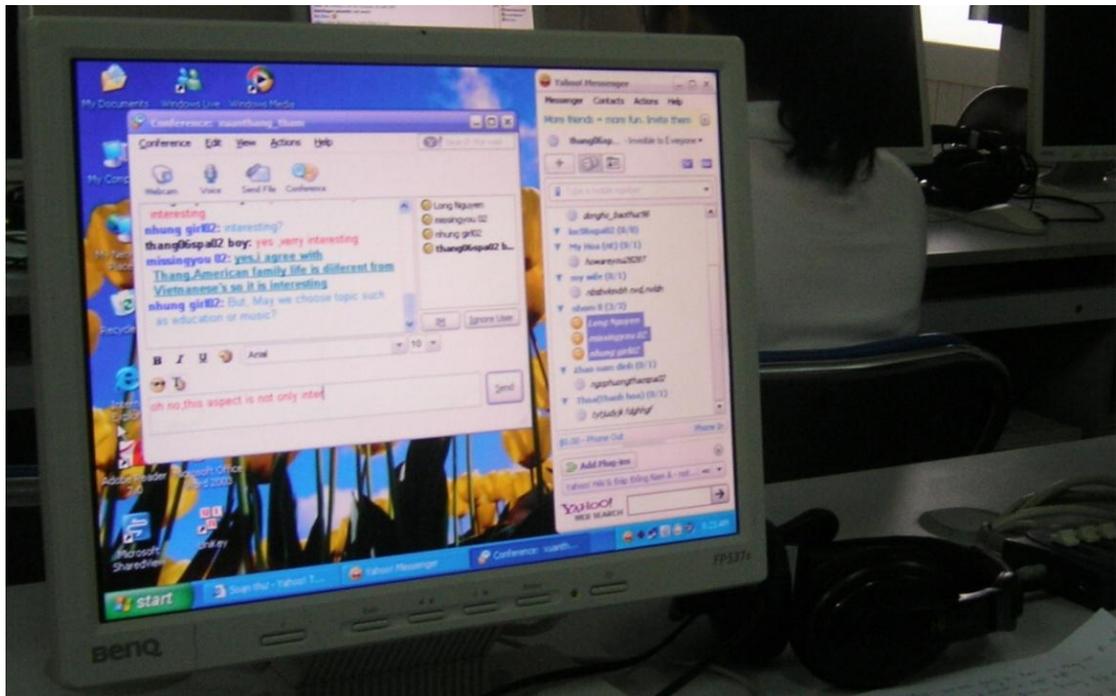


Figure 4.5 A student's monitor during a chat discussion

#### 4.2.5.2 Asynchronous wiki

Wiki has been known as a recent computer-based resource to facilitate collaborative learning (Coniam & Lee, 2008; Kessler & Bikowski, 2010; L. Lee, 2010; Richardson, 2006). The name wiki is Hawaiian for quick or super-fast and the defining feature of the technology is the ease with which pages can be created and updated by several users at the same time. In general, any users can modify any documents and there is no prior review before modifications are accepted, and most wikis are theoretically open to the general public - or at least anyone who has access to the wiki server. Once in a site on the wiki system, users are immediately presented with the most recent writing. This piece of writing can be altered, edited, and resubmitted. The wiki-based web space also offers a hyperlinked revision history of the writing where users can go back and track development and base modifications on a previous version. These features of wiki strongly support a collaborative

Communities of Practices (Wheeler, Yeomans, & Wheeler, 2008). Above all, what makes a wiki different from other forms of online communication, according to Lund (2008), lies in its open architecture. The structure of a wiki “is not imposed or pre-determined ... but emerges as a result of participation” (Lund, 2008, p. 41).

There were several options, like those of chat facilities, to choose which wiki platform to use for the current study. These included Writeboard, Wikispaces, and PBWikis (this was later renamed PBWorks by the provider) among many others. While these platforms share many common characteristics, consisting of sharable, web-based text documents that let users save any edits, roll back to any versions, and easily compare changes, they are different in some minor aspects. Writeboard, being the easiest one, lets users register directly on the frontpage; but this platform does not have much security capacity, i.e. everyone can view a page composed on Writeboard. Wikispaces, on the other hand, despite being quite popular, was not selected for the current study because the comment feature, named Discussion, is not so user-friendly. Users must click on the Discussion button, getting away from the main page, in order to give comments and feedback.

PBWikis, or PBWorks, is different. In addition to being user-friendly (PB stands for Peanut Butter: working on PBWiki is as easy as making a peanut-butter sandwich), it has the comment function located right at the bottom of the main page, making it convenient for users to leave their feedback and comments right below the writing, together with the page history utility that helps users to conveniently compare between versions (Figure 4.6). In addition, the workspace security is very high in PBWikis, where the owner of a site can choose who will be able to view, who will be able to edit, and who will have the same rights as the owner. In general, besides the administrator level usually automatically allotted to the owner of the site, there are four other permission levels that can be assigned to different users (by the administrator), namely editor, writer, reader, and page-level only. A person must ask for, or is invited to, one of these permission levels by, first of all, sending an email to the owner/administrator. Another feature of PBWiki is that any edits, comments, feedback, and changes to the site are almost immediately informed to the site users at all levels through emails. Therefore, it was convenient for the researcher, who just checked his regular email to see if any modifications had been made in any groups.

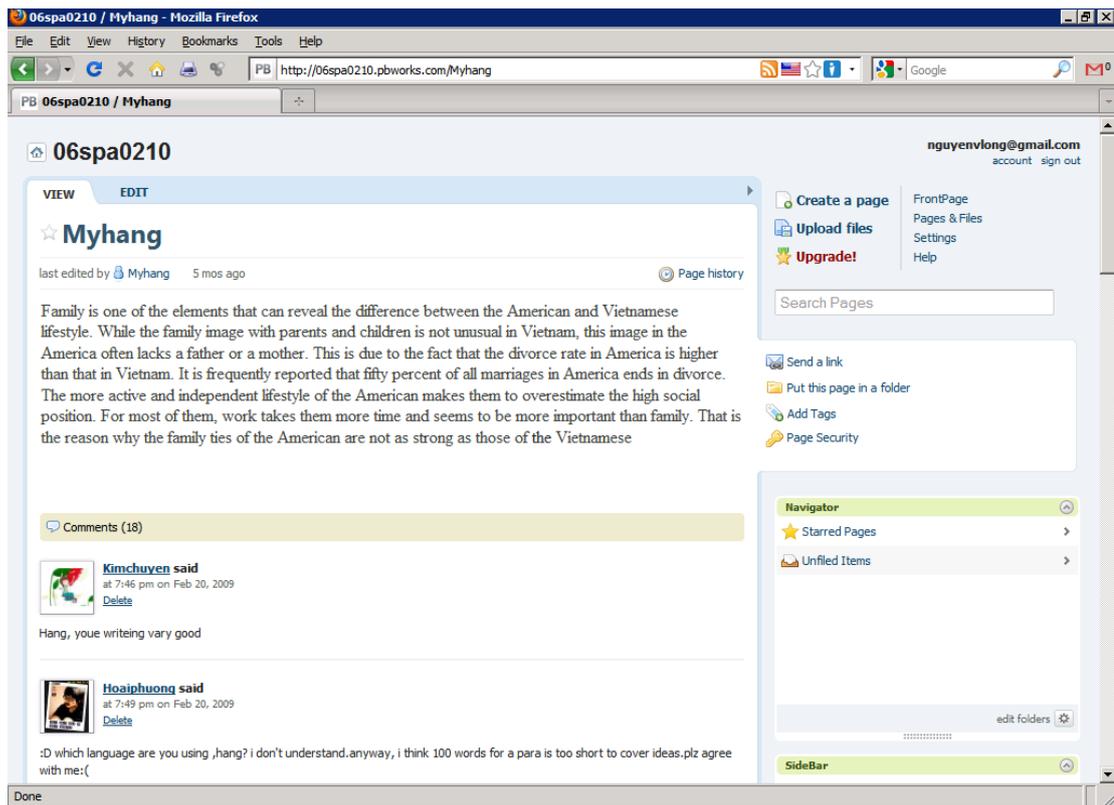


Figure 4.6 A snapshot of PBWikis

In sum, while there was a negotiation between the researcher and the students about which chat platform to use, it was the researcher's decision to choose the wiki platform as this web-based resource was completely new to most of the students in the study. PBWikis was hence selected. Ten PBWiki sites in total were created by the researcher, naming from 01 to 10 after the class name, i.e. 06SPA0201, 06SPA0202, and so on. The researcher was at the administrator level in all the PBWiki sites while the students could access at the writer level in their own group. A basic instruction of how to use this wiki site was prepared by the researcher and placed on the front page of each group site (Appendix L). The three students in a particular group could view, edit, and give comments on their own group sites only. The purpose of this was to help CMC students feel a certain degree of privacy within their group, and also to make it similar to the pen-and-paper situation.

All the sites, however, were open to public view by the end of the course when all assignments had been completed, just like sharing the final work with other groups in the control class so that the whole class could learn from each other.

#### ***4.2.6 Research procedures***

This classroom-based research (Dörnyei, 2007) started at the beginning of the second semester of the academic year 2008-2009 at the College of Foreign Languages, University of Danang. As the teacher, and also the researcher, I chose to teach the ‘American Culture’ course, which I have been teaching for the past 5 years, in the two third-year TEFL classes, as described in Section 4.2.3. The course was taught entirely in English, centring around a large theme that covers various topics relating to the life and culture of American people. It should be noted that there was no fixed order for the topics. Rather, the order in which the topics were covered in each lesson was a process of negotiation between the teacher and the students. It had a strong emphasis on achieving cultural and language competence through collaborative learning among students (L. V. Nguyen, 2008b). The course contents and requirements, along with other issues related to the course, were put on a website created by the researcher with the purpose of helping the students get used to the application of the Internet to learning (<http://americancultures.pbworks.com/>). This website was created using PBWiki. However, no instruction of how to use this wiki was introduced to the students at the beginning of the course because it was so new to them and the researcher did not want to distract them from the focus on the content of the site. They just got access to the website for the course information, viewing course-related video clips as well as extra reading materials compiled and uploaded by the researcher.

In the first week of the semester, the teacher/researcher introduced the course content and the course requirements (see Table 4.5 for the detailed schedule of the 12-week classroom study), in which to pass this course successfully, the students needed to complete two assignments: an on-going assignment (30%) and a final test (70%). While the final test, usually consisting of a series of multiple-choice questions for easy marking due to the large number of students (370 in all), was administrated by the Department of English at the end of the course, the on-going assignment was monitored by class teachers during class hours. This on-going task required the students to work in groups of three students each, the number suggested by Kern (1995) and Lee (2002) as beneficial to learners and ideal regarding later data analysis. They could form the group themselves and worked together throughout the

semester. The task was a 250-300 word essay about at least three similarities and/or differences between American and Vietnamese culture on a topic of their choice.

Also in this week, the Information Sheet and the Consent Form, in both versions of English and Vietnamese, were delivered to the students with explanations from the teacher about the purposes and procedures of the research. The selection is volunteer-based (as detailed in the Human Ethics section); and all of the students in the two classes I taught agreed to participate in the study. The pre-project questionnaire on the students' bio data, collaborative learning, and computer experience was completed by the students by the end of the class in this first week.

Actual data collection started in week four when the two classes began their group discussion in order to select a broad topic for their group essay after briefly having gone through the course contents during the past three weeks with the teacher. Prior to the discussion, each group received a guideline sheet for discussion (Appendix M) from the teacher, giving some suggestions of what should be included in the discussion, including the election of the group leader and the proposed length of time for discussion, being 30 minutes.

Each group in the control class chose a corner in the classroom, distant from each other in order to avoid being disturbed by other groups' noise. Some groups even moved to other vacant classrooms or to the library to conduct their discussion. They could use a cassette player with tape borrowed from the library, or their own mobile phone with a record function. The teacher had to move between places to give assistance and to make sure the discussions and the recordings were performed properly.

The CMC class, on the other hand, conducted their group discussion via the chat function of Yahoo! Messenger, which they had previously practised in the computer lab with technical support from the teacher. Due to the unexpected breakdown of some computers and the slowness of the Internet on campus, which hindered the whole class of 30 students going online at the same time, two thirds of them were requested to leave the lab that Friday afternoon and willingly came back either on Saturday morning or afternoon to carry out their discussion.

As a result, while the ten groups in the control class discussed their task in three different places on the same Thursday afternoon, those in the CMC class had to chat in three different sessions: Friday afternoon, Saturday morning, and Saturday afternoon. All ten audio recordings and ten chatscripts were received by the teacher by the end of the week. Homework for the students was to write the first draft for their group work. While the control groups wrote on paper, the CMC groups composed on PBWiki, which was introduced to them right after the chat discussions in each session. Invitation for the after-chat group interviews was also sent to the CMC class, and all ten groups agreed to participate in different time slots arranged between the teacher and each group.

The first individual drafts were collected in the following week during the normal teaching hours. While each member in the control groups made three copies of their original drafts available for the teacher and two other group members for commenting and editing, the students in the CMC class just finished their drafts on wiki pages that could be accessed later by the teacher and other members at anytime and anywhere.

Week six started with the introduction of the peer review process when the teacher presented the step-by-step training procedure in the two classes. Students then practised the peer review elements with the teacher, based on a sample peer review sheet provided (Appendix N). Later, the students started giving comments and feedback on their group members' drafts in their own time. The control groups worked on paper; the CMC groups, directly on the wiki pages. These commented drafts were collected (in papers) and reviewed (online) by the teacher in the following week.

Finally, both classes revised their drafts in week eight and were ready to compose group essays with ideas taken from individual drafts; again, the control groups' works were on paper, while the CMC groups' on the wiki pages. All 20 group essays, from both classes, were collected by the teacher by the end of week nine. Only the CMC class completed the post-project questionnaires in week ten, when several of them were invited for the second, post-project interviews. The total of 14

individual interviews was conducted on campus during the last two weeks of the semesters. Table 4.5 outlines the research timetable.

Table 4.5 Schedule for the fieldwork study (12 weeks)

Timeline	Teacher/researcher	Control class	CMC class
Week 1 2-8/2	Introduces the course contents and requirements and prepares students for collaborative task. Delivers a questionnaire on students' background.	Choose and form groups of two or three. Each group elects a leader. Email lists are gathered.	Select a platform for chat.
Week 2 & 3 9-22/2	Introduces collaborative learning and CMC. Special instructions given to CMC group for using chatrooms.	Attend and get to know each other in groups. More practice on discussion in week 3.	Play around in the chatroom with the teacher.
Week 4 23-1/3	Collects transcripts for analysis. Conduct for group interviews with CMC class	Select the topic, assign tasks, and discuss content to be included. Face-to-face; record discussion to submit to teacher.	Chatroom; save transcripts to forward to teacher.
Week 5 2-8/3	Introduces PBWiki to CMC class. Collects the individual draft for analysis.	Submit teacher drafts (paper).	Send drafts to teacher via link of PBWiki.
Week 6 & 7 9-22/3	Introduces peer review procedures. Presents a sample with step-by-step training procedure for students to give feedback in groups.	Practice face-to-face peer work	Practice face-to-face peer work; then move on to PBWiki.
Week 8 & 9 23/3-5/4	Facilitates the process and supports help if needed. Collects commented drafts through papers and from the Wiki  Collects complete work for analysis.	Organise peer response and feedback in group through paper exchange.  Submit completed task	Organise peer response and feedback in group through PBWiki.  Submit complete task

Timeline	Teacher/researcher	Control class	CMC class
		on paper.	by sending PBWiki links to teacher.
Week 10 6-12/4	Prepares for interviews and questionnaires.		Attend
Week 11 & 12 13-27/4	Interviews and course summary	Attend	Attend

### 4.3 Data Collection

As is the nature of mixed-methods research, the study contained data from multiple sources once an informed consent had been obtained from the participants. There were eight types of data, both quantitative and qualitative, collected during the whole project.

#### 4.3.1 Pre-project questionnaire

A pre-project questionnaire was distributed to the two selected classes after the participants were briefed on the purpose of the study, and had had an opportunity to ask questions about what would be involved. The questionnaire consisted of three main sections, including bio data, collaborative learning experience, and computer usage expertise. In addition, students' preliminary attitudes towards collaborative learning and the use of technology in the language classroom were also added as part of the questionnaire.

Information from this survey helped to attain a better understanding of the students' individual, socio-cultural, and academic backgrounds prior to the project activities and also assisted during the after-chat interview. The information was also used to gauge how much technical help they would need during the project as previous research (Cornelius & Boos, 2003, for example) has shown that learners exhibited decreased mutual understanding and coherence and increased coordination and

accommodation difficulties when they did not receive sufficient training in communicating via CMC.

The questionnaire was piloted on a colleague and a student as a non-native speaker to help identify questions which might be ambiguous or difficult to interpret, and to ensure if the layout and content were user friendly (Appendix O).

#### ***4.3.2 Synchronous discussion transcripts***

The FTF group discussion was recorded and transcribed; then all the transcripts of both FTF and electronic chat discussions were collected. As there were 30 students in each class, 10 FTF group discussions and 10 electronic chat discussions were obtained, making up the total of 20 transcripts, approximately 30-60 minutes in length each. Information from the transcript analysis helped to identify the amount of participation and the level of interaction, leading to the synthesis of information. The transcripts were also referred to during the after-chat interviews in order to get a better understanding of students' behaviours during the online chat discussion.

#### ***4.3.3 After-chat interview***

An interview schedule was prepared right after the students finished the online chat discussion in week four. The ten groups of three students each in the CMC class were invited for an interview with a semi-structured approach, which was believed to allow for spontaneity and flexibility (Zafeiriou, Nunes, & Ford, 2001). The interview questions consisted of those relating to the students' behaviours, reflections on, and perceptions of the chat discussions (Appendix P). Group interviews were thought to be an effective way of obtaining information as the students would be less inhibited and would be able to help each other express ideas. In addition, the participants were asked to discuss some of the notable incidents arising from the chat exchanges. The purpose of these group interviews was to gain understanding of the nature of the synchronous online discussions as part of the collaborative learning.

All of the interviews were audio recorded using a digital voice recorder and transcribed for later analysis. Notably, transcripts of the interviews were put into word documents and emailed to individual students to request any modifications,

additions, or further comments arising from their schemata. However, no additions were collected perhaps because the students were so busy during that time of the semester or they thought they had expressed their ideas thoroughly during the interview.

#### ***4.3.4 Asynchronous peer reviews***

A total of 60 students' drafts together with their peers' feedback were collected, including 30 pen-and-paper drafts and 30 wiki pages. Instances of peer review were counted, sorted out, and coded using the qualitative analysis software, NVivo. Data gathered from these drafts and correlated feedback helped to examine how effective APMC peer reviews were in comparison with pen-and-paper.

#### ***4.3.5 Final collaborative products***

All 20 final collaborative writing products from 20 collaborative groups, with 10 from the control class and the other 10 from the CMC class, were collected at the end of the project. Quantitative data attained were three linguistic features of the writing products, namely grammatical accuracy, syntactic complexity, and lexical density. In addition to this, a qualitative evaluation of the 20 essays was conducted in consideration of the content, the organisation and structure, and the use of language. The purpose of analysing this type of data was to compare the final collaborative products between the two forms of treatments: control and CMC.

#### ***4.3.6 Post-project questionnaire***

The participants in the CMC class were invited to complete a post-project questionnaire right after the project. The questionnaire was designed according to a 4-point Likert scale from 1 (strongly disagree) to 4 (strongly agree). The use of Likert scale questions would allow for different possible responses and give some indication of strength of feeling. The *middle* point of 'neutral' or 'don't know' as in many popular 5-point Likert scale models was purposefully removed from this questionnaire to encourage students to think deeply before deciding to agree or disagree with 24 items in the questionnaire (Appendix Q). Below is an example of the questionnaire item:



All interviews were audio recorded and transcribed for evaluating students' reflections on and perceptions of computer-mediated collaborative learning. Again, transcripts of the interviews, before being imported into NVivo for analysis, were put into word documents and emailed to individual students to request corrections, additions, or further comments to help enrich the data collection. Nevertheless, only one student added some more comments.

#### ***4.3.8 Observations***

Various observation techniques, including keeping a diary, taking notes, taking photos, and especially, keeping the online blog as the main tool of reflection, were used during the time of conducting the project. Physical backdrops and individual students were observed for any emerging themes or interesting details and behaviours during the project. The purpose of this observation approach was to enable the researcher to experience the setting as a whole while being immersed in the classroom environment. This was valuable information for triangulation of data with the other sources for data analysis.

### **4.4 Data Analysis**

This section of the chapter describes the process of coding and analysing the multiple sources of data, taking multifaceted evaluations and interpretations into consideration. It starts with the discussion of how to select a robust conceptual framework of analysis for both SCMC and APMC interactions. This is then followed by a detailed description of the analysis process in responding with the four research questions, intermingled with the introduction of several computer-based analysis programs used during the analysis.

#### ***4.4.1 Conceptual framework for analysis***

While searching for a suitable framework applicable or adaptable for the current research, which involves both synchronous and asynchronous interactions, I trialled and evaluated several available frameworks. Among them were the 'Community of Inquiry' by Garrison et al (2001), the coding scheme used to describe utterances in online collaboration by Curtis and Lawson (2001), and the three levels of group

interaction by Mangenot and Nissen (2006). It can be seen that each framework has its own value and orientation. Each focuses its attention on different aspects of student involvement and quality of online interaction. There is, of course, no single best frame for all research. Rather, the selection of the most suitable frame depends much on the nature of a particular study with its own aims, objectives, and purposes.

Garrison et al's (2001) 'Community of Inquiry', which presents a worthwhile educational theory including both teachers and students, presumes that learning takes place within the community in the course of interaction of three principal elements, namely cognitive presence, social presence, and teaching presence. This framework is not quite suitable for the current study as it seems to mainly focus on ACMC analysis. In addition, the framework involves teaching presence, which was not included in this study. More importantly, the data available for analysis are not correlated with the indicators compiled by Garrison et al (2001) in the three presences. Similarly, it is the data in the current study that also excludes the selection of the coding scheme proposed by Curtis and Lawson (2001), which concentrates primarily on ACMC and examining FTF learning behaviours of collaboration applicable in online environments. Many elements in this coding scheme cannot be equivalently applied to the subcategories preliminarily coded from the data in this study.

Since this research concerns the collaborative learning and interactive characteristics of both SCMC and ACMC, the adaptation of the three levels (or themes) in collaboration suggested by Mangenot and Nissen (2006), closely tied to cognitive psychology and educational psychology, seems to be appropriate as regards analysing data and answering the research questions, involving both SCMC and ACMC. In other words, this framework is pertinent to the type of interaction and the research objective.

These three themes, indicating the three collaborative features: socioaffective, organisational and sociocognitive in collaborative learning (Mangenot & Nissen, 2006), were used as a backbone running throughout the coding and analysis processes of SCMC and ACMC interactive features in the current study. While the socioaffective theme reflects how students get along with others during the

interaction process, the organisational theme indicates the planning, monitoring, and evaluating of the task; and the sociocognitive theme signifies how these students resolve the task together (Mangenot & Nissen, 2006). Emergent sub-categories from the coding process were entered into the respective theme accordingly. In other words, this inductive analysis aimed to discover categories and interrelationships emerging from data rather than through predetermined deductive hypothesis (Stacey, 1999). More specifically, the data analysis and coding process was based in part on the theory of collective activity, proposed by Mangenot and Nissen (2006), and in part on topics that emerged from the analysis of transcripts and comments.

Described below is the detailed data analysis process used to answer the guiding research questions.

#### ***4.4.2 Synchronous discussions***

The aim of analysing the synchronous discussions of the two classes was to answer the first research question: What is the nature and contribution of online synchronous discussion in comparison with traditional face-to-face discussion in collaborative learning in the EFL classroom? All the transcripts (see Section 4.3.2) were analysed.

The first level of analysis of the transcripts of these discussions involved a quantitative examination. Each transcript was initially analysed in terms of length of discussion, total number of turns, along with the number of turns made by each group member, total number of words, together with the number of words contributed by each group member, and the average number of words per turn. These variables helped to attain an overview of the differences between the two modes of discussion. All of these quantitative analyses were conducted with the support of the software Computerized Language Analysis (CLAN), a program designed specifically for conversation analysis.

In order to determine if participation was equally balanced among students in the two types of discussions, the number of words per person was used to calculate the participation percentage per member, which was then used to calculate the Gini coefficients of inequality for each mode of discussion (Fitze, 2006; Warschauer, 1996). The Gini coefficient presents values from 0 to 1, in which the smaller Gini

coefficients correspond to greater equality (see Appendix S for the detail of how to calculate the Gini coefficients).

Participation is a necessary but not a sufficient component of collaboration. The qualitative level of data analysis involved intensive content and discourse analyses of all of the transcripts in order to measure the extent of interaction. Principles of computer-mediated discourse analysis (CMDA) were also applied, especially for CMC transcripts, at this stage. CMDA, according to Herring (2004), is any analysis of online behaviour that is grounded in empirical and textual observations about language and language use. In other words, this stage of the interactional analysis involved the coding and counting method of content analysis, followed by the examination of various features of interaction, such as “turn-taking, topic development, and other means of negotiating interactive exchanges” (Herring, 2004, p. 340). Following is the discussion of the interactional analysis procedure. These transcripts were coded into episodes. Episodes which might vary in length from a single turn to a number of turns (Storch, 2005) were classified according to their primary focus or purpose in the conversation. In other words, each episode was coded for what the students seemed to focus on. This level of analysis of episodes contributed to understanding how the discussion was related to the task.

At the outset, following suggestions from Shekary and Tahririan (2006) and Gánem-Gutiérrez (2006), I attempted to code the episodes as independent or interactive ones. The interactive episodes would then be categorised into either off-task, language related, or task related, i.e. direct focus on discussion of the task. However, after the data for the current study was collected and analysed, it was clear this classification did not work because there were minimal instances of language-related episodes and because off-task episodes, when being viewed from SCT, had their own significant roles in the collaborative learning community and thereby needed further analysis.

The episodes were alternatively categorised and allocated into three large themes as described in the previous section, namely socioaffective, organisational, and sociocognitive (Mangenot & Nissen, 2006) according to their purposes in the discussion. The three themes were then subcategorised into smaller topics respectively. Emergent topics in each theme were used to organise analysis of the

focus and purpose of each episode (Figure 4.7 and Appendix T: Coding scheme for discussion episodes). All the coding process was conducted using NVivo 8.0, a qualitative analysis computer program. NVivo helps gather data together by coding episodes into a node, a term used by NVivo to denote category. All of the data in a node, e.g. emotional expressions, social cohesion, etc. can be later viewed and reviewed in a single window, making it convenient and efficient for the researcher to conduct a qualitative type of analysis of a large amount of data.

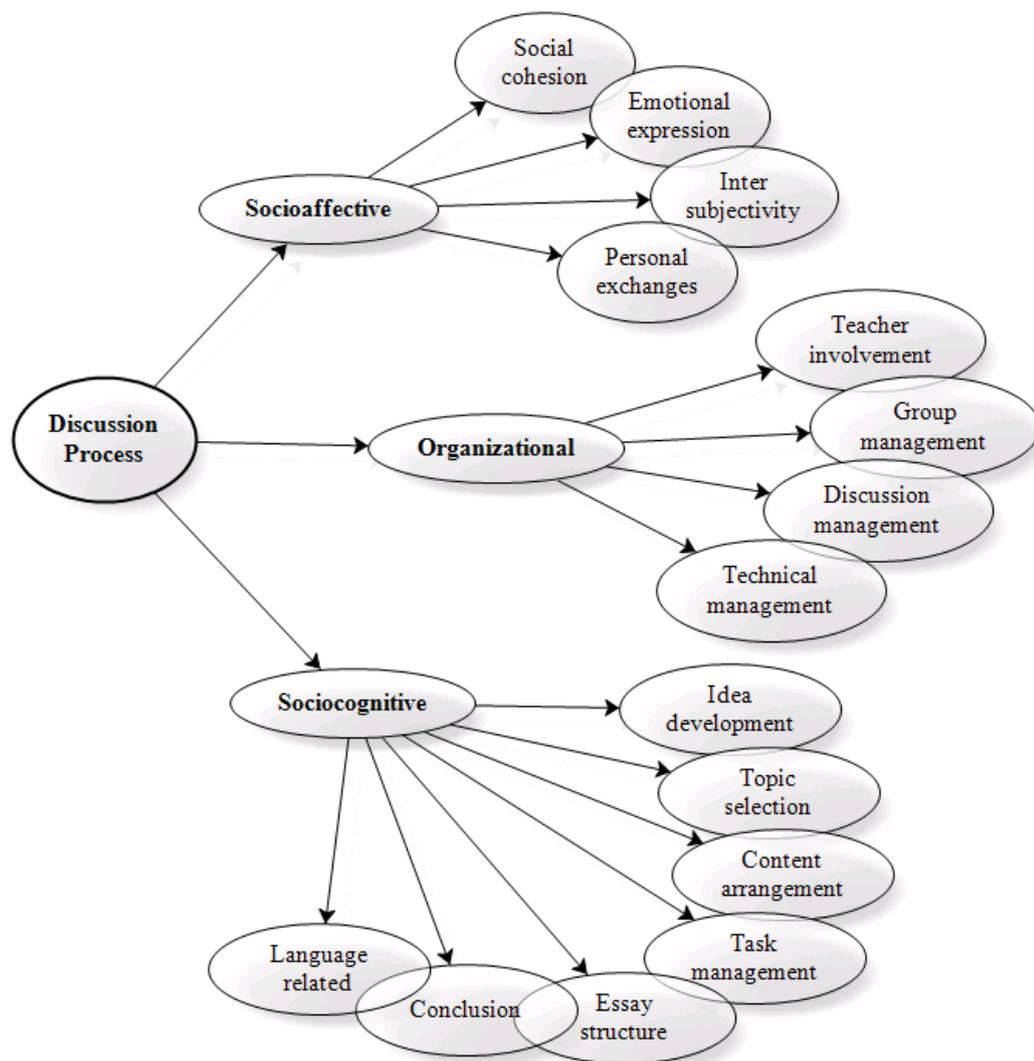


Figure 4.7 Coding matrix for the synchronous discussions

While the control group discussion transcripts showed rather smooth patterns of running episodes, i.e. one after another in an orderly fashion, the CMC group discussions predictably revealed the reality that episodes were much more overlapped and looked chaotic or incoherent. In addition, two or more topics were quite often discussed simultaneously in the CMC discussion data. The normal chunk-by-chunk coding procedure proved to be difficult, if not impossible.

Principles of thread theory, introduced by Herring (1999), were therefore applied to the coding process. This thread idea was initiated in order to “provide an analytical method to examine the interactional process of synchronous CMC” (Shi, et al., 2006, p. 32). According to Shi et al, threads have four characteristics. First, threads can *jump*, indicating that messages in SCMC appear in non-sequential and non-linear order. The continuity of a thread is interrupted by the interference of messages from other threads. Second, two or more threads can *parallel*, referring to the simultaneous occurrence of several threads in a particular timeframe. In other words, group members sometimes discuss two or more topics simultaneously. The third feature of an SCMC discussion regards *closure resistance*, in which the commencement of a new thread does not necessarily end the previous thread. Finally, threads may have *multitaskers*, indicating that participants can at the same time engage in multiple topics (see Appendix U for snapshots comparing FTF and CMC discussions in terms of chaos). To make it clear and easy to follow, the terms ‘episode’ and ‘thread’ are synonymously labelled in this study and can be used interchangeably.

Finally, a more in-depth analysis of the sociocognitive theme with its various subcategories was conducted. A profound coding process at this stage would help to find out how participants express their mutual respect for each other’s contributions; how students challenge each other’s ideas; and especially how members negotiate with each other to attain shared understandings during the discussion process. All of these would assist in analysing the level of synthesis of information resulting from the synchronous discussions.

Combined with the intensive data analyses described above examining the value of the SCMC discussion in comparison with the FTF discussion, the nature of SCMC

was also described and interpreted with the support of the qualitative data from the after-chat interviews and the researcher's observation.

#### ***4.4.3 Asynchronous peer comments***

The peer review or feedback data analysis aimed to answer the second research question: What is the nature and contribution of online asynchronous peer review in comparison with traditional pen-and-paper peer review in collaborative learning in the EFL classroom? Peer response may be considered one of the final steps in the collaborative learning process as it helps evaluate and edit the drafts, leading to the synthesis of information in the final products. All comments made by students within their own group, in both pen-and-paper and wiki modes, were collected and entered into NVivo 8.0 to make them ready for coding. While it was easy to just copy the comments on wiki pages in CMC groups and paste them to the NVivo windows, pen-and-paper comments had to be typed verbatim from the students' papers to NVivo.

Unlike the synchronous discussions, where an episode was taken as the unit of analysis, the asynchronous peer review coding was based on sentential meaning units. An entry could consist of several sentential comment units. A comment could be as short as just one word, like "Good!"; or as long as a compound and/or complex sentence, such as "In the paragraph about the Valentine day, it will be more interesting if Tuan make clear about how romantic and interesting Valentine day is, which I think there should be more information in this point." Comments were first classified in accordance with their general focus into the three broad themes, i.e. socioaffective, organisational, and sociocognitive, which were then recoded into emergent subcategories according to the focus and purpose of each comment (Figure 4.8 and Appendix V: Coding scheme for peer comments).

More attention was paid to the sociocognitive theme. Comments in this theme were further coded into global versus local areas, which were then classified into various types of comments, such as clarification, explanation, suggestion, request, evaluation, addition, deletion, and alteration (Liu & Sadler, 2003). Evaluation comments were also coded as complimentary or critical evaluations (Liou & Peng,

2009). This classification of types of comments helped to decide the revision-oriented nature versus the non-revision-oriented nature of comments.

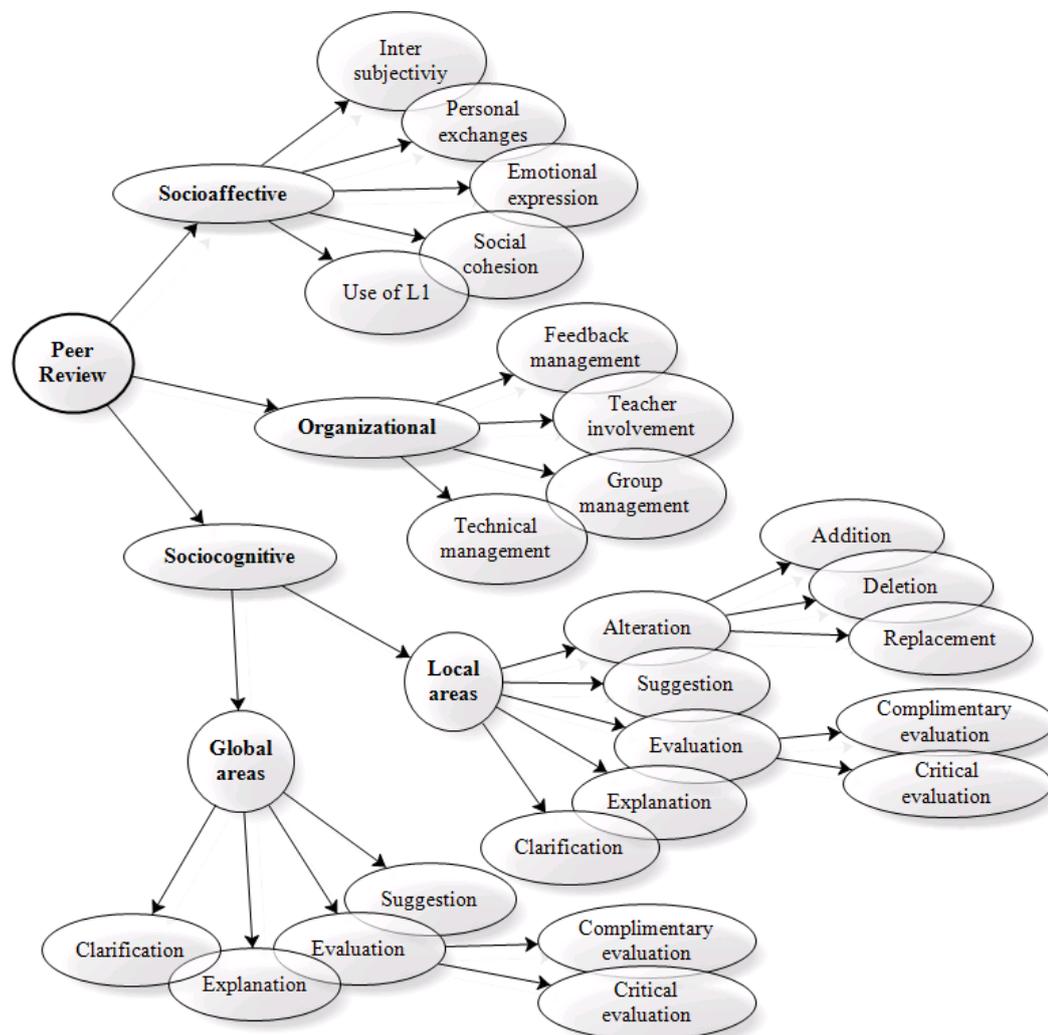


Figure 4.8 Coding matrix for the asynchronous peer reviews

Similar to research question one, the answer to this research question was also supported by qualitative data from the researcher's observation notes and diaries.

#### 4.4.4 Final collaborative products

The focus of this part is to answer the third research question: To what extent, and in what ways, do online exchange processes lead to improved English language achievement? The final collaborative writing task on comparison and contrast

between American and Vietnamese culture was analysed to answer this question. The purpose of this research question was to find out if collaborative learning via both synchronous and asynchronous CMC resulted in a better quality in the final collaborative products than the traditional modality.

The quantitative level of analysis focused on three linguistic features of the written texts: syntactic complexity, lexical density, and grammatical accuracy. Measures based on previous studies (Y. Li, 2000; Shang, 2007; Storch, 2005) were used to compare the differences of the groups' writing performance after completing the collaborative work. The process of analysing the three linguistics features is presented below. First, as for the syntactic complexity, the average total number of words and total number of sentences were computed. Of particular importance, the average number of words per sentence was calculated to measure the average sentence length. For the analysis of syntactic complexity, Wordlist, one of the text analysis programs in the integrated package of Wordsmith Tools (Scott, 1996), was used to search for the total number of words and sentences.

$$\text{Average sentence length} = \frac{\text{Total number of words}}{\text{Total number of sentences}}$$

Second, lexical complexity of the texts was assessed with two measures, namely lexical diversity, i.e. the number of different words, including both content and function words, divided by the total number of words; and lexical density, i.e. the number of lexical items excluding function words divided by the total number of words (Laufer & Nation, 1995). These two measures were done using Scott's Wordlist, which helps to analyze lexical features by means of type/token ratio statistics.

$$\text{Lexical diversity} = \frac{\text{Number of different content and function words}}{\text{Total number of tokens}}$$

$$\text{Lexical density} = \frac{\text{Number of different content words}}{\text{Total number of tokens}}$$

Third, the grammatical accuracy was measured in two ways (Y. Li, 2000), including the ratio of number of grammatical errors to the total number of sentences in a writing product; and the ratio of types of grammatical errors to the total number of sentences in the piece of writing. Grammatik, a computerized text analysis program embedded in Word Perfect, was used to identify the grammatical accuracy of the writing tasks. This program indicated both grammatical errors and improper usage in style.

$$\text{Ratio of errors/sentence} = \frac{\text{Number of grammatical errors}}{\text{Total number of sentences}}$$

$$\text{Ratio of error types/sentence} = \frac{\text{Number of types of grammatical errors}}{\text{Total number of sentences}}$$

In addition to the quantitative data analysis above, the 20 essays were separately marked by both the researcher and an EAP lecturer at Massey University. A 10-point evaluation scheme was developed for the scoring process. This evaluation scheme included three broad criteria, i.e. content (relevance of ideas, development of ideas, and level of complexity), organisation and structure (introduction, conclusion, grouping, use of transition words, coherence, cohesion and ordering of ideas and information), and use of language (vocabulary, grammar, style, etc.).

#### ***4.4.5 Students' perceptions and reflections***

Information from the post-project questionnaire and interview was used to answer the fourth research question: What are students' reflections on and perceptions of the application of CMC collaboration in the EFL classroom?

Responses to the 24 4-point Likert scale items from the post-project questionnaire were tallied and analysed with the support of SPSS 17. In order to determine whether the students' answers to an item were at a greater than chance level, the mean Likert score on each item for the 30 students was calculated by running a one-sample two-tailed *t*-test with the hypothesised mean of 2.5, as a neutral score of the 4-point scale, and the confidence interval of 95%. In addition, the 6 open-ended questions aimed to capture more ideas and/or expressions regarding the use of the modes of CMC in

collaborative learning. Topics emerging from the students' replies to the open-ended questions were categorised and analysed, as complements to answering the fourth research question.

These findings were then triangulated by the qualitative data from informal, semi-structured interviews with selected individual students in the CMC groups. The use of semi-structured interviews was suited for this research question relying mainly on students' opinions, feelings, and values. They did not only include specific, well-defined questions determined in advance, but also at the same time allowed for elaboration of responses. Students' attitudes, reactions, and reflections on the application of CMC to collaborative learning were collated and analyzed. Discussion for this research question was also supported by the researcher's observation notes and diaries.

#### ***4.4.6 Reliability and validity***

According to Bauer's (2000) classical content analysis and Lincoln and Guba's (1985) trustworthiness criteria, there are two reliability issues of concern to content and discourse analysts, namely the boundary of units within the sequence of materials and the coding of contents. Based on this, three types of reliability are identified: reproducibility, stability, and accuracy. Regarding the current study, there were three components that could have caused possible threat to the reliability of the data analyses, the synchronous discussion coding process, the asynchronous peer review coding process, and final collaborative results.

In order to check the inter- and intra-rater reliability of the synchronous discussion coding process, a PhD candidate was requested to help with the coding. Guidelines were formulated stating clearly what constitutes a turn, an episode, and definitions of the three collaborative themes as well as emerging subcategories. Before she actually conducted the coding process, the guidelines and instructions were introduced to her. A two-hour training session was held during which these guidelines were explained. As part of the instructions, the two coders worked together on a randomly selected transcript, as a sample, to identify the themes and the subcategories until they both felt comfortable with the process. After that, one transcript from each mode of discussion was randomly selected and coded separately by the two coders. They then

compared their results. They identified the themes and subcategories for 55 episodes with 87% agreement.

A similar procedure was applied for the asynchronous peer review coding process. Guidelines were formulated stating clearly what constitutes an entry, a sentential meaningful unit, and definitions of the three collaborative themes as well as emerging subcategories. These guidelines and instructions were introduced to the PhD candidate. Another one-hour training session was held to explain the guidelines. The two coders worked together, coding a sample peer review sheet until they both felt satisfied with the criteria. Then, all the entries from one group of each mode of peer review were randomly selected and coded independently by the two coders. The themes and subcategories from the two sets of coding attained 90% agreement.

Discussions between the two coders resolved all disagreements. The procedure was as follows. First, each coder explained his/her reasons for the code assigned based on the criteria. Second, if one of the coders was persuasive enough, an agreement was reached and the episode or the comment was recoded accordingly. Third, in cases where it was not easily agreed between the two coders, either the existing subcategories were modified to eliminate ambiguity or a new category was created. In both cases, the entire data was recoded accordingly.

As for the final collaborative products, all the 20 essays were marked independently by the researcher and an EAP lecturer at Massey University. In order to attain a significant level of objectivity, the Massey assessor was unaware of the groupings which were arranged by the researcher himself. The three criteria, (1) content and idea development, (2) organisation and structure, and (3) language use, were used by both raters. The essays were marked, following the 10-point evaluation scheme as popularly used in the Vietnamese educational system. The two sets of results were compared and matched. There were of course different grading between the two raters in some essays. It was the researcher's responsibility to consider and iron out the differences, with reference to the Massey EAP lecturer, in order to attain shared final results. A similar process of the conflict-solving method, as described above, was applied here.

The application of the analytical framework for the analysis helps establish validity. The fact that the research questions were investigated using multiple sources of data and levels of analysis strengthens the validity of the research. Results from the coding processes of the two stages, discussion and peer review, were triangulated by analysing the participants' reflections and perceptions during the interviews as well as the researcher's observations. Reflections and perceptions from the interviews and the questionnaires were studied for emergent themes related to the research questions. These themes were then compared to findings from the other methods of analysis used in the research.

#### ***4.4.7 Triangulation***

Triangulation, one of the trustworthiness criteria set out by Lincoln and Guba (1985), is defined by Denzin (1978, p. 291) as "the combination of methodologies in the study of the same phenomenon". Triangulation helps to minimise the risks regarding validity and reliability caused by an exclusive reliance on only one method of research. It develops creative ways of collecting thicker and richer data. It also results in the synthesis of theories and irons out contradictions. In other words, research results attain a satisfactory degree of confidence only when different research methods are employed.

According to Denzin (1978), triangulation can be of two approaches, i.e. within-methods triangulation and between-methods triangulation. While within-methods triangulation refers to the application of a range of either quantitative or qualitative techniques, between-methods triangulation engages the implementation of both quantitative and qualitative procedures. Whereas Denzin criticised within-methods triangulation with restricted values, he advocated the application of between-methods triangulation because the use of multiple methods helps reduce any bias and partiality inherent from any single method of data collection and analysis. In addition, it would help create a convergent result upon the truth about social phenomena. It is the latter approach, i.e. between-methods, that the current study followed throughout the research.

The current study, as designed, principally focused on data triangulation, considered as one of the four types of triangulation outlined by Denzin (1978): data

triangulation, investigator triangulation, theory triangulation, and methodological triangulation. For each of the research questions, the statistical information was triangulated with the qualitative details in order to check the consistency of results. For example, objective data from the discussion transcripts were first counted and analysed, as for the first research question. The factual data were also coded qualitatively. These tangible text-based data were then triangulated with information from the questionnaires, interviews, and observations. All of these were considered as more subjective by nature.

Likewise, a similar pattern of triangulation was applied to the second research question regarding peer comments. Final collaborative products, for the third research question, were also examined at two levels, i.e. quantitative and qualitative. Regarding the last research question, the students' personal and subjective reflections and perceptions were first analysed qualitatively, and these results were then triangulated with evidence from written data of the collaborative process. In sum, any conclusion made during the results analysis was based on a combination of various data analyses and interpretations.

#### **4.5 Summary**

The ultimate aim of the current research was to examine and investigate the potential effectiveness of CMC technologies in collaborative foreign language learning in a Vietnamese tertiary context along with the students' perceptions. The four research questions were investigated by multiple levels of data analysis, using mixed methods research, as discussed previously (Appendix W: Summary of methodology). This chapter also includes a detailed description of the sociocultural background of the participants, taken from the pre-project questionnaire. This included demographic data, English language proficiency, experience of collaborative learning and computers, and their initial perceptions of the use of technology in language learning. Part of the methodology presented a stringent procedure to be followed to attain permission from the Human Ethics Committee of Massey University. Major ethical principles consisted of informed consent, confidentiality and anonymity issues, equal opportunity issues, and permission to undertake research overseas. In addition, a detailed discussion of data collection and analysis was also presented. The three

levels of group interaction, suggested by Mangenot and Nissen (2006), were used as the conceptual framework for analysis, socioaffective, organisational, and sociocognitive. Finally, techniques used to establish the inter- and intra-reliability as well as validity of the study were presented.

The next four chapters present the results from the data analysis procedure as discussed in this methodology chapter. The three levels of interpretation, including interpretation close to the data, then close to the research questions, and then beyond the research questions (Herring, 2004), are applied throughout the discussion. The four results analysis chapters are organised according to the focus of the guiding research questions. Both quantitative and qualitative findings are presented and analysed to answer the four research questions on (1) the nature and effectiveness of synchronous computer-mediated discussion process as compared to FTF exchanges, (2) the nature and effectiveness of asynchronous computer-mediated peer review as compared with pen-and-paper peer review, (3) the improvement in English language achievement as a result of the online collaborative learning as compared with the traditional group work practices, and (4) the students' reflections on and perceptions of the application of CMC collaboration to the EFL classroom.

## CHAPTER FIVE: SYNCHRONOUS DISCUSSION

### 5.1 Overview

The account of the research results will begin with the synchronous discussion which began the collaborative learning project. The discussion process of the 20 groups from both classes is analysed from two main stages, namely participation and interaction, identified by White (2003) as the two significant issues in online language learning. While the discussion of the quantitative contribution aims to explore the participation level of individuals within groups and between groups across the two different modes, the examination of the qualitative exchanges aims to delve into the nature of interaction. In other words, this section focuses on negotiation patterns and the nature of ‘talk’ in synchronous CMC. Overall, the purpose is to answer the first research question regarding the nature and effectiveness of SCMC discussion as compared with traditional face-to-face discussion in the collaborative learning process.

### 5.2 Participation

Data from the transcripts of the discussion process revealed a total of 20,352 running words for the control class and 8,963 running words for the CMC class. A discussion with the fewest number of words (477) was produced by group 0209 in the CMC class while control group 0101 made the most number of words in their discussion (3,555). Although the suggested time for discussion was approximately half a hour, the time length ranged from as short as around 15 minutes for one of the control groups (0107) to as long as 1 hour 15 minutes for group 0201 in the CMC class.

Table 5.1 presents a summary of the two modes of discussion. The CMC class spent twice as long as did the control class discussing the required task, but produced only around half the number of words as compared with the control class. This can be explained by the learners’ limited computer and typing skills as discussed previously

and that this was their first time of applying SCMC in the academic environment. While the number of turns was roughly equal between the two classes, the number of words per turns generated by the control class was three times as many as those by CMC class (18.50 versus 6.54).

Table 5.1 Face-to-face and online discussions: *T*-test analysis

	Control Class (n=10)		CMC Class (n=10)		<i>t</i>	<i>p</i> *
	Mean	S. D.	Mean	S. D.		
Discussion time	24:23.60	09:37.70	59:04.80	13:21.67	-6.66	.000
Total words	2035.20	776.11	896.30	308.21	4.31	.001
Total turns	121.00	58.05	143.20	53.71	-.89	.386
Words per turns	18.50	5.88	6.54	1.12	6.32	.000
Gini coefficient	.24	.03	.16	.09	2.42	.033

\*Significant at  $p < .05$

The most notable feature of all were the Gini coefficients<sup>1</sup> of participation inequality. The *t*-test analysis showed a statistically significant difference at  $p < .05$  between the two classes, signifying that member participation in the CMC groups was more equal and balanced than that of the control groups. Details of the Gini coefficients are presented in Figure 5.1, showing that most of the control groups had a high figure of .20 or above. Conversely, more equal participation is clearly presented in the CMC groups, most of which had a figure of below .20, except for one with .23. In other words, the Gini coefficients indicated that the CMC group discussions as a whole (Mean: .16, SD: .09) were one and half times as equal as the control group discussions (Mean: .24, SD: .03).

<sup>1</sup> The Gini coefficient presents values from 0 to 1, in which the smaller Gini coefficients correspond to greater equality. See Appendix S for more detail.

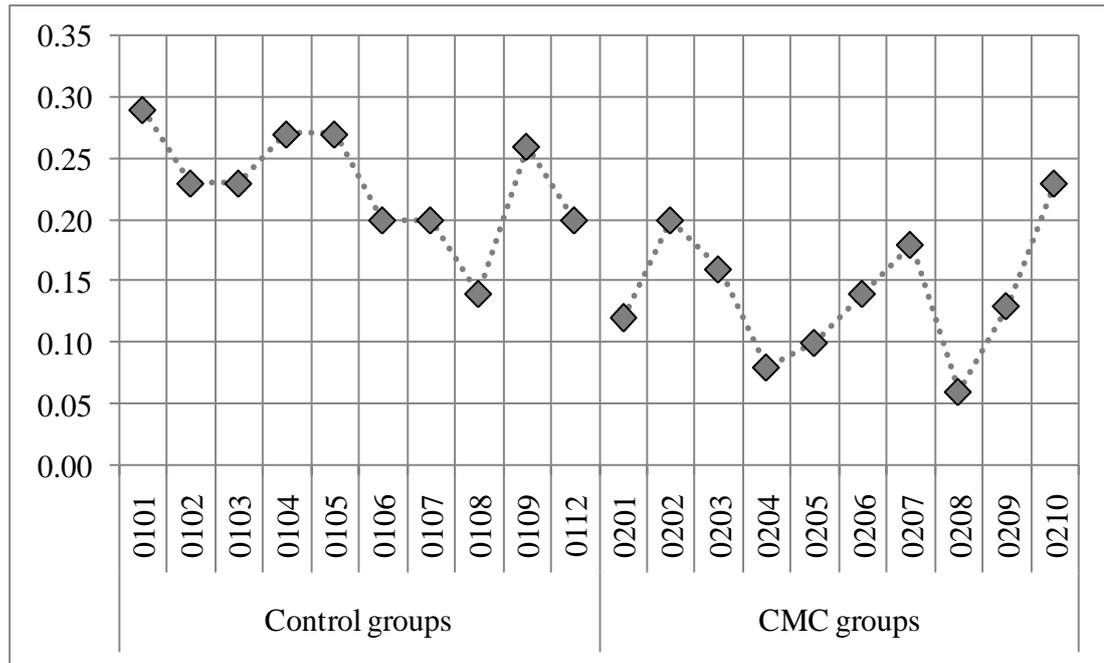


Figure 5.1 Gini coefficients by group

Detailed information about individual participation of both FTF and CMC modes is presented in the two following tables, and discussed in the next section. Table 5.2 reports the number and percentage of turns and words as well as the number of words per turn contributed to the discussion by the students in the control, FTF groups. Also presented in the table are the discussion length and the Gini coefficients of each group. The same information for the CMC groups is presented in Table 5.3.

The unequal contribution among individuals in each FTF group is high and varied across the board. Discussion time ranged from approximately 15 minutes for group 0107, which also produced the least number of words (under 1,000), to nearly 50 minutes for group 0101, whose total words were the highest at 3,555, and whose Gini coefficient was also the highest (.29). The leader of the latter group and also the class monitor, N. Phuong, took up 60% of the group talk, while the two other members, Trang and Quy contributed only 24% and 16% respectively, making a difference of up to 44% between the most and the least participating members. The least contributing member across the control class, however, was Uyen in group 0109, who contributed only 12% of her group talk while the group leader, Kieu, talked up 51% of the discussion time.

Table 5.2 Individual participation in the discussion process: Control groups

Group	Member <sup>a</sup>	Length	Turns		Words		Gini	Average words/turn
			No.	%	No.	%		
0101	Quy		30	17	568	16		18.9
	Trang		59	34	863	24		14.6
	N. Phuong* <sup>b</sup>		83	48	2124	60		25.6
	Total	46'49"	172		3555		.29	20.7
0102	Anh		43	19	353	18		8.2
	P. Thanh		84	38	589	30		7.0
	Chau*		96	43	1007	52		10.5
	Total	21'47"	223		1949		.23	8.7
0103	Huong		15	28	327	21		21.8
	Duong		12	22	342	23		28.5
	Nhuan*		27	50	836	56		31.0
	Total	18'52"	54		1505		.23	27.9
0104	Nga		33	24	396	14		12.0
	Cuc*		49	35	885	32		18.1
	Hoa		58	41	1476	54		25.4
	Total	27'49"	140		2757		.27	19.7
0105	Thao		48	26	318	16		6.6
	Trang		59	32	531	27		9.0
	Thuy*		78	42	1099	57		14.1
	Total	27'04"	185		1948		.27	10.5
0106	Quynh		21	27	261	18		12.4
	Toan		25	32	479	33		19.2
	Duyen*		31	40	699	49		22.5
	Total	19'05"	77		1439		.20	18.7
0107	Van		16	28	182	19		11.4
	Quyen		22	39	303	31		13.8
	Ngan*		19	33	472	50		24.8
	Total	12'48"	57		957		.20	16.8
0108	Tram*		18	23	339	24		18.8
	Thom		27	35	448	32		16.6
	Th. Anh		32	42	616	44		19.3
	Total	15'07"	77		1403		.14	18.2
0109	Uyen		21	17	269	12		12.8
	T. Anh		49	40	829	37		16.9
	Kieu*		54	44	1120	51		20.7
	Total	27'21"	124		2218		.26	17.9
0112	Hieu		34	34	625	23		18.4
	Loan		34	34	631	24		18.6
	Thanh*		37	37	1365	53		36.9
	Total	27'34"	101		2621		.20	26.0

<sup>a</sup> All names are pseudonyms.

<sup>b</sup> Members marked \* were group leaders.

Table 5.3 Individual participation in the discussion process: CMC groups

Group	Member <sup>a</sup>	Length	Turns		Words		Gini	Average words/turn
			No.	%	No.	%		
0201	T. Huong		53	32	263	24		5.0
	Suong		47	28	273	25		5.8
	Hang* <sup>b</sup>		67	40	450	41		6.7
	Total	76'30"	167		1087		.12	6.5
0202	Tuan		27	26	123	19		4.6
	H. Phuong*		26	25	208	32		8.0
	Tam		50	49	318	49		6.4
	Total	52'44"	103		649		.20	6.3
0203	Binh*		26	26	165	23		6.3
	Yen		25	25	215	30		8.6
	Ngan		48	49	337	47		7.1
	Total	66'55"	99		718		.16	7.3
0204	Loc		38	26	249	27		6.6
	Nga*		59	40	307	34		5.2
	Thi		52	35	353	39		6.8
	Total	77'16"	149		909		.08	6.1
0205	Hoa		64	35	278	26		4.3
	Viet		64	35	348	32		5.4
	Hanh*		61	33	461	42		7.6
	Total	58'27"	185		1087		.10	5.9
0206	Thoa		72	29	374	24		5.2
	Anh		78	32	483	31		6.2
	Nguyen*		97	39	721	45		7.4
	Total	71'43"	247		1578		.14	6.4
0207	Thuy		40	29	183	23		4.6
	Dao		46	33	205	26		4.5
	Nghia*		52	38	417	51		8.0
	Total	62'02"	138		805		.18	5.8
0208	Nhung		24	30	198	28		8.3
	Thang*		25	31	243	35		9.7
	V. Hang		31	39	262	37		8.5
	Total	50'34"	80		703		.06	8.8
0209	Huong		33	32	122	26		3.7
	Dzung*		30	29	134	28		4.5
	Thao		39	38	221	46		5.7
	Total	29'27"	102		477		.13	4.7
0210	Chuyen		35	27	190	20		5.4
	M. Hang*		43	33	237	25		5.5
	Phuong		52	40	544	55		10.5
	Total	55'10"	130		950		.23	7.1

<sup>a</sup> All names are pseudonyms.

<sup>b</sup> Members marked \* were group leaders.

It took the CMC groups from around 30 minutes (group 0209) to 77 minutes (group 0204) to complete their discussions (Table 5.3). The quantity of discussion ranged from under 500 words (group 0209) to more than 1,500 words (group 0206), significantly fewer than those produced by the control groups. The largest discrepancy in terms of participation was 37% between Chuyen (20%) and Phuong (57%) in group 0210, which also had the Gini coefficient of .23, the highest figure compared with the other CMC groups. It was later found out that Phuong, the most contributing member of this group, was the best student of the course of 370 students with the highest accumulated GPA of 8.75 and the most proficient computer user of the class, who understandably took control of this group chat. On the other hand, the most even participation was seen in group 0208 with the Gini coefficient of only .06, in which the difference was 9% between the most active (37%) and the least contributing (28%) members. This group's turn-by-turn pattern of discussion, which was like that of many other CMC groups, is shown in this episode.<sup>1</sup> (Excerpt 5.1):

Excerpt 5.1 (0208):

- 38 V. Hang: Thang.why dont you say anything?  
39 Nhung: Ok However, how to get information or materials  
40 V. Hang: no no .you are in hurry  
41 Thang: i seach information on the Internet .that is tremendous souce of information.ok  
42 V. Hang: we are talking about the outline  
43 Nhung: Ok  
44 Thang: yes but no hurry.we have lots time left  
45 V. Hang: Thang. have you got any ideas about the main part?  
46 Nhung: thang so do I can?  
47 Thang: about this ,in my view,we should focus on three main parts

In terms of the number of words per turn in the control groups, it is evident from Table 5.2 that the more dominant a member was in terms of occupying the discourse space, the longer turns he/she made. Thanh in control group 0112, for example, who contributed 53% of her group talk, had an average of as many as 37 words per turn,

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<sup>1</sup> All excerpts are cited verbatim.

while the ratio of 18.5 words/turn was shared between the other two members in this group. Below is an example of Thanh's turns (Excerpt 5.2).

Excerpt 5.2 (0112):

94 Thanh: Yes, the youth is really different. In Vietnam, parents bring up children until they are really mature. Only after 18 years old, when they have to learn far from family, they still get support from their parents to pay for accommodation and other things. But some young people are able to independent; they also do part time jobs, for example tutor or selling coffee. But they only get a small money, it's not enough for them to do everything by themselves. They need the support from their parents. The comparative to success in life of American youth is higher than Vietnam. Besides, this tendency of modern American culture tends to value youth rather than age. It's easy for them to prepare for life, they are able to get acquainted with the new environment and adapt themselves well. Right? (138 words)

The second longest mean number of words/turn (31) was produced by Nhuan, whose contribution was 56% of the control group 0103 discussion. In contrast, 0108 (the least unequal participating one) had the quite moderate amount of around 18 words/turn shared among all three members.

Conversely, the ratio of words per turn was small in CMC group chats, with the average of 6.5. The longest online rate (10.5 words/turn) was again made by Phuong, the dominant member of 0210. It is realised that the pattern of *the more dominant a member was, the longer turn he/she made* mentioned above for the control groups can hardly apply to the CMC groups. In other words, dominating members, while they could make many turns, were not able to make long turns on Yahoo! chat. Instead, the average pace of chat was shared rather equally among group members due to turn-taking competition. Nhung, Thang, and V. Hang of group 0208 (the most even participation group), for example, typed on average 8.3, 9.7, and 8.5 words respectively for each turn. Similarly, but at a much lower rate, 3.7, 4.5, and 4.7 were the average number of words per turn made by Huong, Dzung, and Thao correspondingly in group 0209 (the shortest discussion time group). Likewise, the most productive group (1,578 words) 0206 had the mean rate of 6.4 words/turn, roughly equal among the three members.

Another topic of interests is the role of group leaders. The original purpose of electing group leaders, selected by the group members themselves, was to manage group learning and to report on the group work to the teacher. The criteria for the group leader election, from the researcher's observation, included the higher language proficiency in terms of the accumulated GPA and the willingness to take the position. This leadership role affected the discussion pattern, clearly reflected in the control groups, in which eight out of the 10 group leaders understandably took over their respective group discussion in terms of active and dominant participation. Only Cuc, 0104 leader and Tram in 0108 did not seem to take control of their group talk by following such a participation pattern. It is interesting to note that the latter (group 0108) had the smallest Gini coefficient (.14), indicating the highest level of equal participation of any FTF group. In contrast, there were also 10 leaders elected for the 10 groups in the CMC class. Nevertheless, only four of them took the leading role in their group chat, in which the most dominant leader was Nghia (group 0207), who covered 51% of her group talk. Five other group leaders came second in terms of the level of participation, while one leader (Binh, 0203) made the minimal contribution of 23% compared with Yen (30%) and Ngan (47%). It is worthy of note to observe that the most controlling member across the CMC class as a whole, Phuong with 57% contribution within 0210 was not a group leader. This again emphasises the democratising nature of SCMC as it limits the dominance of group leaders and fosters a more equal participation pattern.

### **5.3 Interaction**

This second level of analysis of the discussion involved the comprehensive investigation of all 20 transcripts in order to divide them into episodes which were analysed to reveal the purpose, focus, and outcomes of the interactions. An episode could be as short as a single turn, or as long as several turns, provided that these turns focused on a certain topic. A turn in the FTF discussion was defined as a line of exchange, either finished by the interlocutor him/herself or interrupted by other group members. Similarly, a turn in SCMC was identified as a line of conversation sent by a member by pressing the return key or by clicking the send button on the Yahoo! chat window. Furthermore, the term episode can occasionally be replaced with the word thread (as discussed in the data analysis section of the methodology

chapter) to indicate the non-sequential feature of the SCMC discussions. Each episode was first coded, using the qualitative analysis software NVivo 8.0, into three broad themes (socioaffective, organisational, and sociocognitive) according to its focus and purpose. While sociocognitive episodes are evaluated as important since they contribute to the successfulness of group exchanges in terms of the selection of essay topics and the development of ideas, for example, organisational and socioaffective instances have their own significant roles for group management and social cohesion. The subcategories of the episodes emerging from the analysis were later categorised, based on which differences between the modes of discussion are discussed in detail.

Both control and CMC classes had more sociocognitive themes, with 86.9% and 62.3% respectively, than organisational and socioaffective topics, as illustrated in Figure 5.2. This reveals the overall focus on the assigned task, rather than just on social and technical issues. While the focus on the socioaffective matters was roughly equal between the two classes, the CMC groups devoted five times as many episodes as did the control groups to organisational issues (30.7% versus 6.4%). This demonstrates the significant impact of different mediators on the nature and quality of discussions.

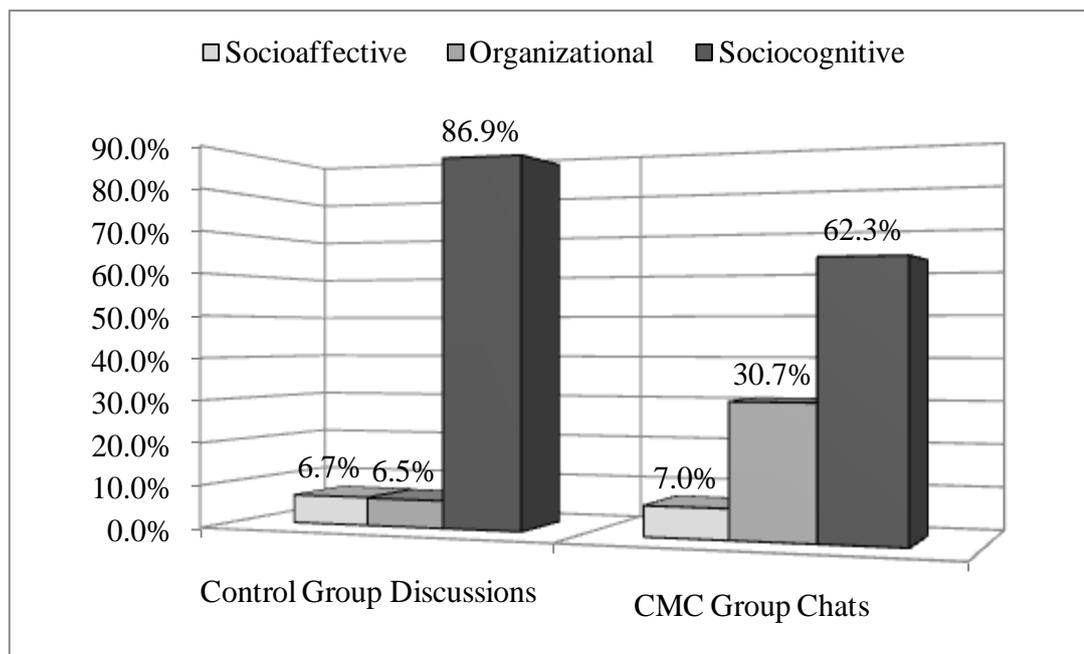


Figure 5.2 Episodes coded into themes

While all of the control groups spent most of the discussion time on sociocognitive themes (Table 5.4), group 0109 stands out with 98.8% of their discussion staying extremely focused on the required task. Other control groups, such as 0105 and 0108, also paid high attention with 97.6% and 94.2% respectively of their discussion categorised as sociocognitive. Later analysis of these groups' transcripts found that they had made some preparation well before the actual recorded discussion took place, which certainly affected the nature and the focus of these discussions.

Table 5.4 Total distribution of episodes by theme and by group

Group	Socioaffective episodes	Organizational episodes	Sociocognitive episodes
0101	13.0%	4.4%	82.6%
0102	4.2%	10.1%	85.7%
0103	21.6%	8.4%	70.0%
0104	1.9%	14.3%	83.8%
0105	1.5%	1.0%	97.6%
0106	3.0%	14.5%	82.5%
0107	12.7%	5.5%	81.8%
0108	.3%	5.5%	94.2%
0109	.4%	.8%	98.8%
0112	8.9%	3.0%	88.2%
0201	2.6%	23.6%	73.8%
0202	4.4%	34.4%	61.2%
0203	7.8%	31.3%	60.9%
0204	10.3%	26.8%	62.9%
0205	7.1%	23.2%	69.7%
0206	7.5%	38.4%	54.1%
0207	12.1%	36.2%	51.7%
0208	11.2%	35.1%	53.7%
0209	5.3%	36.1%	58.6%
0210	3.0%	23.2%	73.8%

Among the control groups, the lowest sociocognitive focus was found in 0103, with 70%, but this can also be considered high as compared to those from the CMC groups. It is also this group, 0103, who had the highest percentage of socioaffective episodes among the control groups, 21.6%. Group 0106, on the other hand, spent a considerable amount of the discussion period on group management, which explains 14.5% result for organisational episodes, the highest across the control class, though

group 0104 was close with 14.3%. More detailed discussion of these subcategories is presented in the next section.

The CMC groups devoted on average 62.7% of their discussions to sociocognitive exchanges, ranging from 51.7% for group 0207 to 73.8% in both 0201 and 0210. These latter two groups, on the other hand, had the least prevalent instances of socioaffective and organisational themes, with around 3.0% and 23.5% respectively. The organisational theme accounted for 38.4% of all episodes exchanged by group 0206, who took the leading rank in this theme. Coming right after this group were 0207, 0209, 0208, and 0202 who had around 35% of their discussions related to organisational issues, most of which was spent negotiating ways to discuss, and on technical management. Similar to the control groups, topics with regard to the socioaffective theme were rather scarce in the online exchanges, as compared to the two other themes.

### 5.3.1 Socioaffective episodes

The socioaffective episodes were further coded according to subcategories emerging from analysis (Figure 5.3) rather than using any pre-existing coding schemes (e.g., Curtis & Lawson, 2001; Garrison, Anderson, & Archer, 2000).

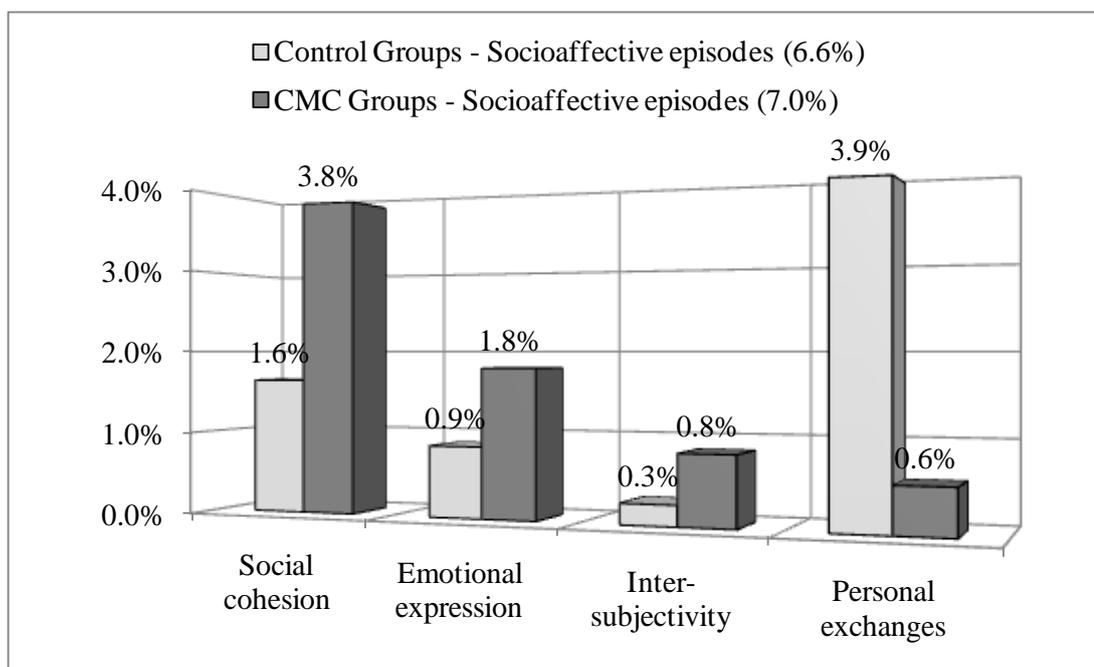


Figure 5.3 Socioaffective episodes coded into emergent subcategories

Figure 5.3 above outlines the four subcategories related to socioaffective issues which for the control groups amounted to 6.6% of the total and for the CMC groups, 7.0%. More than half of the CMC groups' socioaffective episodes were categorised as social cohesion (3.8%), defined as episodes of greeting, introducing, closing, and farewell. It is noted that CMC group 0207 spent all of their socioaffective instances on this subcategory (Table 5.5).

Table 5.5 Socioaffective episodes by subcategory and by group

Group	Social cohesion	Emotional expression	Inter-subjectivity	Personal exchanges	Total
0101	1.1%	1.8%	.6%	9.5%	13.0%
0102	3.3%	1.0%	.0%	.0%	4.2%
0103	2.4%	.0%	.0%	19.2%	21.6%
0104	.2%	1.7%	.0%	.0%	1.9%
0105	1.4%	.1%	.0%	.0%	1.5%
0106	3.0%	.0%	.0%	.0%	3.0%
0107	7.4%	.0%	.0%	5.4%	12.7%
0108	.3%	.0%	.0%	.0%	.3%
0109	.4%	.0%	.0%	.0%	.4%
0112	1.3%	1.7%	1.2%	4.8%	8.9%
0201	2.6%	.0%	.0%	.0%	2.6%
0202	3.6%	.0%	.8%	.0%	4.4%
0203	2.4%	.0%	3.5%	1.9%	7.8%
0204	2.2%	7.9%	.0%	.0%	10.3%
0205	7.1%	.0%	.0%	.0%	7.1%
0206	2.0%	4.1%	1.0%	.4%	7.5%
0207	12.1%	.0%	.0%	.0%	12.1%
0208	5.0%	1.1%	1.6%	3.5%	11.2%
0209	5.3%	.0%	.0%	.0%	5.3%
0210	.7%	2.3%	.0%	.0%	3.0%

Below (Excerpt 5.3) is an example showing how this group started their discussion, thereby illustrating member communicative behaviours that led to the formation of an online community:

Excerpt 5.3 (0207):

1 Nghia: hi hi  
2 Thuy: hiii

- 
- 3 Nghia: how are you today?  
 4 Dao: my group's color is pink  
 5 Thuy: fine  
 6 Thuy: and u  
 ...  
 16 Nghia: no each member has her own colour  
 17 Dao: isn't ?  
 18 Thuy: now start our discuss  
 ...  
 19 Nghia: let's start  
 20 Dao: ok  
 21 Dao: hi  
 22 Dao: i'm dao

Only Nghia and Thuy greeted each other at the beginning, while Dao's comment referred to the teacher's suggestion that each member select a text colour in order to help group members easily read texts on the chat window. However, Dao had misunderstood this and Nghia explained to Dao later in turn 16 that each member should have a different colour, not one colour for the whole group. She then reiterated Thuy's suggestion that they get ready for the group discussion at turn 19. Dao, after having the 'colour' issue clarified, assented by greeting and introducing herself.

It was however both Dao and Nghia who commented in the interviews that they rarely used these social phatics in their previous FTF discussions mainly because they knew each other so well that the greetings as above seemed quite unnatural and unnecessary. In fact, greeting someone with 'how are you today?' sounds odd in Vietnamese culture, especially to those who know each other well. Rather, they go directly to the task discussion after a smile and/or a head nod as the Vietnamese common greeting of formality. Social and cultural mediators, specifically the synchronous chat in this case, did modify socioaffective behaviours through the use of language.

The CMC groups also had episodes of other subcategories under the socioaffective theme, namely emotional expressions (which are defined as episodes including humour, self-disclosure, and the use of emoticons), intersubjectivity (episodes concerning encouragement, personal requests, and evaluation), and personal exchanges (episodes including asking for and responding to ideas not related to the task). The two students Loc and Thi, for example, in group 0204 (with the highest

proportion of emotional expression at 7.9%) expressed their negative personal feelings after the Internet suddenly broke down and the discussion had to be restarted when the Internet resumed (Excerpt 5.4).

Excerpt 5.4 (0204):

51 Loc: Hi again. how are y?  
52 Thi: Tired  
53 Nga: not fine  
54 Nga: U?  
55 Thi: and hungry  
56 Loc: i'am so  
57 Thi: try again?

It was Nga, the leader of this group, who complained in the after-chat interview what she hated most was when the Internet broke down, making her feel very frustrated and somewhat demotivated. Obviously, this reflects the causal relationship between emotional expression and technical management instances, both of which, regardless of whether they are positive or negative, help co-construct the online collaborative learning community.

Excerpt 5.5 below demonstrates an instance in which group members encouraged each other toward the topic selection of the essay, through which they developed a shared orientation to the collaborative task, i.e. they together tried to find something new for their topic. In other words, they established intersubjectivity, a by-product of collaborative communication (Darhower, 2002), as part of the Vygotskian view of cognitive development.

Excerpt 5.5 (0203):

113 Yen: yes try up, binh, hehe. pop is very popular on the world  
114 Ngan: i think we 'll try to find something new  
115 Yen: i think that u'll like it  
116 Ngan: yup  
117 Binh: yeah  
118 Binh: google search!

As for the FTF mode, even though personal exchanges accounted for more than half of the socioaffective theme in all these control groups, only four groups had this

subcategory (see Table 5.5). Group 0103, however, stands out with 19.2% of their socioaffective theme being on personal exchanges. This group had three off-task episodes, asking and answering about general ideas, away from the task. Excerpt 5.6 is an example of these:

Excerpt 5.6 (0103):

- 45 Nhuan: What will you like when you get older? Do you want to live with your children or live on your own?
- 46 Duong: Yes of course, I want to live with my children when I get older because I want to wait the children after they finish their work...I want...And especially when I get older my children can look after my, me better.
- 47 Nhuan: I think so, and when you get older, do you want to live with your parents? Your children?
- 48 Duong: For me, especially, I want to live with my parents because my parents work hard to bring up me and my sister so when I get older, I want to spend a lot of time to look after them.

Nhuan started this small talk, following their discussion about American and Vietnamese family life, asking Duong if she wanted to live with her children or on her own when she got older. It is of course possible to argue that these discussions may be not completely off-task. Nevertheless, as far as the task is concerned, given that it required them to find out facts and figures related to the topic selection and idea development, examples of the small talk given above are coded as off-task, or personal exchanges.

In brief, episodes in the socioaffective theme were coded into four major subcategories that helped to build up the collaborative community of learning, each of which has been analysed in detail above. The CMC groups had more episodes coded in three subcategories, namely emotional expression, intersubjectivity, and especially social cohesion, while the FTF group discussions produced more episodes categorised as personal exchanges than the online discussions. Above all, the most important finding was that while this social enhancement theme usually occurred at the beginning and the end of the discussion, functioning mainly as greeting and farewell in the control groups, it was scattered throughout the exchanges in the CMC groups with many other functions rather than just opening and closing the discussions.

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### 5.3.2 Organisational episodes

Similar to the socioaffective theme, the organisational episodes of both the control groups (6.4%) and the CMC groups (30.7%) were further coded according to their emerging subcategories, illustrated in Figure 5.4.

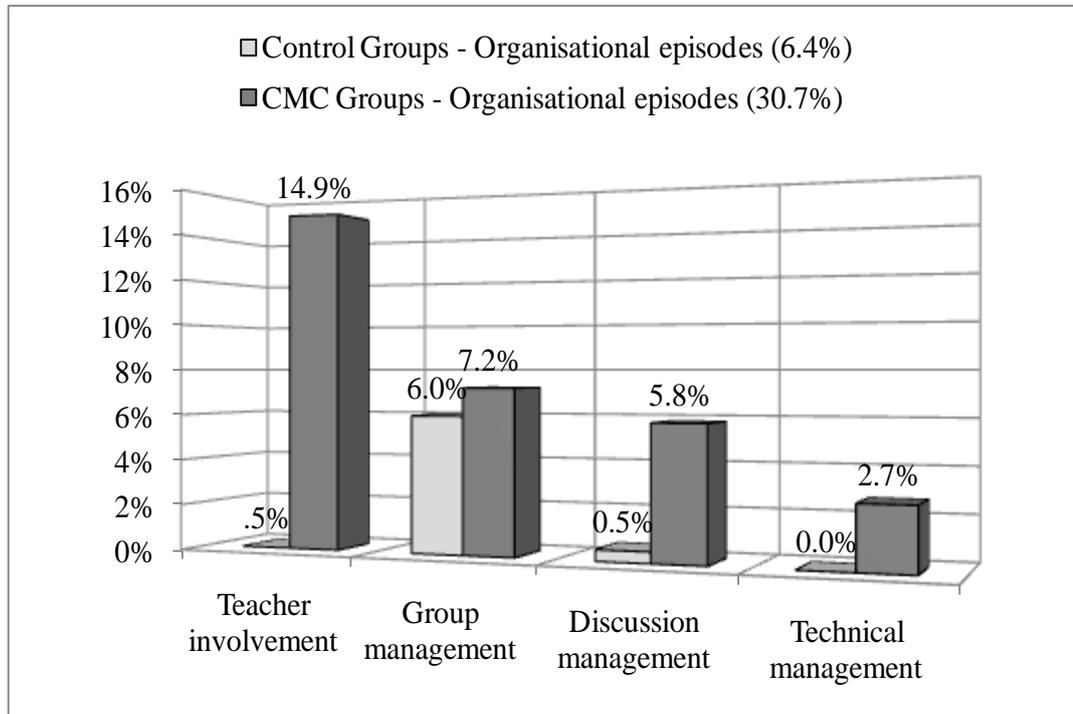


Figure 5.4 Organisational episodes coded into emergent subcategories

Technology-related episodes concerned the functionality and use of the mediator, Yahoo! chat in this case. Clearly, there was no instance of technical management in the control groups, who discussed face-to-face, using either a cassette player or a mobile phone to record their work. By contrast, this technological issue seemed to be more or less unavoidable in online chat, thereby resulting in some of both the socioaffective expressions presented in the previous section and the technical management episodes demonstrated as follows. The 2.7% of episodes devoted to technical management in the CMC groups were mainly requests to other members and/or the teacher for help and support.

Table 5.6 Organisational episodes by subcategory and by group

Group	Teacher involvement	Group management	Discussion management	Technical management	Total
0101	.0%	3.4%	1.0%	.0%	4.4%
0102	.0%	8.7%	1.4%	.0%	10.1%
0103	.0%	8.4%	.0%	.0%	8.4%
0104	.0%	14.3%	.0%	.0%	14.3%
0105	.0%	1.0%	.0%	.0%	1.0%
0106	.0%	14.5%	.0%	.0%	14.5%
0107	.0%	5.5%	.0%	.0%	5.5%
0108	.0%	5.5%	.0%	.0%	5.5%
0109	.0%	.8%	.0%	.0%	0.8%
0112	.0%	1.6%	1.4%	.0%	3.0%
0201	5.8%	13.2%	2.7%	1.9%	23.6%
0202	31.7%	2.1%	.6%	.0%	34.4%
0203	22.2%	0.0%	7.9%	1.1%	31.3%
0204	15.9%	2.4%	5.4%	2.9%	26.8%
0205	7.7%	7.7%	5.3%	2.5%	23.2%
0206	14.2%	5.9%	11.3%	7.1%	38.4%
0207	16.9%	5.5%	10.7%	3.2%	36.2%
0208	13.9%	16.3%	5.0%	.0%	35.1%
0209	8.4%	25.3%	.0%	2.5%	36.1%
0210	12.1%	4.4%	3.7%	3.1%	23.2%

Group 0206, for instance, who, with 38.4%, had the highest percentage of organisational episodes, spent 7.1% of their ‘talk’ on various technological problems (see Table 5.6 above). The thread below (Excerpt 5.7) shows the moment when Thoa and Nguyen talked about how to add the other member, Anh’s nickname, to their chat window:

Excerpt 5.7 (0206):

9 Thoa: do you add anh's nick  
10 Nguyen: what the matter with it?  
11 Nguyen: ok i've add her nick  
...  
15 Nguyen: it's dongho\_baothuc96  
16 Nguyen: i've added her nick?  
17 Nguyen: i think that  
18 Thoa: i can't add

- 19 Nguyen: why?  
20 Nguyen: do u make mistake?  
21 Nguyen: try again  
...

In addition, 0206 also had the highest percentage of discussion management, defined as those episodes including concern about the discussion time, negotiating ways to discuss, and reverting to the discussion route after being distracted. For example, Anh in group 0206 continuously reminded the others to pay attention to the allowed time throughout the discussion from as early as turn 52 to turn 245 (Excerpt 5.8) though this group did not finish until turn 336. An explanation for this time-related worry might be that online chat was new for Anh, not being good at computers, in an academic environment. While she was still active in contribution, ranking second in terms of levels of participation, the novel and challenging mode of communication made her feel pushed psychologically, being afraid that her group would not be able to complete the task by the designated time requirement.

Excerpt 5.8 (0206)

- 52 Anh: chat within 30'  
...  
91 Anh: quickly  
...  
111 Anh: we have only 30 minute  
...  
141 Anh: remember that we have only 30'  
...  
150 Anh: hurry up!!!  
...  
245 Anh: we haven't not a lot of time

While it was hard to find any instance involving the negotiation of how to discuss in the control groups, episodes of this type were dispersed throughout the CMC groups. An episode from group 0203 (Excerpt 5.9) exemplifies this type of negotiation. While Binh and Ngan agreed on the way of discussion, Yen seemed to prefer a free style of chatting, suggesting the others could just talk about whatever they like. She had to later agree with the others to talk about the chosen topic after Ngan explained about the task.

## Excerpt 5.9 (0203)

- 284 Binh: just talk about the organization 1<sup>st</sup>  
285 Binh: the content later  
286 Ngan: yup  
287 Ngan: thats what i mean  
288 Yen: we can say anything we like,  
289 Yen: pls dont focus on content  
290 Ngan: but we have to write  
291 Ngan: no  
292 Ngan: we have to focus on content if we want to have a good essay  
293 Yen: ok, we can chat to topic we choose. plsw say sth about it

Similarly, instances of negotiation occurred when a group member suggested others bring their attention to bear on the discussion route. For example (Excerpt 5.10), M. Hang (0210), as the group leader, wanted the other group members to focus back on the essay topic by interrupting the discussion chain about the idea of ‘flexibility’ initiated by Phuong. Phuong was surprised when M. Hang said that they had gone far away from the topic because, she thought, they were still discussing their topic. However, Phuong also seemed to justify M. Hang’s suggestion by asking her to make it clearer.

## Excerpt 5.10 (0210):

- 90 M. Hang: do u find that we've gone far away with ur topic?  
91 Phuong: what?  
92 M. Hang: i think we should write abt the way ppl interact w. other  
93 Phuong: we are discussing our topic  
94 M. Hang: for ex,with family,friends...  
95 M. Hang: and compare w. vnese  
96 Phuong: make it clearer

Both modes of discussion shared similar percentages of group management, with 5.9% for the control and 7.2% for the CMC. Group management, as part of the organisational theme, includes episodes expressing readiness to start the discussion, seeking and providing help, reference requests, and group-work time arrangements. CMC group 0209 took the lead in this subcategory with 25.3% of their ‘talk’. In the excerpt below (Excerpt 5.11), Thao and Dzung helped Huong to generate some ideas for her part of the essay. Huong seemed very pleased with this support. Later, it was

Huong's turn to support the others with idea generation. This group was very successful in a collaborative approach to requests for and provision of support, based on which learning within the ZPD was created.

Excerpt 5.11 (0209):

- 104 Thao: why don't u think about income?  
105 Huong: dzung mentioned  
106 Thao: A. ppl's income, eg  
107 Thao: dzung?  
108 Dzung: woman working outside is also a noticeable problem  
109 Thao: yes.  
110 Thao: i agrre w dzung  
111 Huong: interesting ideas  
112 Huong: Thanks  
113 Thao: good idea, right?

This kind of assistance was also seen in the group 0106, who had the highest percentage of group management at 14.5% of any control group. In the excerpt below the three members took turns to give advice on what should be included in each other's paragraph. Toan first advised Quynh to add some statistics in her draft; it was Quynh's and Duyen's turns to give Toan some teacher-like advice on the addition of more examples on nursing homes; then Toan in turn supported Duyen with some contrast concepts. While these exchanges from both groups (0209 and 0106) are very helpful and significant to collaborative learning, the language in 0106 (Excerpt 5.12), looks very orderly, prepared and concerned more with presenting and directing, compared to the natural flow of discussion in the above excerpt by the CMC group 0209, which is concerned more with suggesting.

Excerpt 5.12 (0106):

- 76 Toan: Quynh, you can give some statistics about married women working outside in Vietnam and in American to show the idea there are more and more married women working outside their home.  
77 Quynh: Yes, I will remember.  
78 Duyen: And Toan, in your paragraph. I think you should give some examples of nursing home to show that most older people live on their own.  
79 Quynh: And Toan, you should give the idea older people live with children and there are not much nursing home in Vietnam.

- 80 Toan: I will remember.  
81 Duyen: And in my paragraph, what should I write?  
82 Toan: I think you should explain the reason why people in both countries have contrast concept.

The last subcategory under the organisational theme was instances of the teacher's involvement in the discussion. It is not surprising to notice that there was no single participation from the teacher in the control group discussions, 10 of which took place in three different locations, as discussed in the methodology chapter. The teacher, having to move to and fro between the three places just to give support if needed and to make sure the discussions were being recorded properly, was not available to participate in any of the groups. However, the convenience of online group supervision allowed the teacher to be involved in the CMC group discussions up to 15% (see Figure 5.4). The teacher sat at his computer to observe all online group chats and his involvement was of three types: episodes of general chat initiated by students, student requests for help from the teacher because they knew that he was also online with them, and teacher technical control. Below are some examples. Excerpt 5.13 illustrates an instance of the teacher's participation when the Internet was cut off, and Excerpt 5.14, when it took the group too long to finish their discussion.

Excerpt 5.13 (0204):

- 9 Nga: start again??????  
10 Teacher: Yeah,  
11 Teacher: sorry about that  
12 Teacher: you can start again with 3 members now

Excerpt 5.14 (0202):

- 124 Teacher: please come to conclusion  
125 Teacher: it seems to take so long for you guys to decide!!!!  
126 Tam: yes, sorry sir

The amount of interaction with the teacher also varied across the CMC groups, from around 6% (0201) up to 22% (0203). While all the CMC groups included general chats with the teacher to some extent, only half of them sought help from the teacher. Still, the presence of the teacher can result in some questionable effects (Mangenot &

Nissen, 2006), such as when some students took advantage of this to consult the teacher quite often. Ngan in 0203, for example, managed to seek the teacher's advice at least three times during this group chat, as in Excerpt 5.15 below:

Excerpt 5.15 (0203):

- 35 Ngan: so... ask the teacher ok?  
36 Binh: Yeah  
37 Ngan: hello mr long???  
38 Ngan: are you there?  
39 Teacher: I'm here  
40 Ngan: we have a little problem  
41 Teacher: What's up?  
42 Ngan: on the content there's a topic "whats pop"  
43 Ngan: we wonder if we can focus on only one topic like that?  
44 Teacher: Sure; why not?  
...

Briefly, there were four subcategories coded under the organisational theme. These subcategories evidently aided in creating and maintaining the collaborative community of learning. The two subcategories of teacher involvement and technical management appeared to be exclusive to the CMC exchanges. While technical issues were unavoidable in the online discussion, creating various emotional and technical exchanges, the involvement of the teacher during the online discussion process generated controversial issues. Whereas the roughly equal amount of group management in the two versions, the CMC groups outweighed the FTF groups in the subcategory of discussion management. This subcategory included negotiation of various types, as an important element of interaction.

### ***5.3.3 Sociocognitive episodes***

The sociocognitive theme can be considered of central importance as it reflects whether students are learning during the discussion or just chatting with small talk. This theme was similarly categorised into topical episodes, again based on the focus of each, demonstrated in Figure 5.5.

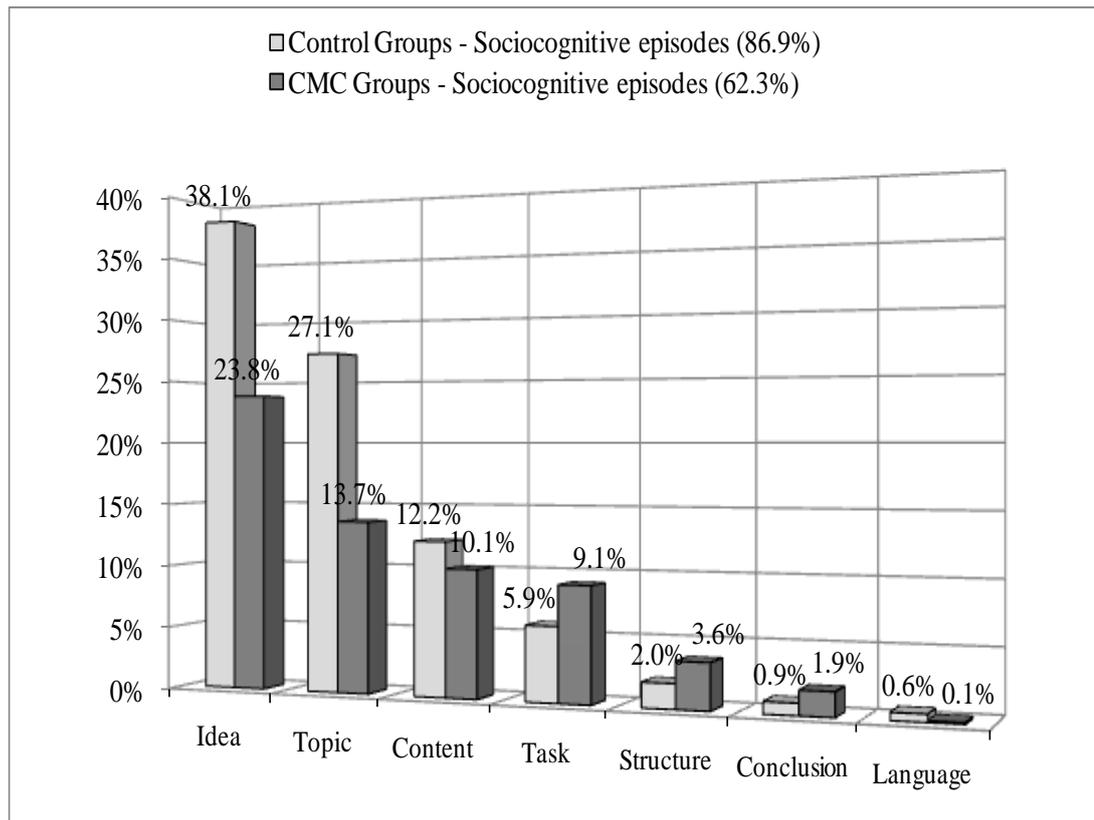


Figure 5.5 Sociocognitive episodes coded into emergent subcategories

Topic selection appeared to be one of the first sociocognitive episodes in the discussion chain according to the required task, which asked the groups first to choose a topic to discuss. The control groups had more than double the percentage of this subcategory as compared to the CMC group (27.1% versus 13.7%). Group 0108 had the highest percentage across the table of both classes (Table 5.7).

Table 5.7 Sociocognitive episodes by subcategory and by group

Group	Idea development	Topic selection	Content management	Task management	Structure arrangement	Conclusion	Language-related	Total
0101	39.1%	29.8%	10.7%	1.4%	1.5%	.0%	.0%	82.6%
0102	35.6%	16.5%	19.7%	7.7%	5.2%	.0%	1.0%	85.7%
0103	32.2%	23.9%	7.3%	5.2%	1.5%	.0%	.0%	70.0%
0104	40.9%	24.7%	7.6%	5.0%	1.9%	.0%	3.7%	83.8%
0105	54.3%	21.8%	4.9%	9.5%	3.8%	3.2%	.0%	97.6%
0106	40.0%	34.7%	3.3%	4.5%	.0%	.0%	.0%	82.5%
0107	31.7%	45.4%	.0%	4.7%	.0%	.0%	.0%	81.8%

Group	Idea development	Topic selection	Content management	Task management	Structure arrangement	Conclusion	Language-related	Total
0108	.0%	59.0%	19.4%	15.8%	.0%	.0%	.0%	94.2%
0109	34.6%	33.5%	16.6%	10.2%	1.7%	2.2%	.0%	98.8%
0112	50.8%	7.0%	24.0%	1.6%	1.8%	2.9%	.0%	88.2%
0201	14.5%	8.5%	23.1%	15.0%	8.8%	3.9%	.0%	73.8%
0202	44.5%	9.2%	0.0%	3.7%	2.0%	1.9%	0%	61.2%
0203	5.4%	19.3%	12.3%	13.2%	7.0%	3.8%	.0%	60.9%
0204	14.4%	12.9%	28.1%	6.8%	.0%	.0%	1.2%	62.9%
0205	29.8%	7.7%	5.6%	16.1%	9.0%	1.6%	.0%	69.7%
0206	30.9%	16.9%	4.9%	1.0%	.0%	.5%	.0%	54.1%
0207	18.2%	14.8%	6.1%	7.6%	5.1%	.0%	.0%	51.7%
0208	16.0%	14.1%	8.5%	15.0%	.0%	.0%	.0%	53.7%
0209	19.6%	24.0%	.0%	8.2%	.0%	6.8%	.0%	58.6%
0210	51.4%	5.9%	6.3%	7.3%	2.9%	.0%	.0%	73.8%

It was however interesting to note during the coding process that nearly 60% total of topic selection in this group (0108) was devoted to only one single long chunk from turn 2 to turn 50. All other control groups similarly spent just one or two chunks on this subcategory. Excerpt 5.16 illustrates how the control group 0108 selected their topic:

Excerpt 5.16 (0108):

- 2 Thom: ...uh in my opinion, I think economy in America is a very hot topic because of some reasons. The first reason is the economic system of the US is very plentiful and can be called as a capitalist mixed economy. The second one is economy activity varies greatly across the country. Each area has each potential in each different field. So, that reason makes economy of the US so pleasant characteristic.
- 3 Th. Anh: Yeah
- 4 Thom: and the third one is US is a colonialism; it has a lots of colonies, right?
- 5 Th. Anh: Yeah
- 6 Thom: And US can buy products with low price and sell with high price. Moreover, US invest money all over the country and we see a high benefit.
- 7 Th. Anh: Yeah

- 
- 8 Thom: Yes  
...
- 13 Th. Anh: The fifth.
- 14 Thom: The fifth is because of social structure and its population. Moreover, US attract a lot of manufacturers from overseas to contribute its country. In conclusion, US. In conclusion we can say that US economy influence on the other countries. Ok?
- 15 Th. Anh: Oh, I think that the topic about the economy in the US is very large. You must have a wide range of knowledge. As you know the US has 50 states, and divided into over ten regions. Each region has its own economy and develop different fields. And moreover, US is getting difficulty about the economy now.

Thom first initiated the selection of economy as the group topic by including a large amount of information taken from reading material to support her selection, while the other two were listening with minimal responses. This part of the episode was closed by Th. Anh, stating that the topic was difficult to develop, after waiting and receiving so much information. It was her turn below to direct the other two to a new topic of housing, also by presenting a considerable amount of information, and ending with a question, asking the last member, Tram if she would agree with her (Excerpt 5.17).

Excerpt 5.17 (0108):

- 19 Th. Anh: Oh I see. So I think that we should choose a smaller topic about the US culture.
- 20 Thom: Ok
- 21 Th. Anh: To me, I think that house in US is suitable.
- 22 Thom: House?
- 23 Th. Anh: Yes. I think that house is one of factors reflecting the development of economy ... economy. When the economy of a country develops the life of people is improved.
- 24 Thom: Uh
- 25 Th. Anh: US is an example. As you know, the US houses are built in many different kinds.
- 26 Thom: Uhh
- 27 Th. Anh: In general, their houses are often very large and big because in the US there is plenty of space, different from Vietnam, this is a narrow country. So, house in US both show the way of life as well as the development of society. I think we should choose this topic to understand a part of the US culture. Have you any ideas about my topic?  
...
-

32 Th. Anh: Uhhmm I agree. What do you think about my topic, Tram?

Tram then continued with the topic selection by providing a third, new topic of family life, instead of housing or economy, with again much supporting information. The group, in the end, came to the agreement of selecting the third topic provided by the third member and also the group leader, Tram, for their essay (Excerpt 5.18).

Excerpt 5.18 (0108):

- 33 Tram: I know you both have your own point of view. The topics you have chosen are very interesting. But if we want to have a deep understanding about American culture, I think we'd better choose another topic instead of house or economy.
- 34 Th. Anh: Yeah
- 35 Thom: Yeah
- ...
- 40 Tram: in US family life is greatly affected by the high level of industrialization.
- 41 Th. Anh: Yeah
- 42 Thom: Yeah
- 43 Tram: but by the doctrine of states rights, by the mixture of many religions. So it relates economy, politic and religion. The first helps to account for generally high material standard of living of the American family. The second for the diversify of laws governing marriage and divorce. The third for the variety of family norms and values.
- 44 Th. Anh: Oh .. OK. What you said is really interesting. I'm interested in this topic. How about you, Thom? You will agree, won't you?
- 45 Thom: Ok, let's start with this topic.

It is noted from this episode that the conversation was more about presenting already-known information and ideas instead of seeking and negotiating new ideas for topic selection. In other words, providing information, rather than requesting or suggesting, dominated throughout the episode.

The CMC groups, on the other hand, had a lower percentage of topic selection episodes, ranging from 6% to around 20%, but held more instances (from three to six) of this subcategory in each group. Group 0203, for example, had six main episodes regarding the negotiation of topic selection. Ngan, though not the leader, started the following thread (Excerpt 5.19) by asking the others which topic they should focus on, while Yen in turn 18 was still confused with selecting the text

colour for chatting as part of the previous episode. Binh, the group leader, responded to Ngan's request by giving her preference as sport and entertainment, followed by a request for the others' ideas. It was Ngan's turn to initiate her choice of pop music, but she added that she was not sure if it was a good one and went on to request Yen's ideas. Yen immediately expressed her favourite topic of music and seemed in a hurry to push the group to go on in turn 30 and 32. Still, they could not decide on a suitable topic; they then turned to ask the teacher, as suggested by Ngan (see Excerpt 5.15).

Excerpt 5.19 (0203):

- 16 Ngan: ok , lets stert with the topic  
17 Ngan: what will we focus on?  
18 Yen: we choose blue,all right?  
19 Ngan: ??  
20 Binh: i 'd like sports and entertainment  
21 Ngan: Oh  
22 Binh: how about u?  
23 Ngan: i choose the topic what's pop? dont know is it ok?  
24 Ngan: how about yen?  
25 Yen: i like music  
26 Binh: what 's pop is part of music?  
27 Binh: right?  
28 Ngan: really? i saw it on the content , it's a particular part  
29 Ngan: i mean its better to focus on only one topic  
30 Yen: ok,we ll talk about to pop,ok?  
31 Binh: it seems to be 1 part in entertainment  
32 Yen: come on.what do you like to talk about  
33 Ngan: but the teacher told that we can focus on whatever part we like  
34 Binh: i don't know wether we have to focus on big topic or just a small one  
35 Ngan: so.. ask the teacher ok?

Ngan returned to the group after seeking clarification from the teacher. This time she suggested an easy topic to be able to compare with Vietnam (Excerpt 5.20). From turn 164 they struggled to make each other understand the topic change, in which Ngan explained that it would be hard to compare American music with Vietnamese music. The negotiation ended with a reminder of discussion time by Yen in turn 174. The whole group finally came to a consensus of taking family life as the topic for their essay.

Excerpt 5.20 (0203):

- 158 Ngan: we have to choose the one that is easy to compare with vnese one  
...  
164 Yen: we can say about pop now,i dont know much about pop in past  
165 Ngan: nooo..  
166 Ngan: i mean we 'll change our topic  
167 Yen: what do u means,try up  
168 Ngan: not pop anymore  
169 Binh: really?  
170 Yen: ok,what about  
171 Ngan: coz it will be very hard to compare btw american music and vnese music  
...  
174 Yen: hurry up.we dont have much time  
175 Ngan: ok  
176 Ngan: so what 'd we choose instead?  
177 Yen: food  
178 Ngan: how about family life?  
179 Ngan: coz it will be easy  
180 Ngan: we all know very clearly about our family life  
181 Ngan: that topic seems to be easy to compare  
182 Ngan: yup  
183 Ngan: that what i mean  
184 Yen: may be but i like eating  
185 Ngan: how about u, Y?  
186 Yen: right we say about family  
...  
190 Ngan: so lets say FAMILY life

For group 0203, as for most of other CMC groups, it was much more complex and seemingly more challenging to come to a conclusion in terms of the topic selection than the control group 0108 even though they had a lower percentage of this subcategory (19% versus 60%). Group 0203 attained agreement through a series of instances of requesting, suggesting, explaining, rejecting, and challenging. All of these are significant factors for enhancing collaborative learning (Dillenbourg, 1999).

Idea development is regarded as the second important outcome from the discussions as required in the task. Episodes relating to this subcategory appeared as expected after the groups had come to the agreed topic for their essay. Similar to topic selection (see Table 5.7), the control groups had a higher percentage of idea

development episodes compared to the CMC groups (38% versus 24%). More specifically, discussion regarding idea development accounted for around 30% to 54% across the FTF groups, except for group 0108, which had no clear episode in this subcategory. Most of this group's sociocognitive episodes were on topic selection, task management, content management, and essay structure arrangement.

Similar to the control groups, the CMC groups also spent most of their discussion time on idea development, ranging from around 16% (0208) up to 51% (0210), except group 0203, who had only around 5% of idea development episodes. Most of the sociocognitive episodes of this group, resembling those of the control group 0108, were on topic selection, task management, content management, and essay structure arrangement. As discussed above, 0203 had spent a large amount of time on negotiating which topic to select for their essay. However, the big difference between the two classes was the degree to which this subcategory was scattered through the discussions. In other words, while most of the control groups spent just one or two long chunks on developing essay ideas, episodes relating to this subcategory spread throughout each of the SCMC discussions, like those on topic selection.

A comparison between 0105, who had the highest percentage of idea development episodes of any control group, and 0210, the highest of any CMC group in this subcategory, gives an overview of how ideas for the essay are developed in each mode of discussion. Group 0105 interestingly had a single chunk of 93, out of the total of 208, turns (from turn 48 to turn 141) talking about idea development (54%). The approach to task of this group was also rather different from the others. The three members each suggested one topic for their essay, providing a good deal of information. They however did not select the topic until the idea development processes finished. Instead, they preferred to analyse and develop ideas for each topic first (Excerpt 5.21).

Excerpt 5.21 (0105):

- 48 Thuy: Let's analyze the first one, family and family life.  
49 Thao: Ok. Your idea?  
50 Thuy: In my opinion, you says that family life plays an important role in society, it has many contribution to the social development. Can you tell me some ...

- 
- 51 Trang: Difficult to say
- 52 Thuy: ... differences and similarities between Vietnam and American culture, American family? First I'll talk about .... the role of women?
- ...
- 56 Thao: You can say ... about aging aging population?
- ...
- 67 Thuy: But I think it is just in the old days old days. How about now? Vietnam is ... It's now popular; popular in Vietnam. How about the second? Second difference? What's else?
- 68 Trang: Uh let's me see.
- 69 Thuy: Uh I think uh divorce, divorce rate, divorce rate.
- 70 Thuy: They they get married easily and get divorce even more easily (all laugh). They get married five times and they divorce five times. And so so that is the reason why in America there are many single parents ... Ok (whisper) It's quite not popular in our country.

Thuy, the group leader, started the idea development by asking the other members to analyse the first topic, i.e. family life, previously provided by Trang. They actively shared with each other opinions about American and Vietnamese family life, including women's role, the aging population, divorce rates, and so on. However, a closer look revealed that it was Thuy, who definitely controlled the discussion, by asking the others for ideas, but then presenting most of the ideas while the two other members played the listening role with minimal contribution. Thuy's leading role was also reflected in the way she directed discussion, as in Excerpt 5.22 below, when the group went on developing ideas for the second topic. It is noted that this group had a rather high Gini coefficient of .27, in which Thuy contributed the most (57%), followed by Trang (27%) and the least contributing member was Thao with only 16% of the group discussion.

Excerpt 5.22 (0105):

- 82 Thuy: Let's let take a look about language, ok? Uhm ok Uh language. I think as you know in our country the official language is Vietnamese. And people all over the country use only Vietnamese there quite very little ... other languages to be used in our country. But in America because the immigrant people quite diversity ...
- 83 Thao: Melting pot
- 84 Thuy: Come from all over the world. So they bring with them their language and culture. So the language makes American culture more

- 
- and more diversity. More and more diverse, uhm. .... Do you think so?
- 85 Thao: American has no official language?
- ...
- 91 Thuy: Those are some ideas about the language in American culture ... Got any idea?
- 92 Thuy: Let let go to education. An important field; make important role in a country development.
- 93 Thao: First we uh we should tell about similarities. Ok? Similarity.
- 94 Thuy: I know that in American children start at 6; in our country... 5... Kindergarten. What? And then they also have to go from grade 1 to grade 12. Is that... that is .... In our country first they go to kindergarten.

Thuy interrupted the second idea development at turn 91 by asking the others for any additional ideas, then immediately guided the group to the third topic idea development (turn 92), i.e. education. They took turns to present ideas relating to education with a similar role pattern, in which Thuy provided information whilst the other two listened, agreeing, and at times asking for clarification. This topic was later selected as the essay topic of this group.

Phuong started the idea development episodes in her CMC group, 0210, with the word 'flexibility' (Excerpt 5.23), which at first did not draw the others' attention. M. Hang and Chuyen were still worried that the topic they had selected in previous episodes was too large. Phuong had several times asked them for their ideas about the flexibility of American and Vietnamese people. M. Hang, the group leader, responded to Phuong by rejecting the idea that flexibility was similar in both countries, but rather it was a difference, which she supported with some explanations. Phuong maintained her idea by defining the term flexibility, meaning it is easy for people to accept new things. It was Chuyen's turn to reject the idea in line 73, suggesting that Vietnamese people did not find it easy to accept new things, by which she agreed with M. Hang's point of view. Phuong, the most contributing member at 57% in the CMC group of the highest Gini coefficient (.23), mitigated the negotiation by asking if they should remove this idea and go on or not. Clearly, language, accompanied with its meaning, is not merely owned by an individual, rather a process of co-construction with others (Chun, 2008) in this particular online

context. Group 0210 had several episodes of idea development like this, dispersed from turn 47 until turn 356 out of 366 turns of the whole discussion.

Excerpt 5.23 (0210):

- 47   Phuong:     flexibility  
 ...  
 50   Phuong:     do you think this kind of character similar or different between  
                   VNese and Ame  
 ...  
 58   Phuong:     hey guys, are you listening to me  
 59   M. Hang:     yes, for ex.  
 60   Phuong:     I am talking about flexibility  
 61   Phuong:     contribute your ideas plz  
 62   Chuyen:     ok  
 63   Phuong:     I think it's a similarity  
 64   Phuong:     but i'm not sure  
 65   M. Hang:     i think it's a difference  
 66   Chuyen:     yes  
 67   Phuong:     why kiko?  
 68   M. Hang:     vnese is less flexible  
 69   M. Hang:     they like sth stable  
 70   Chuyen:     vn want to keep its tradition  
 71   M. Hang:     for instance, job  
 72   Phuong:     flexibility here means that it's easy for them to accept new things  
 73   Chuyen:     but vn is not  
 74   Chuyen:     i think M. Hang is right  
 ...  
 89   Phuong:     so, we remove this idea and go on with others or what?

When being asked later for her comments about the high level of involvement and the consistent level of on-task focus, Phuong compared this SCMC discussion with her previous group work experience, “it was much easier to talk academically without having to look at the face.” It was because FTF meetings, with the milieu of small talk, such as food, love, shopping, joking, and teasing usually distracted her and other group members from staying focused.

As in the topic selection episodes from the CMC group 0203 discussed above (see Excerpts 19 and 20), it was much more complex and challenging to obtain agreement in developing an idea in CMC group 0210 than in control group 0105. Examples from the two groups above showed that 0105 was concerned more with presenting

ideas and providing information while 0210 had a long process of negotiation of ideas, in which it was not easy to get to common ground among the members. A series of instances from 0210 and other CMC groups on idea suggestions, followed by eliciting, agreeing or disagreeing, and clarifying, together with counter-suggesting by initiating another idea, made it evident that online participation and interaction are more conducive to the synthesis of information than those from the FTF mode.

Task management episodes involve those of task confusion, task clarification, task confirmation, and task division. The most frequent of all was task division, mainly because this subcategory was part of the requirements during the discussion. Unlike the two previous subcategories (topic selection and idea development), this task management subcategory accounted for only 9.1% out of 62.3% sociocognitive episodes in the CMC groups, but this was still more than one and a half times as many as the control groups (5.9%). Not much difference can be found between the two modes of discussion with regard to this type of episode, except for the point that the control groups appeared more directing and dictating while assigning the task among members. The CMC groups, in contrast, tended to suggest and offer to choose. Excerpt 5.24 illustrates how the CMC group 0201 dealt with task division.

Excerpt 5.24 (0201):

- 55 Hang: we divide each person each part  
56 Hang: let's choose  
57 T. Huong: you can choose. i will get the rest  
...  
60 Suong: i choose the first part  
...  
65 Hang: i choose the third  
...  
67 Hang: the second belongs to huong. ok?  
68 T. Huong: ok

Hang, the leader, initiated this episode by proposing that it was time to assign a part of the essay to each person. T. Huong seemed flexible when recommending the selection to the other members; she offered to take what was left over. Like many other groups, both FTF and CMC, it was not difficult for 0201 to divide the task among the members.

Content arrangement episodes are those discussing the logical distribution of ideas for the essay, while the essay structure episodes are defined as those relating to the number and/or the order of paragraphs in the essay. These two combined were roughly equal in the two modes of discussion with around 14% each. Excerpt 5.25 (control group 0102) and Excerpt 5.26 (CMC group 0201) below demonstrate how the two groups conversed about the organisation of their essay.

Excerpt 5.25 (0102):

- 61 Chau: The introduction, the 3 paragraphs and conclusion, uhm... the 1st paragraph is about the variety of American houses,  
62 P. Thanh: So, the variety of American house?  
63 Chau: Yeah, many kinds of house. The 2nd one is the space for living... The space for living, I mean, in the text book there's a description about a typical American house and the way the family... family in a house... how they share the room...uhm  
64 P. Thanh: And the last one?  
65 Chau: Of course the difference between American houses and Vietnamese houses and ah the way they live and think of a place to live.

Chau, the leader of 0102, dictated this episode by providing her ideas in respect of the content arrangement, while P. Thanh kept repeating what was said by the leader and the third member, Anh, did not contribute any opinion on this arrangement.

Conversely, as shown below (Excerpt 5.26), Hang, the leader of 0201, suggested there should be some comparison in each paragraph of the essay. Suong immediately rejected this by challenging her group leader with the idea that if comparison was needed, the essay could not be divided into three parts as discussed earlier. This was supported by T. Huong, who requested Hang to explain more about her idea of combining comparison in each part. This again confirms the fact that negotiation, leading to the synthesis of information, occurred throughout the online discussion.

Excerpt 5.26 (0201):

- 108 Hang: i think that we should combine comparision in each part  
...  
114 Suong: hang, if we combine comoarasion in each part  
115 T. Huong: uh

- 116 Suong: u will not divide into three part above  
117 T. Huong: i don't understand. more clear  
118 Hang: let me see  
119 T. Huong hang can u explain  
120 Hang: we should divide again

Finally, conclusion and language-related episodes took a modest proportion of the sociocognitive component in both classes. The conclusion episodes are those reviewing and/or summarising what had been discussed within the group. While there were only three FTF groups who needed this concluding part in their discussion, the CMC groups doubled the number with six out of 10 having this instance. This could be due to the influence of the modality, in which the lack of facial expressions in CMC discussions made the students feel the necessity of having some conclusion, reviewing what had been said to ensure all of them attained a shared understanding. Group 0203 provided a sample of this type of conclusion (Excerpt 5.27). This excerpt shows the group reviewing all that had been discussed by this group, though there was still a small mismatch between Binh (turn 366) and Yen (turn 369).

Excerpt 5.27 (0203):

- 361 Ngan: so we will focus on:  
362 Ngan: FAMILY LIFE  
363 Yen: yup, com on  
364 Binh: short intro  
365 Ngan: Yen will write the intro and conclu para  
366 Binh: +differences  
367 Binh: +similarities  
368 Ngan: then Ngan write the 2nd para about differences  
369 Yen: no Ngan write different not me  
370 Ngan: and we follow some part in the material as: marriage, structure of the family  
371 Ngan: and so on ..  
372 Binh: agree!  
373 Ngan: thats all right?

There was a dearth of language-related episodes found in both modes of discussion. The decision to include this type of episode in the sociocognitive theme despite its being so minimal was to show why the intended coding scheme, as discussed in the

methodology chapter, was replaced; and that there was a shortcoming, as regards the task design as far as the current thesis about second language teaching was concerned. The main reason for this dearth is that these students were at a rather high, and roughly equal level of English language proficiency, which reduced misinterpretation concerning the use of vocabulary and structures. Likewise, they had been continuously studying together for the past two and a half years before the current research taking place, which possibly helped them minimise instances of misunderstandings relating to accents and pronunciation, exclusively in the FTF exchanges. Below is a rare example of language-related instances found in one of the FTF discussions. This is about pronunciation.

Excerpt 5.28 (0102):

- 130 Anh: In para. two, (papers rustling) we describe a typical /'taipikəl/...
- 131 Chau: Typical /'tipikəl/
- 132 P. Thanh: Typical /'tipikəl/
- 133 Anh: Typical /'tipikəl/ American house and how a family shares the rooms...

## 5.4 Summary

The synchronous process of discussion was analysed from the two perspectives of participation and interaction. The first, quantitative, level of analysis of participation of the discussion process revealed that the CMC groups spent significantly more time but produced fewer words in their discussion than did the control groups. Similarly, the influence of technology, Yahoo! messenger chat in this case, did affect the nature of the discussion pattern in terms of the number of words per turn. The average ratio of words per turn made by the 10 CMC group was three times less than that generated by the 10 FTF groups although the mean number of turns was approximately equal across the two modes of exchanges. An interesting finding related to this ratio was that while in the FTF discussions the more dominant a member was, the longer turn he/she generated, this pattern of participation was not seen in the CMC discussions. The impact of the synchronous CMC as a mediator impeded dominant members from taking control of the discussion floor.

Furthermore, central to this level of analysis were the Gini coefficients of participation inequality. The results from this measurement proved beyond doubt that participation patterns in most of the CMC groups were more balanced and equal than that of the control groups. This is a significant finding as far as the three components of collaborative learning were concerned (cf. section 3.3.2.3). Another important finding was that technology mediated communication modified the participants' roles. This was reflected in the leaders' pattern of involvement. While most of the leaders in the FTF groups took control of the discussion floor, more than half of the CMC group leaders were not able to take the leading part in their groups.

As far as interaction was concerned, the chat scripts were analysed into three themes, socioaffective, organisational, and sociocognitive. There were four main subcategories of the socioaffective themes that assisted in building and maintaining the collaborative community of learning. Similarly, episodes under the organisational theme were coded into four subcategories that helped create and enhance the collaborative process. Finally, regarding the sociocognitive theme, the quantitative view of data analysis on this interaction stage indicated that the control groups surpassed the CMC groups in topic selection and idea development, identified as the two most frequent sociocognitive subcategories. The two versions of discussion shared approximately equal percentages in the five other subcategories. The qualitative analysis however presented a different picture of interaction, in which the CMC groups were more learning-oriented whilst the control groups appeared to be more product-oriented.

## **CHAPTER SIX: ASYNCHRONOUS PEER REVIEW**

### **6.1 Overview**

The major focus of this chapter is to explore if the collaborative potential offered by wikis translates into actual practice. The peer review process of the 20 groups is analysed below. It is necessary to reiterate that the unit for analysis for the peer review is sentential meaning units, rather than episodes, as used for the previous synchronous discussion. An entry may be composed of several sentential comment units. A comment, as used throughout the discussion below, therefore, is equivalent to a sentence. Overall, this chapter of the results analysis aims to answer the second research question regarding the nature and effectiveness of ACMC peer review as compared with the traditional pen-and-paper peer review as part of the collaborative learning process.

### **6.2 Participation**

All of the comments (i.e. sentences) were first analysed quantitatively in terms of the number of comments made by each group, and then the number of comments contributed by each member in a group. This coding and counting process, supported by NVivo 8.0, helped to gain an overview of the level of participation, or contribution, of group members in this process of asynchronous peer review.

The quantitative data revealed that the peer review by the CMC groups produced a total of 9,976 words, more than double those made by the control group of 4,344 words. Likewise, there was a much larger number of comments overall in the CMC groups than in the control groups (1,117 versus 476). More specifically, the number of comments ranged from as few as 31 (made by all three members of group 0105) to 82 (group 0108) in the control class (Table 6.1). Meanwhile, the CMC class produced a much higher number of comments, varying from 61 (group 0209) through 135 (group 0206), to 0210, who had the extraordinary total of 250 comments contributed by the three members (Table 6.2).

Table 6.1 Individual contribution in the peer review process: Control groups

Group	Member <sup>a</sup>	Socio-affective comments		Organisational comments		Socio-cognitive comments		Total Gini	
		N	%	N	%	N	%	N	%
0101	Quy	0	.0	0	.0	5	8.6	5	8.6
	Trang	0	.0	0	.0	17	29.3	17	29.3
	N. Phuong* <sup>b</sup>	5	8.6	2	3.4	29	50.0	36	62.1
	Total	5	8.6	2	3.4	51	87.9	58	.35
0102	Anh	1	3.0	0	.0	4	12.1	5	15.2
	Chau*	0	.0	0	.0	6	18.2	6	18.2
	P. Thanh	3	9.1	0	.0	19	57.6	22	66.7
	Total	4	12.1	0	.0	29	87.9	33	.35
0103	Huong	0	.0	0	.0	9	18.0	9	18.0
	Duong	1	2.0	0	.0	9	18.0	10	20.0
	Nhuan*	0	.0	0	.0	31	62.0	31	62.0
	Total	1	2.0	0	.0	49	98.0	50	.29
0104	Hoa	0	.0	0	.0	14	29.2	14	29.2
	Cuc*	0	.0	0	.0	16	33.3	16	33.3
	Nga	0	.0	0	.0	18	37.5	18	37.5
	Total	0	.0	0	.0	48	100	48	.06
0105	Thuy*	0	.0	0	.0	6	19.4	6	19.4
	Thao	0	.0	0	.0	8	25.8	8	25.8
	Trang	2	6.5	0	.0	15	48.4	17	54.8
	Total	2	6.5	0	.0	29	93.5	31	.24
0106	Quynh	0	.0	0	.0	6	10.5	6	10.5
	Duyen*	2	3.5	0	.0	22	38.6	24	42.1
	Toan	0	.0	0	.0	27	47.4	27	47.4
	Total	2	3.5	0	.0	55	96.5	57	.24
0107	Van	0	.0	0	.0	6	12.0	6	12.0
	Quyên	1	2.0	0	.0	20	40.0	21	42.0
	Ngan*	0	.0	0	.0	23	46.0	23	46.0
	Total	1	2.0	0	.0	49	98.0	50	.23
0108	Thom	1	1.2	0	.0	12	14.5	13	15.7
	Tram*	0	.0	0	.0	31	37.3	31	37.3
	Th. Anh	0	.0	0	.0	39	47.0	39	47.0
	Total	1	1.2	0	.0	82	98.8	83	.20
0109	T. Anh	0	.0	0	.0	10	29.4	10	29.4
	Kieu*	0	.0	0	.0	10	29.4	10	29.4
	Uyen	0	.0	0	.0	14	41.2	14	41.2
	Total	0	.0	0	.0	34	100	34	.08
0112	Hieu	0	.0	0	.0	7	21.9	7	21.9
	Loan	0	.0	0	.0	10	31.3	10	31.3
	Thanh*	0	.0	0	.0	15	46.9	15	46.0
	Total	0	.0	0	.0	32	100	32	.17

<sup>a</sup> All names are pseudonyms.

<sup>b</sup> Members marked \* were group leaders.

Table 6.2 Individual contribution in the peer review process: CMC groups

Group	Member <sup>a</sup>	Socio-affective comments		Organisational comments		Socio-cognitive comments		Total		Gini
		N	%	N	%	N	%	N	%	
0201	Suong	1	1.2	5	6.1	16	19.5	22	26.8	
	T. Huong	0	.0	0	.0	26	31.7	26	31.7	
	Hang* <sup>b</sup>	1	1.2	0	.0	33	40.2	34	41.5	
	Total	2	2.4	5	6.1	75	91.5	82		
0202	Tuan	3	3.4	0	.0	13	14.6	16	18.0	
	H. Phuong*	4	4.5	13	14.6	10	11.2	27	30.3	
	Tam	8	9.0	6	6.7	32	36.0	46	51.7	
	Total	15	16.9	19	21.3	55	61.8	89		
0203	Yen	2	2.6	4	5.2	5	6.5	11	14.3	
	Binh*	3	3.9	7	9.1	14	18.2	24	31.2	
	Ngan	7	9.1	11	14.3	24	31.2	42	54.5	
	Total	12	15.6	22	28.6	43	55.8	77		
0204	Thi	1	1.6	0	.0	11	17.2	12	18.8	
	Loc	5	7.8	0	.0	10	15.6	15	23.4	
	Nga*	6	9.4	1	1.6	30	46.9	37	57.8	
	Total	12	18.8	1	1.6	51	79.7	64		
0205	Hanh*	6	4.6	0	.0	24	18.5	30	23.1	
	Hoa	0	.0	0	.0	44	33.8	44	33.8	
	Viet	6	4.6	0	.0	50	38.5	56	43.1	
	Total	12	9.2	0	.0	118	90.8	130		
0206	Anh	2	1.3	2	1.3	30	18.8	34	21.3	
	Thoa	6	3.8	4	2.5	32	20.0	42	26.3	
	Nguyen*	9	5.6	31	19.4	44	27.5	84	52.5	
	Total	17	10.6	37	23.1	106	66.3	160		
0207	Thuy	2	2.0	1	1.0	10	9.8	13	12.7	
	Dao	0	.0	0	.0	15	14.7	15	14.7	
	Nghia*	0	.0	5	4.9	69	67.6	74	72.5	
	Total	2	2.0	6	5.9	94	92.2	102		
0208	Thang*	5	5.7	3	3.4	18	20.7	26	29.9	
	Nhung	4	4.6	4	4.6	22	25.3	30	34.5	
	V. Hang	1	1.1	0	.0	30	34.5	31	35.6	
	Total	10	11.5	7	8.0	70	80.5	87		
0209	Huong	0	.0	1	1.3	17	22.4	18	23.7	
	Thao	0	.0	0	.0	25	32.9	25	32.9	
	Dzung*	0	.0	0	.0	33	43.4	33	43.4	
	Total	0	.0	1	1.3	75	98.7	76		
0210	Chuyen	20	8.0	9	3.6	21	8.4	50	20.0	
	M. Hang*	16	6.4	10	4.0	41	16.4	67	26.8	
	Phuong	55	22.0	32	12.8	46	18.4	133	53.2	
	Total	91	36.4	51	20.4	108	43.2	250		

<sup>a</sup> All names are pseudonyms.

<sup>b</sup> Members marked \* were group leaders.

As far as individual participation was concerned, the comment number ranged from only 5 to 39 in the control groups; and from 7 up to 66 for most members in the CMC groups, with one standout student, Phuong in 0210, producing the exceptional number of 133 comments in all. Briefly, the average number of comments per CMC group was 112, more than double the mean of 48 per group in the control class. Individually, the average number of comments made by a control group member was 16, while that of the CMC class was 34, more than double.

These substantial differences can be explained by the learning situation, as discussed in the methodology chapter, in which the control groups used pen and paper (hereafter referred to as ‘paper version’) to give feedback and comments on their peers’ drafts. This traditional mode of writing partly impeded learners from easily editing drafts and interacting with other group members (Warschauer, 1997). The control students had between one and two weeks to do this in their own, out-of-class time. The amount of time spent by each student reviewing and/or making comments on drafts was unknown by the teacher/researcher. All they were required to submit was the peers’ draft along with the corresponding peer review sheet.

The CMC groups, on the other hand, conducted the same required task on the wiki. They did not have to submit any paper to the teacher, who could instead view their work online. With the same period of their own, out-of-class time, they could log in to their group wiki sites to read and/or to comment on their peers’ drafts as many times as they wanted to. Their login times, however, could be observed by the teacher. These login times ranged from 10 to 102, making it the mean of 45 times per student during this peer comment process. This reveals the effectiveness of the wiki on the learners’ motivation and involvement, reflected in the quantity of comments. Moreover, in addition to following the peer review guideline provided by the teacher and correcting directly on the peers’ draft, as did the control groups, CMC students could also edit their own draft as well as the final essay. Finally, the convenience of working on the wiki made the students adapt this learning environment to a social network, in which they could share many other things rather than just focusing on the editing task. It is therefore no wonder that there were a considerably larger number of comments in the CMC groups compared to the control groups.

In general, it can be concluded from Table 6.3 that the number of comments by groups in the CMC class (Mean: 101.50, SD: 52.36) is significantly higher than those in the control class (Mean: 47.40, SD: 15.95) at .01 level of significance. Similarly, CMC members produced a significantly higher number of comments per individual (Mean: 33.83, SD: 23.84) than those contributed by the control members (Mean: 15.80, SD: 9.49) at the .01 level of significance. Finally, of interest was the Gini coefficient figure. Though there was no statistically significant difference between the two classes regarding this measurement of participation inequality, contribution (in terms of the number of comments) in the CMC groups tended to be more equal than in the control groups as the mean Gini coefficient was higher in the latter (.19 versus .22).

Table 6.3 Pen-and-paper versus wiki peer comments: *T*-test analysis

	Control Class		CMC Class		<i>t</i>	<i>p</i> *
	(n=10)		(n=10)			
	Mean	S. D.	Mean	S. D.		
Total words by groups	434.40	184.44	997.60	469.86	3.53	.004
Total comments by groups	47.40	15.95	101.50	52.36	3.13	.006
Gini coefficients	.22	.10	.19	.10	.56	.586
	Control members		CMC members		<i>t</i>	<i>p</i> *
	(n=30)		(n=30)			
	Mean	S. D.	Mean	S. D.		
Comments by members	15.80	9.49	33.83	23.84	3.85	.000

\*Significant at  $p < .01$

### 6.3 Interaction

Similar to the coding procedure applied to the data in the discussion process, the framework for the comments produced by the 20 groups was also the three broad themes of collaborative interaction proposed by Mangenot and Nissen (2006). The rationale was to examine the distribution of the peer comments in the socioaffective, organisational, and sociocognitive themes according to their focus and purpose. It

should also be noted that examples presented throughout the analysis of this process of peer review are taken from the wiki-based groups because (1) these groups are the focus of this study, (2) the online groups produced significantly more comments across the subcategories and types as presented below, and (3) the comments on wikis shown in each subcategory and type as follows can exemplify for both modes of learning.

Subcategories were later identified as they emerged from the analysis process. These are used to discuss the difference between the two modes of peer exchanges. It is noted that while the theoretical framework for analysis is the same in this part as that used in the discussion analysis, the content and the topic of subcategories are different owing to the nature of the task. More specifically, unlike the discussion task, mainly expecting the students to select the essay topic, idea development, and task division, the peer review process required the group members to give feedback and comments on each other's drafts.

Figure 6.1 reveals that comments coded into the sociocognitive theme dominated in both modes of learning with 795 comments (71.2%) found in the wiki groups and 458 (96.2%) obtained from the control groups.

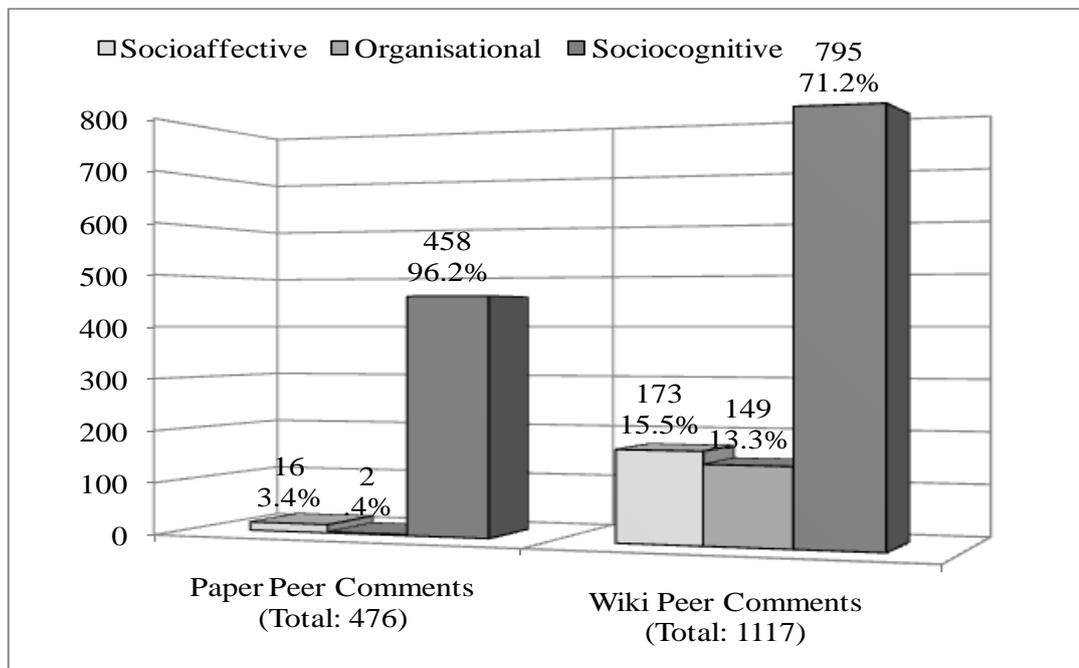


Figure 6.1 Comments coded into themes

On average, the CMC class produced 80 sociocognitive comments per group, nearly double the mean of 45 made by control groups. This again confirmed that the groups in both classes stayed focused on the assigned task of giving feedback on each other's drafts, especially the pen-and-paper groups, who in contrast had a minimal number of comments related to the other themes, socioaffective (16 comments) and organisational (2 comments). Regarding these two themes, the CMC groups sketched a different picture with a roughly equal, and comparatively high, number of comments, i.e. 173 comments (15.5%) which were socioaffective and 149 organisational comments (13.3%).

Sociocognitive comments populate across the 20 groups in Table 6.4, ranging from as few as 33 comments (0102) to 83 comments (0108) in the paper version, and from 64 comments (0204) up to 118 comments (0205) in the wiki mode.

Table 6.4 Total distribution of comments by theme and by group

Group	Socioaffective comments		Organizational comments		Sociocognitive comments		Total comments
	No.	%	No.	%	No.	%	
0101	5	8.6	2	3.5	51	87.9	58
0102	4	12.1	0	.0	29	87.9	33
0103	1	2.0	0	.0	49	98.0	50
0104	0	.0	0	.0	48	100	48
0105	2	6.5	0	.0	29	93.5	31
0106	2	3.5	0	.0	55	96.5	57
0107	1	2.0	0	.0	49	98.0	50
0108	1	1.2	0	.0	82	98.8	83
0109	0	.0	0	.0	34	100	34
0112	0	.0	0	.0	32	100	32
0201	2	2.4	5	6.1	75	91.5	82
0202	15	16.9	19	21.3	55	61.8	89
0203	12	15.6	22	28.6	43	55.8	77
0204	12	18.8	1	1.6	51	79.7	64
0205	12	9.2	0	.0	118	90.8	130
0206	17	10.6	37	23.1	106	66.3	160
0207	2	2.0	6	5.9	94	92.2	102
0208	10	11.5	7	8.0	70	80.5	87
0209	0	.0	1	1.3	75	98.7	76
0210	91	36.4	51	20.4	108	43.2	250

Notably, there were three control groups (0104, 0109, and 0112) who devoted all of their comments only to the sociocognitive theme. Only one control group had just two comments coded as organisational, while nine out of the 10 CMC groups had several comments related to organisational issues, varying from just one to 37 for most groups, not to mention 51 organisational comments in 0210. The socioaffective theme also showed a similar pattern of appearance to the organisational one, in that there were a small number of comments relating to emotional expressions or social cohesion in the paper groups, the highest of five comments found in 0101. The CMC groups, in contrast, turned the wiki platform into a collective environment for supplementary chatting, making jokes, and expressing emotions, besides the main sociocognitive task of giving comments on each other's drafts.

In sum, the preliminary findings reveal that the control groups focused their comments mostly on the sociocognitive theme with a minimal number of comments which were socioaffective and organisational. The wiki groups, on the other hand, made use of the various functions of the wiki to make the peer review process more than just giving and receiving feedback but also developing an online community of learning and interaction.

### ***6.3.1 Socioaffective comments***

Emergent subcategories under the socioaffective theme included comments relating to emotional expressions, intersubjectivity, personal exchanges, social cohesion, and the use of first language, i.e. Vietnamese (Figure 6.2). Even though these social and affective elements were not part of the required task in the peer review process, the convenience of the wiki encouraged the CMC groups to produce a huge number of 173 socioaffective comments in comparison with only 16 made by the control groups.

Most of the socioaffective comments were categorised into the intersubjectivity subcategory, defined as consisting of sentences regarding encouraging, acknowledging, seeking agreement, and agreeing or rejecting general ideas, with 89 comments from the CMC groups and 13 from the pen-and-paper groups. The number of comments concerning emotional expressions and personal exchanges were also high and roughly equal in the wiki groups (30 and 33 respectively) while the whole

10 control groups wrote only one or two sentences respectively on these subcategories. In addition, the analysis of paper comments proved that no social cohesion, such as greeting, introducing, and farewell, was deemed necessary in this review procedure whilst the wiki groups had 11 comments of this type. Similarly, the use of Vietnamese (10 comments), mainly to express various personal feelings, was also observed throughout the wiki sites, whereas no instance of first language use was found in the traditional paper version.

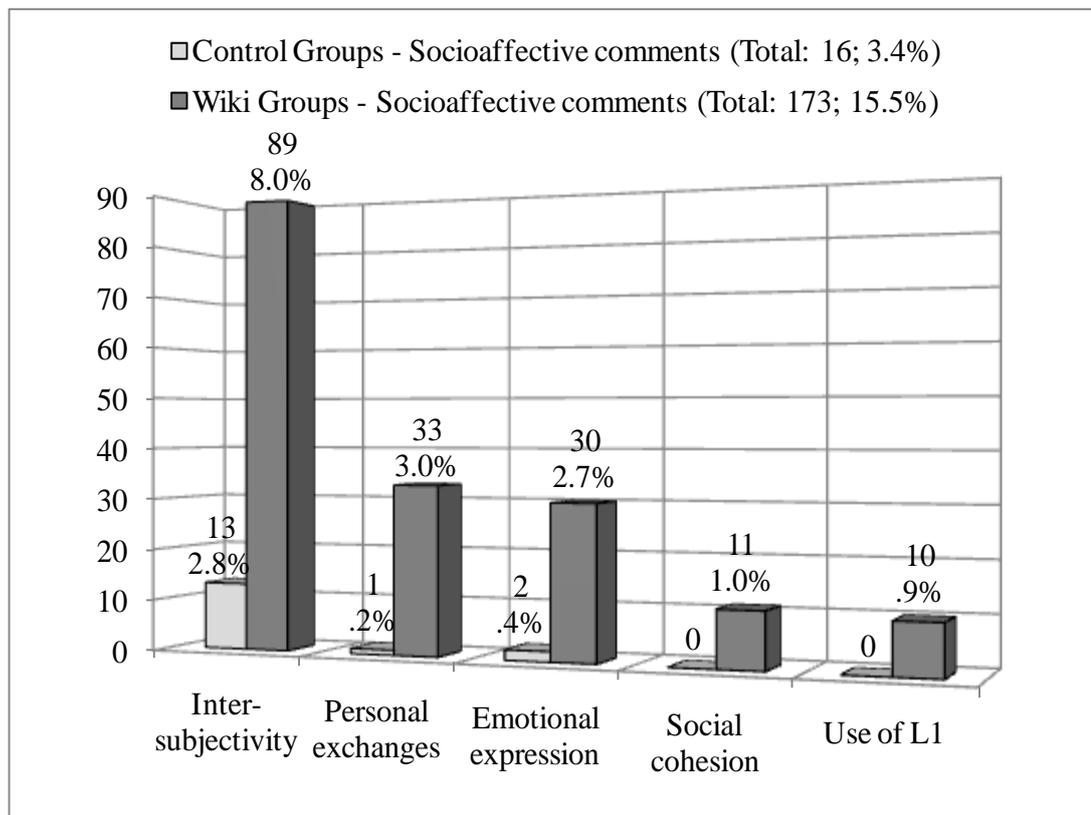


Figure 6.2 Socioaffective comments coded into emergent subcategories

Table 6.5 presents the distribution of socioaffective comments by groups from the two classes. The number of comments of this type ranged from just one to five in the control groups; and from two up to around 15 in the CMC groups, apart from 0210 with 91 sentences coded as socioaffective.

Table 6.5 Socioaffective comments by subcategory and by group

Group	Inter-subjectivity		Personal exchanges		Emotional expression		Social cohesion		Use of L1		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
0101	2	3.4	1	1.7	2	3.4	0	.0	0	.0	5	8.6
0102	4	12.1	0	.0	0	.0	0	.0	0	.0	4	12.1
0103	1	2.0	0	.0	0	.0	0	.0	0	.0	1	2.0
0105	2	6.5	0	.0	0	.0	0	.0	0	.0	2	6.5
0106	2	3.5	0	.0	0	.0	0	.0	0	.0	2	3.5
0107	1	2.0	0	.0	0	.0	0	.0	0	.0	1	2.0
0108	1	1.2	0	.0	0	.0	0	.0	0	.0	1	1.2
0201	2	2.4	0	.0	0	.0	0	.0	0	.0	2	2.4
0202	11	12.4	0	.0	3	3.4	1	1.1	0	.0	15	16.9
0203	7	9.1	2	2.6	0	.0	3	3.9	0	.0	12	15.6
0204	12	18.8	0	.0	0	.0	0	.0	0	.0	12	18.8
0205	11	8.5	0	.0	1	0.8	0	.0	0	.0	12	9.2
0206	7	4.4	0	.0	7	4.4	2	1.3	1	0.6	17	10.6
0207	1	1.0	0	.0	1	1.0	0	.0	0	.0	2	2.0
0208	6	6.9	2	2.3	0	.0	0	.0	2	2.3	10	11.5
0210	32	12.8	29	11.6	18	7.2	5	2.0	7	2.8	91	36.4

Note: 0104, 0109, 0112, and 0209 are not included in the table as they did not have any comments regarding the socioaffective theme.

Nga's and Loc's entries<sup>1</sup> below show how the CMC group 0204 expressed their acknowledgements after their drafts were commented on by other group members. All this group's socioaffective exchanges fitted into this intersubjectivity subcategory.

Nga, 0204: Ok, I see. I will revise the topic sentence and rewrite it when we make a whole essay.

Loc, 0204: ok, i see. I agree with your comment, i'll combine 2 sentences of the para

<sup>1</sup> All examples are cited verbatim.

In addition, intersubjectivity can be observed when Phuong in group 0210, the most contributing member, continuously gave support to Chuyen on her draft, from encouragement to seeking consensus after giving some advice on Chuyen's piece of writing.

Phuong, 0210: This's interesting. ... Good job 🥰

Phuong, 0210: I hope my comment is useful to for you. ... Let me know your idea.

Group 0210 also used many more comments with emotional expressions and personal exchanges than any other CMC groups. Phuong, for example, shared her liking and interest in the use of wiki with several comments at the beginning of the course:

Phuong, 0210: I like studying this way. ... I love this Friday 😊 ... Finally, it comes, yeah yeah.

Phuong additionally used the wiki platform as a social network for recounting her personally unlucky incident of losing her purse, which had absolutely no relation to the task.

Phuong, 0210: unfortunately, I lost my purse, which contains a lot of important papers. This will cost me much time to re-register all.

Similar instances of emotional expressions were also observed in other CMC groups. Tam in 0202 preceded a reminder to the other members to add more comments on draft with reference to an illness she had just recovered from:

Tam, 0202: oap...tired! I have got sick for 4 days. our group have to make much more comment...help me plizzzzzzzzzzzzzzzz!

Likewise, Vietnamese was occasionally used, mainly expressing social and affective aspects of experiences. M. Hang in 0210 had the most comments using Vietnamese to show her interest and curiosity about learning with the wiki for the first time. Notably, there was quite frequent use of half English and half Vietnamese, as in M. Hang's second example below by these Vietnamese students of English.

M. Hang, 0210: woa, we se lam an j here? kaka (Translated: Wow, what will we do with this? kaka)

M. Hang, 0210: xong dat your page day^^ (Translated: Glad to be the first footer in your page^^)

In general, socioaffective exchanges did, without a doubt, appear on the wiki sites throughout the CMC groups to various extents. The wiki environment, by nature, facilitated socially and affectively oriented collaborative interaction. The students made use of various functions in the wiki to exchange emotional expressions, intersubjectivity, personal exchanges, and social cohesion as part of their peer review process. These comments, as a supplement to the sociocognitive theme, helped to build a collaborative community of learning, in which members used various techniques, such as encouragement, seeking agreement, self-disclosure and first language use among many other social and affective means, in order to attain and maintain a shared understanding and interdependency.

### ***6.3.2 Organisational comments***

Like the organisational subcategories in the discussion process, organisational comments were also subcoded into feedback management, group management, teacher involvement, and technical management according to their focus and purpose (see Figure 6.3). There were 87, out of 149, organisational comments in the CMC groups coded as feedback management, which, by nature, includes those comments (1) indicating to other members that the student had put some entries on drafts, (2) indicating to other members that he/she had revised drafts, and (3) reminding others to add comments.

Second in the rank as regards the organisational theme were entries made by the teacher, accounting for 37 comments in all of the CMC groups. Also in the wiki-based peer review, 18 comments were coded under the group management subcategory, defined as consisting of comments expressing group work time management and the finishing of the peer review process, while only seven comments were found regarding technical management. The control groups had only two comments in the organisational theme, produced by N. Phuong, the class monitor and also the leader of group 0101, and coded as feedback management.

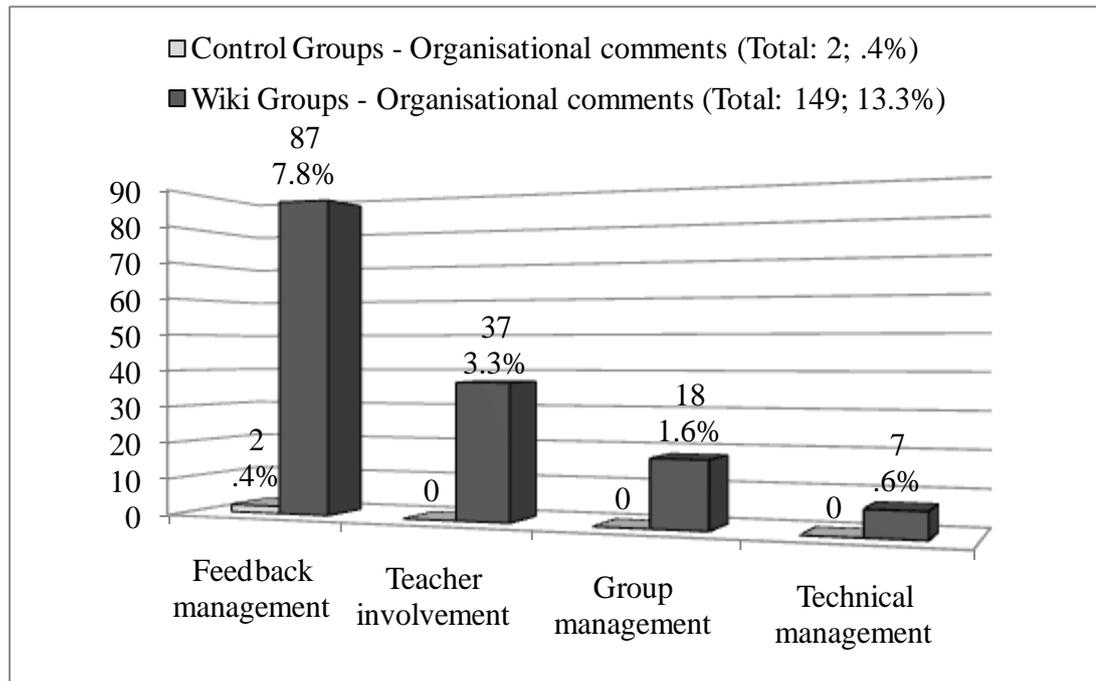


Figure 6.3 Organisational comments coded into emergent subcategories

All of the CMC groups to various extents made use of the wiki environment to control the group feedback process. By reminding the other members to contribute in the peer review process, Nguyen in 0206, for example, directly helped increase the quantity of entries and the quality of peer review in this CMC group. She alone wrote 24, out of 32, comments on feedback management of this group. Examples below show how she repeatedly prompted Anh to add more comments on their work. The second reminder was three days after the first one:

Nguyen, 0206: anh! why u don't comment our writing? i think it's useful for our writing. we must write the final essay, so, u hurry up.  
(19/4/09)

Nguyen, 0206: anh! plz add your comment on final essay!  
(22/4/09)

Similarly, within the same period from 19/4/09 to 22/4/09, Nguyen also keyed in four entries, reminding the other member, Thoa, to add in more comments:

Nguyen, 0206: thoa? why don't you comment my writing ? i think it's good for my writing. it makes my writing better. please comment my writing.  
(19/4/09)

Nguyen, 0206: we are about to write final essay ,so, u should comment our writing.  
(19/4/09)

Nguyen, 0206: we also comment final essay ,so, hurry up.ok?  
(22/4/09)

Nguyen, 0206: plz add your comment on final essay. thanks!  
(22/4/09)

Then on the final essay, a similar situation was seen when Nguyen continuously and even desperately insisted on reminding the other two members to contribute:

Nguyen, 0206: ok, i have added some sentences on our essay. anh, thoa please comment it. thanks!

Nguyen, 0206: oh, i am verry sad. why don't u comment the last essay? i wrote it and.... i corrected it myself. Oh! my god!

The page view count statistics on the wiki later revealed that Nguyen had 102 login times while the number for Anh was 8 and for Thoa, 30. Other CMC groups did have comments on feedback management, but considerably fewer. And some had just one or two, such as 0204, 0209, and 0208 (Table 6.6).

Table 6.6 Organisational comments by subcategory and by group

Group	Feedback management		Teacher involvement		Group management		Technical management		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
0101	2	3.5	0	.0	0	.0	0	.0	2	3.5
0201	5	6.1	0	.0	0	.0	0	.0	5	6.1
0202	9	10.1	7	7.9	2	2.2	1	1.1	19	21.3
0203	11	14.3	6	7.8	5	6.5	0	.0	22	28.6
0204	1	1.6	0	.0	0	.0	0	.0	1	1.6
0206	32	20.0	2	1.3	3	1.9	0	.0	37	23.1
0207	5	4.9	0	.0	1	1.0	0	.0	6	5.9
0208	2	2.3	5	5.7	0	.0	0	.0	7	8.0
0209	1	1.3	0	.0	0	.0	0	.0	1	1.3
0210	21	8.4	17	6.8	7	2.8	6	2.4	51	20.4

Note: Control groups from 0102 to 0112 and CMC group 0205 are not included in the table as they did not have any comments regarding the organisational theme.

In addition to those comments reminding others to contribute, part of the feedback management subcategory included entries indicating feedback or revision added on drafts. Ngan in 0203 indicated twice after giving feedback on Yen's draft:

Ngan, 0203 (4/3/09)      hello. i have some comments to your assignment! i put what i comments in CAPITALIZED LETTERS.

Ngan, 0203: (15/3/09)      there are some little mistakes that i have showed in my last comments.

Also in this group, Yen three days later indicated to the others that she had revised her draft accordingly:

Yen, 0203: (18/3/09)      I've corrected my writing according to your comments. Hope that it is OK now.

Noteworthy among the comments relating to the organisational theme were the 37 entries contributed by the teacher. Similar to those in the discussion process, comments by the teacher during the peer review procedure were mainly to control and to remind students to participate. Examples of these are shown below in group 0202, to encourage contribution, and group 0210, to remind of the use of English:

Teacher, in 0202:      Why is there no single comment from other group members here?

Teacher, in 0210:      Hey guys. Whatever you write, it must be in English please.

The two other subcategories, which had a modest number of comments, were group management and technical management. Two examples below are representatives of the 18 comments coded as group management, generated exclusively by the wiki groups. One indicated the finishing phase of the peer review process, while the other expressed a concern about the due time.

H. Phuong, 0202:      ok, if you have not any comment, I'll edit again and send to our teacher!

Nghia, 0207:      Be quick please. the due date is coming...

Regarding technical management, the general low number of comments of this subcategory demonstrates the fact that the groups were able to function effectively

within the online asynchronous learning setting; and that the use of wiki, as a learning environment, was not so challenging for these groups of learners, whose computer skills were reported to be rather limited. Similar to those in the group management category, comments coded as technical issues were clearly generated by the online groups only. Below are two instances of the mere 7 technical comments. H. Phuong's trouble was that she did not note down the wiki address of her group during the previous class instruction, which delayed her group work. M. Hang, on the other hand, used Vietnamese to express her problem of putting comments in wrong places, though this girl was one of the two most computer proficient students in the CMC class.

H. Phuong, 0202: Sorry, I forgot the web address of our wiki site and couldn't comment your para yesterday at the internet shop.

M. Hang, 0210: quai rua bay, ta comment tren con C kia, ren m ko thay dc he??? (Translated: It's weird. I put comments on Chuyen's draft the other day. How come you couldn't see them???)

In general, it is easy to understand that there was nearly no entry by the control groups coded as organisational because this was not required in the peer review task, and because the traditional pen-and-paper peer review method did not encourage them to add any comments other than those that were directly related to the requirements. The CMC groups, on the other hand, made use of the wiki platform to manage group interaction. There were four subcategories under the organisational theme, namely feedback management, teacher involvement, group management, and technical management, in the order of frequency.

### ***6.3.3 Sociocognitive comments***

The CMC groups had nearly 75% more sociocognitive comments than those produced by the control groups (795 versus 458). This correlates with findings by Liu and Sadler (2003) in their study of the effect and affect of peer review in electronic versus traditional modes on second language writing. Nevertheless, comments in this theme covered up to 96.2% in the control groups, compared to only 71.2% in the CMC groups, due to the latter groups' considerable percentage of comments allocated to the two other themes, i.e. socioaffective and organisational.

These focus-on-task comments were coded into three different criteria. The first criterion was types of comments. Comments were coded into a range of types as presented below. The same sociocognitive comments were then coded into the area of focus: global versus local, as the second criterion. While global comments include those with regard to idea development, essay structure and organisation, and audience and purpose, local feedback covers those relating to grammar structure, wording, punctuation and spelling. The third criterion was the nature of the comments, i.e. whether they were revision-oriented or non-revision-oriented (Liou & Peng, 2009; Liu & Sadler, 2003).

### 6.3.3.1 Types of comments

As illustrated in Figure 6.4 presenting a variety of types according to their focuses, the first and most outstanding were those comments and feedback categorised into the alteration type which accounted for 26.7% of all comments made by the CMC groups (298 out of 1,117).

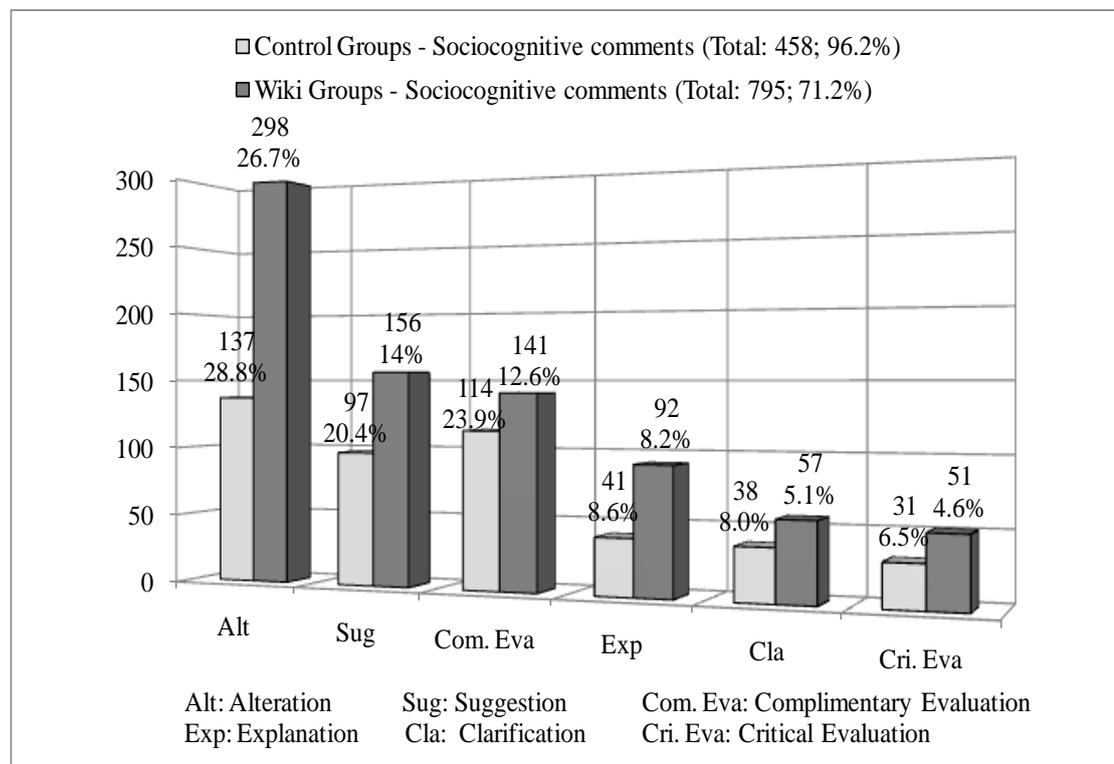


Figure 6.4 Sociocognitive comments coded into emergent types

By definition, comments categorised as alteration are those regarding addition, deletion, and replacement in order to provide specific changes to a draft, such as wording, spelling, punctuation, and other technical and grammatical errors. As mentioned previously, the traditional use of pen-and-paper to exchange comments and feedback limited the number of this type. However, these comments still outnumbered other types in the control groups as it seemed to be the easiest way to give feedback as compared with other more global and abstract components. Alteration comments covered 28.8% of all comments made by the control groups (137 out of 476).

Other than just underlining and correcting on the side of the paper, the CMC groups used various tools provided by the wiki platform to add, delete, and replace text directly on the wiki space. The snapshot below (Figure 6.5) shows how the CMC group 0205 members corrected their peer's draft, by underlining, bolding, colouring, capitalising, bracketing, inserting, deleting and so on. Group 0205 had the highest number of comments related to alteration (55, 42.3%); and numerous examples like this can be seen throughout the 10 wiki sites. It is, however, noted that there is not a spelling and grammar check function, like Microsoft Word's, on PBWiki.

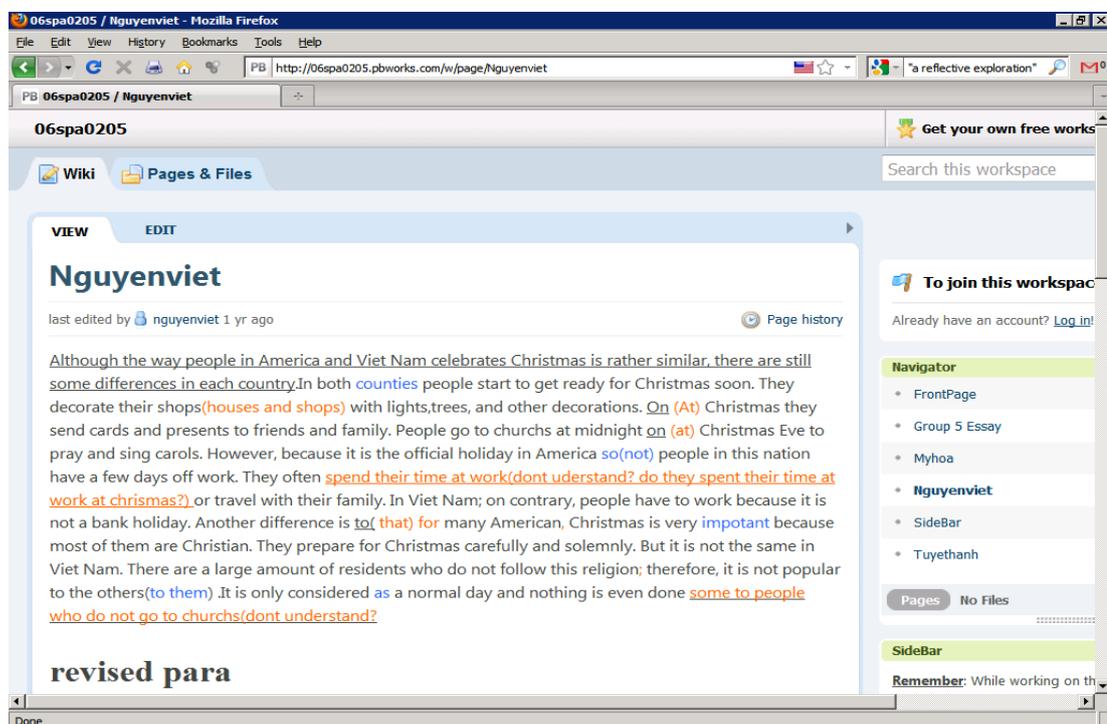


Figure 6.5 A snapshot captured and pasted from the Viet's wiki page

Also as indicated in Table 6.7, the second biggest difference in number between the two modes of peer review was in comments concerning explanation (CMC: 92 versus control: 41). This type of comment usually followed what was evaluated, suggested, and/or responding to other's request for clarification.

Table 6.7 Sociocognitive comments by type and by group

Group	Alteration		Suggestion		Compliment Evaluation		Explanation		Clarification		Critical Evaluation		Total	
	No	%	No	%	No	%	No	%	No	%	No	%	No	%
0101	3	5.2	14	24.1	12	20.7	14	24.1	4	6.9	4	6.9	51	87.9
0102	3	9.1	6	18.2	13	39.4	4	12.1	2	6.1	1	3.0	29	87.9
0103	32	64.0	6	12.0	7	14.0	0	.0	3	6.0	1	2.0	49	98.0
0104	13	27.1	7	14.6	16	33.3	3	6.3	9	18.8	0	.0	48	100
0105	5	16.1	11	35.5	8	25.8	3	9.7	0	.0	2	6.5	29	93.5
0106	24	42.1	6	10.5	8	14.0	6	10.5	7	12.3	4	7.0	55	96.5
0107	16	32.0	7	14.0	15	30.0	3	6.0	4	8.0	4	8.0	49	98.0
0108	28	33.7	17	20.5	15	18.1	7	8.4	7	8.4	8	9.6	82	98.8
0109	10	29.4	6	17.6	14	41.2	1	2.9	1	2.9	2	5.9	34	100
0112	3	9.4	17	53.1	6	18.8	0	.0	1	3.1	5	15.6	32	100
0201	25	30.5	15	18.3	16	19.5	8	9.8	6	7.3	5	6.1	75	91.5
0202	20	22.5	20	22.5	1	1.1	6	6.7	4	4.5	4	4.5	55	61.8
0203	23	29.9	7	9.1	9	11.7	2	2.6	1	1.3	1	1.3	43	55.8
0204	13	20.3	15	23.4	8	12.5	10	15.6	2	3.1	3	4.7	51	79.7
0205	55	42.3	23	17.7	17	13.1	10	7.7	8	6.2	5	3.8	118	90.8
0206	35	21.9	20	12.5	21	13.1	10	6.3	6	3.8	14	8.8	106	66.3
0207	46	45.1	15	14.7	15	14.7	5	4.9	8	7.8	5	4.9	94	92.2
0208	21	24.1	16	18.4	11	12.6	10	11.5	5	5.7	7	8.0	70	80.5
0209	28	36.8	10	13.2	13	17.1	8	10.5	10	13.2	6	7.9	75	98.7
0210	32	12.8	15	6.0	30	12.0	23	9.2	7	2.8	1	0.4	108	43.2

As shown in the example below, Nghia (0207) started her entry with some complimenting evaluations, followed by an explanation for the appraisal, as it was easier for her to recommend correction.

Nghia, 0207: your writing has a clear topic setence which is easy to understand and the tone is very smooth. You don't make so many grammatical errors. Therefore, it is easier for me to recommend correction...

An explanation could even appear as part of the alteration as shown in the snapshot below (Figure 6.6). Nguyen in 0206 deleted the word 'declination' in Thoa's draft, accompanied by the explanation put in the bracket:

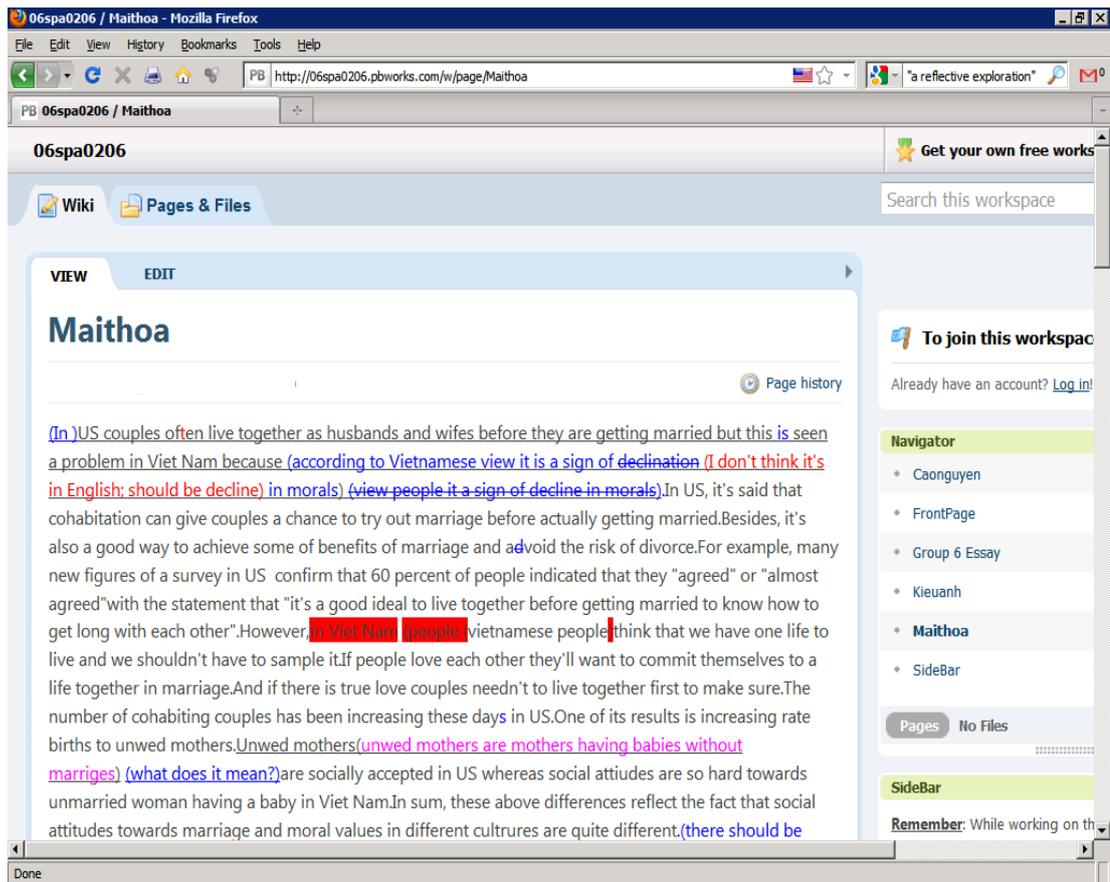


Figure 6.6 A snapshot captured and pasted from the Thoa's wiki page

Explanations responding to clarification requests were, however, exclusive to the CMC groups due to the nature of the multi-way interaction of the wiki-based exchanges. An example of this type of explanation was found in group 0210 when Chuyen, on reviewing the final essay, found that there was an introduction part missing. Phuong, who was in charge of compiling the final essay, explained to Chuyen two days later:

Chuyen, 0210: no introduction or u leave it later?  
(13/3/09)

Phuong, 2010: I didn't know how to write the introduction in an effective way, so I  
(15/3/09) leave it blank, Chuyen.

In particular, explanation comments could trigger instances of negotiation and challenge. Thoa in group 0206, for example, rejected Anh's comments suggesting that she should add more detail in the general organisation of the draft. One day later, Thoa replied, as below:

Anh, 0206: i think that your topic sentence is not good enough! it's should be  
(19/3/09) more general! the best thing is that you showed the reason why the view of cohabitation are quite different between US and VN. in my opinion, you should add more information about the result of this life style

Thoa, 0206: thanks for your comments. however, my paragraph only focus on  
(20/3/09) comparison "the social attitudes toward cohabitation in US and VN" so i think the results is not necessary. and my topic sentence is the first sentence, the last sentence is to summarise for my paragraph.

These exchanges, while rarely seen in the control groups due to the nature of the paper version, were scattered among the wiki sites. The chains of evaluation-explanation, suggestion-explanation, and especially clarification-explanation made the online peer review much more efficient than the traditional method so far as the collaborative community of learning was concerned. These chains, or cycles, of negotiation and scaffolding transferred the intermental plane of social interaction to the intramental plane of thinking in light of Vygotsky's notion of ZPD (1981) and the re-defined CLT's assumptions (cf. section 3.3.1.2).

Comments of the suggestion type came second in number in the CMC groups, accounting for 14%, with 156 comments, while the control had 97 comments of this type, being the third in the rank (see Figure 6.4). Suggestions could be just 'local' grammatical corrections like those made by Phuong (0210) below, or could be more 'global' organisation of the essay like those suggested by Nga in 0204.

Phuong, 0210: First, I think you should replace "they" by "these people" in  
sentence "because they get minimum wage" to avoid causing

confusion and add "their lives" into "rely heavily on tips".

Nga, 0204: we should write the comparison b/w American and Vietnamese life, not the change...

... but I think it's better to divide the paragraph into 2 paragraphs for 2 similar aspects.

Both classes had a comparatively modest number of clarification comments, apart from the outstanding number of 9 in 0104 and 10 in 0209 (see Table 6.7). This indicates their high and shared level of English (in terms of grammar and vocabulary). Similar to comments coded as suggestions, requests for clarification could be either local or global. A comment from Hoa in group 0205 below (Figure 6.7) exemplified a request for clarification at the local level on the use of language, in which she asked the other member, Hanh, to clarify her sentence about what special ways that Americans care about their lover. Meanwhile, Suong (0201), at the global level, requested her friend to elucidate an idea regarding future changes in Vietnamese families. Obviously, requests for clarification enhanced interaction among group members and created opportunities for negotiation and challenge, through which the students could learn from each other via scaffolding.

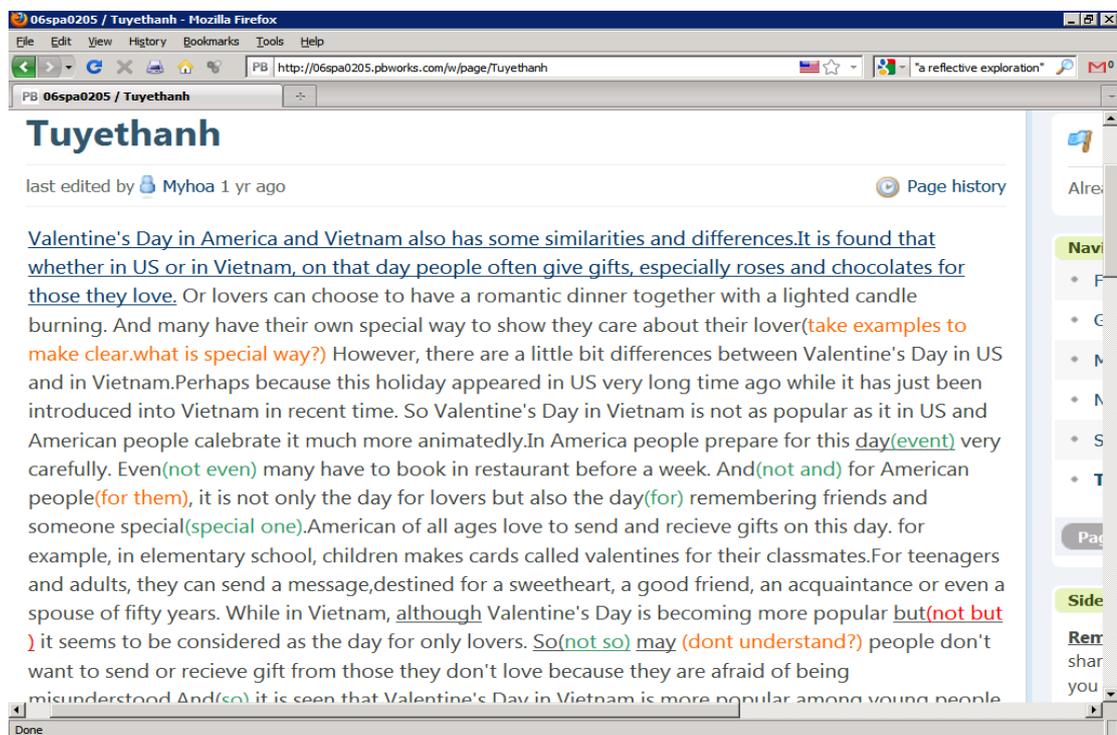


Figure 6.7 A snapshot captured and pasted from the Hanh's wiki page

Suong, 0201: Why you think Vietnamese family will not change sharply in the future?

Finally, the discrepancy in the number of comments concerning the complimenting evaluation and critical evaluation in both classes is worthy of consideration. The CMC groups had 141 complimenting comments, nearly three times as many as those of critical feedback of only 51. Similarly, all 10 control groups had only 31 critical comments, compared to the large number of 114 complimenting remarks. Group 0210 stands out with 30 instances praising their peers' work, while only one critical comment was found. Likewise, there was interestingly no single critical comment found in control group 0104, all of the 16 evaluation instances of which were for accolades (see Table 6.7). CMC group 0206, on the other hand, had 14 (out of 35) derogatory evaluations, being the highest across the board. Nguyen alone made eight critical comments in this group; and these were spread throughout the review period. Below are the critical comments she gave on Anh's draft. At first, she requested for more ideas in the writing as 'it is not enough.' The second comment, which came out 10 days after the first one when Anh had modified her writing accordingly, suggested more coherence. Within a similar pattern, Nguyen went on with commenting on Anh's draft a day later.

Nguyen, 0206: i think your writting has good ideal but it is not enough.  
(8/3/09)

Nguyen, 0206: your writing has a clear topic sentence which is easy to understand  
(18/3/09) for us. that"s good. however, your writing has not coherence.

Nguyen, 0206: anh! i like topic u mention. your topic sentence is clear but it doesn't  
(19/3/09) contain whole setences in your writing especially, the last your essay.do u agree with me?

### *6.3.3.2 Areas of comments*

In terms of the area of focus of the sociocognitive comments, it is revealed in Figure 6.8 that there was a relatively similar number of comments on global (230) and local (228) areas in the control groups. In the CMC groups, a difference, though small, was observed in respect of these two areas, in which there were more local comments than global comments (423 versus 372 respectively, resulting in a ratio of 1.2:1,

compared to 1:1 by the control groups). The exceptionally high number of local comments in the CMC groups was mainly contributed to by the large quantity of comments coded as alteration type as presented previously. Overall, the CMC groups' comment outnumbered the control groups in both areas. These findings justly reflected the nature of the peer review procedure based on the review guidelines, in which the students were asked to cover in their feedback both local grammatical errors and global essay organisation, together with their evaluation of the piece of writing. In addition to these, the convenience of the wiki platform inspired the CMC groups to enter considerably more comments, not only those related to the task but also those regarding social, affective, and logistical issues, as discussed previously.

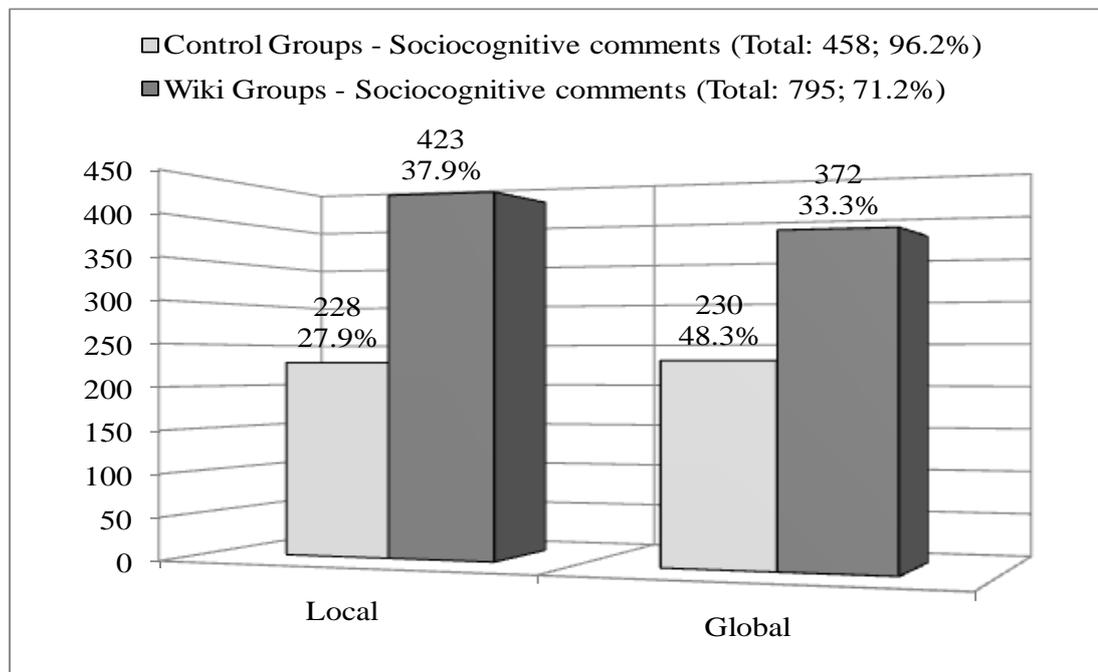


Figure 6.8 Sociocognitive comments coded into areas

Detailed information regarding the areas of comments by each group is presented in Table 6.8. The number of global comments ranged from 15 (0109) to 40 (0108) in the control groups, with the average of 23 comments per group, much smaller than the mean of 37 by the CMC groups, ranging from 15 (0203) to 65 (0206). A clearer discrepancy is seen in the local comments, the average number per group of which was 42 in the online class, nearly double the 23 comments per group in the paper version. The local comment number ranged from as low as 9 in 0102 to 42 by 0108

in the control groups while the CMC groups had a higher level scale from 28 (0203) up to 69 (0205). Individually, Nghia in 0207 created the highest number of 47 local comments, while the record of 28 global comments was keyed in by Phuong in 0210. Both of these students were in the ACMC modality.

Table 6.8 Sociocognitive comments by area and nature and by group

Group	Areas				Total		Nature			
	Local comments		Global comments				Revision-oriented		Non-revision-oriented	
	No.	%	No.	%	No.	%	No.	%	No.	%
0101	18	31.0	33	56.9	51	87.9	25	43.1	26	44.8
0102	9	27.3	20	60.6	29	87.9	12	36.4	17	51.5
0103	32	64.0	17	34.0	49	98.0	42	84.0	7	14.0
0104	28	58.3	20	41.7	48	100	29	60.4	19	39.6
0105	12	38.7	17	54.8	29	93.5	18	58.1	11	35.5
0106	36	63.2	19	33.3	55	96.5	41	71.9	14	24.6
0107	22	44.0	27	54.0	49	98.0	31	62.0	18	36.0
0108	42	50.6	40	48.2	82	98.8	60	72.3	22	26.5
0109	19	55.9	15	44.1	34	100	19	55.9	15	44.1
0112	10	31.3	22	68.8	32	100	26	81.3	6	18.8
0201	28	34.1	47	57.3	75	91.5	51	62.2	24	29.3
0202	36	40.4	19	21.3	55	61.8	48	53.9	7	7.9
0203	28	36.4	15	19.5	43	55.8	32	41.6	11	14.3
0204	29	45.3	22	34.4	51	79.7	33	51.6	18	28.1
0205	69	53.1	49	37.7	118	90.8	91	70.0	27	20.8
0206	41	25.6	65	40.6	106	66.3	75	46.9	31	19.4
0207	64	62.7	30	29.4	94	92.2	74	72.5	20	19.6
0208	33	37.9	37	42.5	70	80.5	49	56.3	21	24.1
0209	44	57.9	31	40.8	75	98.7	54	71.1	21	27.6
0210	51	20.4	57	22.8	108	43.2	55	22.0	53	21.2

### 6.3.3.3 Nature of comments

The last criterion for the classification of the sociocognitive comments was their nature, i.e. revision-oriented or non-revision-oriented. As discussed in the methodology chapter, the nature of the sociocognitive comments was decided by dividing the comment types into two groups (cf. section 4.4.3). The revision-oriented group included comments categorised as alteration, suggestion, and critical

evaluation, while the non-revision-oriented group consist of those comments coded as clarification, explanation, and complimenting evaluation. Both modes of the peer review process produced a considerably higher number of revision-oriented comments than of non-revision-oriented (Figure 6.9). More clearly, there were 2.5 times as many revision-oriented as non-revision-oriented comments in the CMC groups, while this ratio in the control groups was nearly 2.0. This signifies that the wiki-based peer review was more effective than the traditional pen-and-paper method in terms of generating revision-initiated comments.

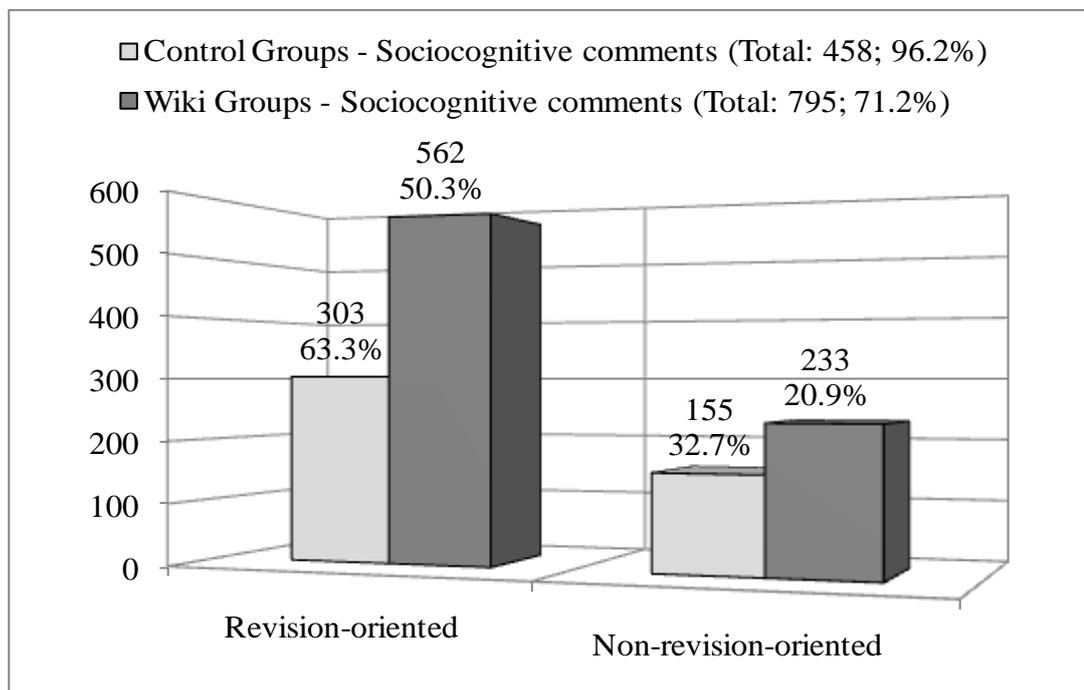


Figure 6.9 Sociocognitive comments coded by nature

A comparison between the two modes within each category reveals that there was a smaller difference between the CMC groups (233) and the control groups (155) in non-revision-oriented comments. Nevertheless, the number of revision-oriented comments by the CMC groups was nearly double that of the control groups, with 562 versus 303. On looking at the comment types, it can be inferred that the evidently high quantity of revision-oriented comments in the CMC groups was due to the large number of alteration comments made by these online members. The finding can be confirmed by the information provided in Table 6.8. CMC group 0205 stands out with 91 comments coded as revision-oriented, 55 of which were alteration. Similarly, but at the lower end of the scale, group 0108 dominated the control groups with 60

revision-oriented comments, half of which were sorted as alteration. In addition, all of the 10 CMC groups had more revision-oriented than non-revision-oriented comments, while two of the control groups had nearly equal or more non-revision-oriented (0101 and 0102). The highest ratio of 7:1 belonged to the CMC group 0202, who had 48 revision-oriented comments, compared to only seven non-revision-oriented.

#### **6.4 Summary**

The first level of analysis of participants' contributions in the peer review process indicated that the CMC class produced a considerably larger number of comments than those made by the control groups. A similar conclusion can be drawn in terms of individual contributions, in which CMC members generated a significantly higher number of comments than those contributed by paper-based members. The second level of analysis showed that online comments substantially outnumbered those generated in the traditional method of peer review in all three themes of collaborative learning. While there was a dearth of comments related to the socioaffective and organisational themes in the 10 control groups, these social, emotional, and logistical comments accounted for a considerable portion throughout the 10 wiki-based groups. Hence, the two modes of peer review illustrated a high concentration on task, reflected in the dominant percentage of sociocognitive comments. Still, there were significantly more cognitive comments produced by the online groups than the paper version in all three criteria, namely types, areas, and nature. Above all, the multi-way interactive feature of Web 2.0 facilitated a large number of comments that could hardly be seen in the paper version of peer review.

## **CHAPTER SEVEN: FINAL COLLABORATIVE PRODUCTS**

### **7.1 Overview**

This chapter aims to analyse and discuss the final collaborative products including 20 essays from the 20 groups of the two classes. The first section is the discussion of the level of idea synthesis of the two modes. This is followed by the quantitative analysis and then the qualitative interpretation of the collaborative essays. Overall, the purpose is to answer the third research question regarding the improvement in English language competence resulting from online collaborative practices as compared to traditional methods of learning.

### **7.2 Synthesis of Information**

The discussion and peer review processes were followed by completing an essay as the final collaborative product. This was a process of compiling the three members' drafts, having been revised by the respective authors, into a single essay. The compilation was however different between the two modes of learning. This stage of the collaborative process further proves that the mediator used to complete the task inexorably influences the task quality itself (Warschauer, 1998). While it was feasible to examine the actual revisions made on second paper drafts, by comparing an original draft and its revised version in order to single out differences (e.g., Liou & Peng, 2009; Liu & Sadler, 2003), this type of examination was impossible on the wiki sites. Unlike drafts in the paper format, a piece of writing on the wiki could be revised by any group member who made use of the editing functions to modify directly on the draft. In other words, in the control group, it was the originator of the first draft who revised his/her own work before handing it in to the group leader who was in charge of compiling the final essay. In contrast, the last draft on the wiki, though initially written by a member, was a collaborative process of revision contributed to by the whole group inextricably, which made the matter of individual

authorship opaque. The separation of work at this stage seemed to be impossible on the wiki sites, thereby signifying a positive level of synthesis of information.

It can therefore be seen that the paper-based final essays, by nature, resulted from the combination of the three drafts together. Other than this combining procedure, the wiki-based essays resulted from a process of synthesising the three drafts, revised by all members. In addition, the online final product was later edited several times by the respective group members. This additional procedure could hardly be done on paper when the completed version of the essays had been prepared. The piece of writing in the wiki was on the other hand never a finished product. Rather, working on the wiki was seen, as in Lamb's (2004) review, as part of a flowing, vigorous, and collaborative process. In sum, the different nature of the two modes of learning results in different levels of synthesis of information, which was much higher in the online essays than in paper-based work. This consequently partly explains the different levels of collaboration, in which the traditional paper products were more at the cooperative end while the wiki-based work was more at the collaborative end on the continuum (cf. section 3.3.2.1).

### **7.3 Quantitative Analysis**

The quantitative analysis below presents the writing performance in the three linguistic areas (see Table 7.1), i.e. syntactic complexity, lexical complexity, and grammatical accuracy. It is firstly noted that the independent samples *t*-test run for each of the variables in the table indicated no statistically significant difference between the two sets of writing, i.e. 10 paper essays and 10 CMC essays.

Regarding the syntactic complexity, the mean scores of total words and total sentences were higher in the CMC essays, while the mean score of sentence length was similar in both versions. This indicates that the wiki environment facilitated the writing of longer essays than those from the control groups (Mean: 609 versus Mean: 487 respectively). A detailed look at the 20 essays (Appendix X) reveals that there were two groups (0201 and 0205) from the CMC class which composed up to nearly 1,000 words each while the required length was only around 300 words. However, there was no statistical significance regarding difference in sentence length. The CMC sentences were approximately as long as the control's (Mean: 17.30 versus

Mean: 17.50 respectively). Nonetheless, the larger standard deviation for the control essays (4.50), as compared to the CMC's essays (1.57) suggests greater variations between paper-based texts.

Table 7.1 Final essays: *T*-test analysis

	Control Class		CMC Class		<i>t</i>	<i>p</i> *
	(n=10)		(n=10)			
	Mean	S. D.	Mean	S. D.		
<b>Syntactic Complexity</b>						
Total words	487.60	114.31	609.30	183.21	-1.78	.095
Total sentences	28.10	8.76	34.60	9.51	-1.59	.130
Sentence length	17.50	4.50	17.30	1.57	.13	.897
<b>Lexical Complexity</b>						
Lexical diversity	66.97	1.46	67.28	2.01	-.40	.698
Lexical density	67.49	1.37	67.41	1.91	-.10	.922
<b>Grammatical Accuracy</b>						
Grammatical errors / total sentences	.31	.24	.37	.13	-.70	.498
Types of errors / total sentences	.14	.09	.13	.03	.26	.798

\* Significant at  $p < .05$ .

As for lexical complexity, no significant differences were found between the two sets in either lexical diversity or lexical density. However, the descriptive statistics showed that the lexical diversity of the CMC essays (mean = 67.28) was slightly higher than that of the paper-based texts (mean = 66.97), indicating that the CMC groups used a moderately greater variety of vocabulary than did the control groups.

With regard to grammatical accuracy, various types of grammatical errors were identified in the 20 essays, including errors in subject-verb agreement, use of modifiers, spelling, colloquial language, object of verb, verb form, incomplete sentence, pronoun, noun phrase, and number style. Though neither class made a significant number of mistakes, the analysis indicated that the CMC groups seemed

to make more errors per sentence than did the control groups (.37 versus .31). However, most of the errors made by the CMC groups interestingly were technical spelling (63 out of 129 errors in 10 essays). It is important to remember that the PBWiki, at the time of conducting the current research, did not have a spelling and grammar check function like those in Microsoft Word. While the students were accustomed to writing on paper, typing on computers might, to a certain extent, influence the text quality, specifically such as technical spelling and space use. This finding in turn supports the second measurement of grammatical accuracy, i.e. types of errors per sentence, in which more types of errors were found in the control essays than in the CMC essays.

#### **7.4 Qualitative Analysis**

Another dimension of analysis was conducted, based on results from essay markings. The 20 essays were marked separately by the researcher and an EAP lecturer at Massey University. It is noted that the Massey assessor was unaware of the groupings which were arranged by the researcher. Both raters followed the three criteria, namely content and idea development, organisation and structure, and use of language. The two sets of results were then compared and matched. Any differences were considered and ironed out to attain the final grades shown in Table 7.2. It was the researcher's responsibility to conduct the comparison of the results, with reference with the Massey EAP lecturer. The rating was presented on the 10-point evaluation scheme as formally used in the Vietnamese educational system.

In terms of content and idea development, CMC students had more advantages as they got access to the Internet, searching for and collecting much more information related to their essay topic. The researcher's observation confirmed this because the CMC students kept mentioning the use of search engines, such as Google and Yahoo, throughout the course as the main source of references, even more popular than the course material. More importantly, the online essays had a higher level of information synthesis thanks to the collaborative nature of the wiki as discussed previously. In addition, the sense of audience made them use more appropriate ideas in the essays. All three reasons demonstrated the fact that the CMC essays were better regarding levels of relevance, development, and complexity of ideas. Most of

the ideas were thoughtfully developed in detail and elaborated beyond the basic or simple bald statements, with strong arguments and explanations as well as examples suggesting background causes. Notably, a further explanation for the copious ideas in the CMC essays was that a substantial number were generated from the chat discussion and peer review processes.

Table 7.2 Qualitative scores for essays

Group	Content	Organisation and structure	Use of language	Overall grade
0101	8.50	9.00	8.50	8.50
0102	9.00	9.50	9.00	9.00
0103	8.00	7.00	8.00	7.50
0104	8.00	8.50	8.50	8.00
0105	7.50	8.00	6.50	7.00
0106	8.00	8.00	9.00	8.50
0107	10.00	10.00	9.00	10.00
0108	9.50	9.00	9.50	9.00
0109	7.00	7.50	8.50	7.50
0112	7.50	7.50	7.50	7.50
Average	8.20	8.40	8.50	8.25
0201	9.50	8.00	8.00	9.00
0202	8.00	8.00	7.50	7.50
0203	9.50	6.50	9.00	8.00
0204	8.00	7.50	8.00	7.50
0205	8.00	8.00	8.00	8.00
0206	8.50	6.50	9.00	8.50
0207	8.50	8.00	9.00	8.50
0208	9.00	7.50	8.50	8.00
0209	9.00	8.00	8.50	9.00
0210	9.50	10.00	10.00	10.00
Average	8.75	7.80	8.55	8.40

An example below (Excerpt 7.1) shows how the CMC group 0210 drew an idea from their group chat for the final essay. This idea was not found in the reading material.

Excerpt 7.1 (0210):

187 Phuong: how about tips?  
 188 M. Hang: in restaurant?  
 189 Phuong: i mean the money you gave to waiter, for ex, if he serves you

- well
- 190 Phuong: not only in restaurant
- 191 M. Hang: i c
- 192 Phuong: in hair salon
- 193 Chuyen: it mean genreous??
- 194 Phuong: no no
- 195 M. Hang: in VN we dont have this kind, is it right?
- 196 Phuong: I just want to say that
- 197 Phuong: ame have a habit of leaving tip for good service

A snapshot of part of group 0210's essay captured from the wiki site:

Another difference between American lifestyle and Vietnam one is that the American have a habit of leaving tips while this is not popular in Vietnam. Tip is extra money given to people who serve in restaurants, hair salons, hotels, etc. American people leave tips to express their thanks and politeness to those who serve them well. Also, they think it is a small way to help servers out because these people get below minimum wage and rely mainly on tips. Unlikely, Vietnamese people don't get used to leaving tip. Most of services calculated ten percent of the transaction value and servers have their suitable amount of wage. Therefore, leaving tips is considered not natural in Vietnam.

The paper essays, on the other hand, were more limited in terms of content and idea development. Most of the ideas were basically taken from the course reading material, as the main source of references. In addition, a cooperative, rather than collaborative, learning approach was taken, resulting in a lower level of information synthesis, evident in these paper essays. Ideas, most of which looked naïve and cursory, according to the EAP lecturer, were stated and combined piece by piece, rather than explained, developed, and intermingled like those in most of the CMC essays. Quite often, in evaluation sheets of the paper essays, comments like this were seen, “the coherence of the second sentence is in sharp contrast to many others which are sophisticated and very likely borrowed.” Explanations for ideas were also quite often not attempted, leaving ideas just listed, rather than argued. Moreover, the limited sense of audience was evident in some of the paper essays. For example, no explanation was given to ‘banh chung’, a Vietnamese traditional rice cake served during Tet, or Lunar New Year, in the example below. This might be because the authors assumed the audience was Vietnamese only.

A snapshot of part of group 0102's essay:

New Year's Eve. Viet Nam is known as a country of cultural traditions, therefore, there are a lot of interesting customs around the Tet holidays, such as wrapping Banh Chung to offer their ancestor, having Tat Nien meal and so on. Although every country welcomes the New Year following various ways, it all expresses people's hopes about a more lucky and successful year.

Though abundant in ideas, the online essay organisation and structure were scored lower than the paper essays. This may have been due to the impact of the new writing environment, letting the CMC students slightly slide away from the academic setting (as discussed in section 8.3). These students thought that the online learning environment was less formal than the traditional classroom. For many of them, CMC is “the form of learning and playing at the same time” (Thang, Group 0208). This thinking was unfortunately reflected quite clearly in the way they jointly composed the essay. In addition, the process of typing words, rather than writing on paper, which they were used to, also heavily affected the quality of essay organisation as well as structure in a negative manner. A lack of coherence, cohesion, and ordering of ideas and information could therefore be seen throughout the CMC essays. Comments from the two raters on these online essays noted partial attempts to give coherence, cohesion within paragraphs not particularly well managed, and connections of ideas not built up, among many others regarding the organisation and structure criteria. The paper essays, on the other hand, were slightly better in terms of these criteria. Most of the paper essays established an appropriate structure with good introduction and conclusion as well as proper use of transition words.

As far as the use of language was concerned, both modes of composing attained a similar level of language usage. General evaluations included good basic language and structure with some multi-clause sentences and nice turns of phrases achieved very well, striving to use appropriate vocabulary beyond the basics, but not always in control of how to use it effectively, and in general language use able to convey meaning. However, scattered throughout was some inappropriate use of vocabulary, which was either obscure or imprecise or faltering, together with some basic errors in grammar. Especially, some suspicion of plagiarism was raised regarding the use of language though no hard evidence was found by either rater. Yet, as far as

comparison was needed, vocabulary in the CMC essays was better than paper essays while the latter was better in grammar.

In summary, the quantitative analysis reveals no significantly statistical differences between the two sets of essays in all comparable variables: syntactic complexity, lexical complexity, and grammatical accuracy. However, results of qualitative examination of the writings indicate that online essays are better in idea development, but worse in essay organisation. Both sets of writing share similar levels of language use.

## **CHAPTER EIGHT: PERCEPTIONS AND REFLECTIONS**

### **8.1 Overview**

This last chapter of the results analysis aims to examine the participants' reflections on and perceptions of the application of CMC, both synchronous and asynchronous. Data for analysis included the questionnaire, consisting of the 24 4-point Likert scale items (Appendix Y), appended with the six open-ended questions, and the interview transcripts of 14, out of 30, students from the CMC class who volunteered to participate in the informal interviews. It is necessary to explain that a one-sample two-tailed *t*-test, with the hypothetical mean score of 2.5 and the confident interval of 95%, was run for each of the 24 Likert scale items in order to frame the analysis of this section. Overall, the section deals with the fourth research question concerning the students' perceptions of and reflections on the application of CMCL to the learning process in the EFL classroom.

### **8.2 The CMC Class**

Regarding the very first item of the questionnaire, asking the participants to give a brief description of the CMC class, 23 (76.7%) students agreed that they liked learning with computers, not to mention the other seven (23.3%) students who strongly agreed with this point. In general, no negative attitude relating to the use of computer in learning English was found. In addition to this, half of the students who attended the post-project interviews, described this CMC class as new, strange, modern, motivating, and interesting, among many other positive adjectives, as compared with what they felt were boring and insipid traditional, teacher-fronted classes. General evaluations like "It's lucky for me to be in CMC class. I like the way of chatting much more than that of recording. The other class must be really jealous

of us 🌐”<sup>1</sup> (Phuong, 2010) were quite common in interview scripts and comments on the researcher's blog. Similarly, Yen, whose self-evaluated computer skills were poor, shared her feelings when comparing this CMC class with previous traditional ones, for example:

Here in this class ... I think it is more effective because many students could participate at the same time, not like in the previous classes where teachers could not ask all students to speak at the same time. (Yen, 0203)

Nga (0204), though rather weak in working with computers as reported in the pre-project questionnaire, added that: “as being the first time of learning in this technology-rich type of class, I could gather many new things ... and it was more enjoyable than previous courses”.

Ngan, the most participating member in the same group as Yen, profoundly contributed her ideas, including the equalised participation level of other classmates and the necessity and significance of developing interactive competence through writing, like this:

In this CMC class, I feel that classmates could share their ideas more equally (than traditional classes) due to its minimising the language barrier ... because many did not feel confident when discussing face-to-face. (Ngan, 0203)

This student, currently having a part-time job as an English tutor, expressed herself as “more active. I could follow this course anywhere, not necessary to attend classes like in other courses”.

Phuong was among the few students from Danang city, who used computers every day for learning but mainly entertainment. Her self-evaluated computer and typing skills were highly competent. In addition, she was the best student of the course with the highest accumulated GPA of 8.75. This most active member of group 0210, who had moved to the United States to further her study by the end of this course,

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<sup>1</sup> Quotes in Vietnamese are translated English. Quotes in English are entered verbatim.

described in her email interview with the researcher the study environment as open, pressure-free, and independent. It is noted that Phuong had the most instances of socioaffective exchanges, sliding away from the main tasks in both the synchronous chat and the asynchronous wiki. She explained in English as below:

It is an open study environment. It encourages students to freely and equally contribute their ideas when they work in a group. ... Students don't feel pressure of being observed by their teacher when in chat room as well as in wiki. Moreover, students are more interested in their study because they can use the social network, which used to be considered as a pastime, in their study. It somehow helps to decrease the pressure from common classes. Additionally, this kind of class requires students to work independently, and they also have to keep themselves updated with group work, which makes them more responsible. (Phuong, 0210)

Furthermore, many students also expressed that what they liked most about the CMC class was being free to share ideas, which they found it difficult to do during normal class time. Others simply replied that they liked it because they were able to use computers in class, such as Phuong below:

What I like most about CMC class is the fact that I have chance to use computer in my study, and everyone can contribute their ideas at the same time. Comparing with common classes, CMC class gives more chances for all students to give their opinions to group work rather than only a few individuals. (Phuong, 0210)

Furthermore, Chuyen (0210), among some others, truthfully answered that she at first did not understand or figure out what she would do in this course with a bundle of computer and Internet bits and pieces, including Yahoo! chat, LCD projector, PBWiki, YouTube, Google, and so on. However, things became brighter and brighter day by day when she was working with and learning from group members. This illustrates Vygotsky's ZPD, expressing the potential of what a learner can achieve with support from the more experienced.

The students however raised several cautions and disadvantages about the use of technology in a language class. Right at this first item of the questionnaire, two students expressed their doubt about the effectiveness of the CMC application before

calling for more control and regulation from the class teacher, as they noticed that some other students made use of the computers to do 'something else' instead of focusing on the required task. More information about these challenges was found in the fourth interview question, asking them to broach anything they did not like about the course. Most of the students interviewed, 12 out of 14 in fact, touched upon technical issues, which matched the researcher's observation that the exchange process was sometimes delayed because of problems from either the Internet or the computers in the lab. In addition, there were 5 students who blamed their limited computer knowledge, which inevitably affected the interaction process. The comments below are representative of the complaints:

What I don't like may be the awful lab computers. Other than that, I prefer this way of learning. (Ngan, 0203)

Sometimes ... for example, you [the teacher] first instructed us to get into wiki, which I found really complicated, difficult to remember. I had to ask the other classmate for help. (Yen, 0203)

What I don't like .... is my computer skills. When learning with technology like this, these skills were very important. It was not easy to follow the teacher's instruction. I wish I would have learned these skills before taking this course. (Nguyen, 0206)

One student critically complained that it was a waste of time learning with technology, explaining that she would have finished the work on paper much sooner than on the wiki, especially since she had to work with other people. This student seemed not to favour the group learning style.

In general, the vast majority of the students responded positively ( $M = 3.23$ ,  $SD = .43$ ,  $t = 9.34$ ,  $p < .01$ ) to the first post-project questionnaire item, asking if they liked learning English with computers. This indicates that while there were some technical obstacles that needed to be considered, the advantages that technology brought about outweighed those shortcomings.

### **8.3 Synchronous Chat**

Table 8.1 presents the students' perceptions of the synchronous chat. The most outstanding aspect observed from the figures was the number of 13 (43.3%) students

who strongly agreed that they felt more confident in sharing their ideas in the chat groups (item 4). Another 14 students agreed with this item. Overall then, 27, out of 30, students perceived that SCMC environment created more self-assurance among the participants ( $M = 3.33$ ,  $SD = .66$ ,  $t = 6.91$ ,  $p < .01$ ). Explanations for this confidence which emerged in the interviews were that many students saw the chat discussion as creating a more pleasant and comfortable environment than the face-to-face exchanges, thereby motivating them to participate more.

Table 8.1 Students' perceptions of chat (n=30)

Item	Mean	S.D.	<i>t</i>	<i>p</i> *
2. I enjoyed that chat discussion with my group members.	3.03	.49	5.96	.000
3. The chat discussion generated plenty of ideas.	2.90	.61	3.61	.001
4. I felt more confident in sharing my ideas in the chat group.	3.33	.66	6.91	.000
5. Members' contributions during the chat discussion are equal.	2.90	.66	3.31	.002

\* Significant at  $p < .01$

As for Tam, a student from the provincial region of Nghe An, not being good at either computer or language skills, the absence of facial expressions and other general social, non-verbal cues in the online synchronous exchange motivated and increased her involvement, thereby liberating this more marginal member. Below is what she shared in the interview:

Tam: ... yeah. I could share my ideas in the group in a pleasure way, feeling very comfortably natural, without being shy at all.

Researcher: Don't you feel natural in face-to-face discussions?

Tam: Uhm, I feel afraid of contributing what I'm not 100% sure in the face-to-face exchange.  
(Tam, 0202)

Within exactly the same flow of thinking, Thuy (0207), another provincial student, voiced her opinions, comparing the two modes:

Thuy: I usually can't talk in face-to-face. I'm afraid that I can't make myself clear enough. I didn't have such feelings on this [SCMC]. I could type my thoughts on that. I can rarely share my ideas face-to-face. I rarely talk. This [SCMC] created my self-confidence in sharing ideas among the group more easily.

Researcher: You said you can't share in face-to-face, why not?

Thuy: I don't know. Maybe because I'm afraid, maybe I lack confidence when talking with friends, and my vocabulary is insufficient. I have ideas, but I wonder if what I'm going to share will be agreed with, or if my pronunciation can be understood. I feel I'd better keep listening. This [SCMC] facilitates me much more.

(Thuy, 0207)

Likewise, Hang (0201) explained that she could participate more in the chat because she found it difficult to defend her views against opposite opinions raised by other members even though she tried desperately sometimes. In other words, she usually had "to make concessions" in such FTF situations. By contrast, she was just able to type her opinions at the same time with others on the chat window, thereby creating opportunities for her to share her ideas among the group regardless of her friends "accepting them or not", said Hang. Moreover, Dzung (09) agreed with Thang (08), one of the only two male students in the class, that the chat discussion created more intimacy because it is "the form of learning and playing at the same time" (Thang, 08). In other words, SCMC affords a ludic approach to learning.

There was a causal relationship between item 5 and item 3 in the table above. An equal number of students (23, 77%) agreed and strongly agreed that the chat discussion equalised members' contributions and thus generated plenty of ideas during the discussion. Sharing with Ngan's reply that she could "talk" much more in the chat, Yen (0203) explained that "everyone had opportunities to talk; everyone shared equal amount of talk; everyone feels that they must talk."

What is more, there were at least three students who interestingly claimed their most preferred attribute in the chat was that they could roll back and review what was just discussed by the group, thereby helping increase their monitoring of language usage (Sykes, 2005) and "make language manipulable" (O'Rourke, 2008, p. 232). Some other students commented on the feature of place and time independence of the SCMC (Luppacini, 2007; Warschauer, 1997). Phuong, being sick on the day of her

group's discussion, had to stay home and conducted the discussion task with her friends from a distance. Her comment below highlights the students' perceptions of SCMC regarding place as well as time independence:

In the chat discussion section, what I like most is that I can still contact with my partners without being with them [physically]. It also saves time spent on travelling to the meeting place. All I have to do is to be online on time to chat with my partners. (Phuong, 0210)

Nevertheless, there were up to eight students who did not agree that the contribution among members was equal. Four of them explained in the interviews that it was because some members did not study the learning material beforehand, so they did not have much to share. Some others had very limited typing skills, which delayed the discussion flow and they were therefore interrupted by other members who typed faster. An interesting finding was that those students who were proficient in both computer and language skills disagreed about the equality in group contribution because of the restricted involvement from less proficient students. Ngan complained in the interview:

Researcher: Can you clarify this point that you did not agree with the equal contribution among the group members?

Ngan: As you required that everyone should argue for the selection of the essay topic, I felt that only me and Binh discuss, not Yen.

Researcher: Why do you think this happen?

Ngan: Uhm, maybe she was easy-going, just let it go; or maybe she was not confident enough to share hers.  
(Ngan, 0203)

The less proficient, on the other hand, supported item 5 above, as noted in Yen's comment above expressing her perception that the participation was roughly equal among the three members of the group.

A review of this group's discussion transcript shows that Yen was second after Ngan in terms of the level of participation, while Binh was the least contributing member. An explanation for this difference in perceptions of equality might be due to individual expectations. In other words, the more active members expected more

participation from the less contributing members, who in turn felt that their contribution was satisfactory enough.

Finally, as far as the quality of the conversation was concerned, a few students mentioned SCMC as a barrier to idea generation. These students complained that their ideas were usually cut into pieces by interrupting turns. Sometimes these ideas could never be completed as the discussion had gone down another route. Sometimes ideas typed in the composing window had to be deleted and replaced with a new one in order to follow the discussion flow. V. Hang (0208) shared her concern:

V. Hang: Sometimes I had a certain idea ... rather long. I was typing ... not finished yet. I hadn't completed my idea. The other member typed in a message, then adding more turns. I couldn't keep my idea on. It means the discussion was being diverted to another direction, while my original idea was suspended.

Researcher: How about the face-to-face?

V. Hang: I think I would shout to drown others' voices to continue my ideas in a face-to-face meeting.

...

V. Hang: Another time, I just waited until the other's ideas finished so that I could continue mine ... but when it was my turn, I forgot what I was going to say.

(V. Hang, 0208)

Another student also discussed this challenge, stating what she disliked most was that she could not type long ideas as they were often interrupted by other members' opinions. This is however not a shortcoming as far as equal participation were concerned in this collaborative learning environment. This is what she said:

In fact, I like the application of technology into class. But I see that when in chat I wanted to write a long idea, another mate disrupted it with a similar idea. (Dzung, 0209)

In general, the students had affirmative perceptions of the use of chat as a means of discussion. Most felt that the participation level was approximately equal across the groups. One of the reasons for this was that whereas other members must spend most of the time listening while one was talking in FTF discussion, three members in the SCMC discussion could express their ideas at the same time. Another reason was the lack of facial expressions motivated and increased participation from those students

with less language proficiency, who often felt shy and reluctant to share ideas in FTF exchanges. This therefore promoted a higher level of interaction among group members, which in turn increased motivation for learning and negotiation of meaning (Yamada & Akahori, 2007). In addition, the technical features, such as scrolling back and place/time independence, of the online synchronous discussion also drew the students' attention with encouraging reflections. SCMC has potential to be a major mediator in social systems of constructing knowledge and sharing experiences through interaction (Vygotsky, 1981).

#### 8.4 Asynchronous Wiki

In terms of the collaborative peer review procedure, all of the students concurred with the questionnaire item 9 (Table 8.2), asking them if they learned much from their classmates' comments.

Table 8.2 Students' perceptions of wiki (n=30)

Item	Mean	S.D.	<i>t</i>	<i>p</i> *
6. I enjoyed the wiki peer exchanges.	3.33	.61	7.53	.000
7. It is easy to work on the Wiki.	3.17	.65	5.64	.000
8. The wiki peer comments helped me revise my draft.	3.23	.57	7.07	.000
9. I learned much from my classmates' comments.	3.20	.41	9.42	.000
10. Wiki helped me write more than traditional class.	2.93	.70	3.43	.002

\* Significant at  $p < .01$

More specifically, 24 (80%) students agreed and 6 (20%) strongly agreed with the item, reflecting the fact that the wiki did assist in the collaborative learning through the process of peer review ( $M = 3.20$ ,  $SD = .41$ ,  $t = 9.42$ ,  $p < .01$ ). This high level of response as regards the general evaluation of other members' contribution was not so surprising considering the Vietnamese style of collaboration, in which harmony and

unity are the priorities. In other words, these Vietnamese students tended to accept comments and feedback from others. Yet, whether they revised later accordingly was another issue.

As far as the learning benefits were concerned, 28 students expressed their enjoyment of the wiki peer exchanges (item 6) and the effectiveness of this online environment (item 8). Most of these learning benefits resulted from the technological advantages of the wiki platform since up to 26 (87%) students agreed that the wiki environment was not so challenging (item 7). Additionally, learning benefits were evidently perceived since 22 (73%) students agreed that the wiki helped them write more than in traditional classes (item 10).

These perceptions of the usefulness of the wiki were positively triangulated with information from the interviews, during which many students expressed their satisfaction by pointing out the user-friendly functionalities of PBWiki, such as the ease of editing and commenting, the archive and history review facilities, and the capabilities of multiple review procedure. These technically easy-to-use functions in turn had helped generate a large number of comments. Like several other students, Tam in 0202 shared her view when being asked what she liked most about the wiki below:

Researcher: What do like most about working on wiki?

Tam: On wiki ... we could exchange and help each other through comments.

Researcher: But, you can still comment on paper. What do you think of the differences?

Tam: Working on the wiki was more motivating. We could have many more comments on wiki. I gave comments to others, then the others gave feedback on mine; then I commented again ... continuously. It was hard to do this on paper.  
(Tam, 0202)

Like Tam, Yen (0203) highlighted the convenience of using wiki by sharing her ideas about the benefits she gained through peer feedback:

It was more convenient working on the wiki. I only needed to click on the edit button. In addition, I could see more more comments from friends. It was a waste of time doing something like these on paper. (Yen, 0203)

On top of the learning and technological benefits like many other students, Phuong (0210) added some affective outcomes that could be gained from the peer feedback process on the wiki. She explained below that she could sometimes delete a comment that she felt incorrect or that might hurt others' feelings; and replace it with a more suitable one.

In wiki peer exchange section, I like being able to share ideas with my partners every time I want and feel free to give them my comments without worrying that I am hurting their feelings. It is because I can think carefully and choose appropriate words before I type them down. More than that, I can delete previous comments and replace them with more suitable ones. (Phuong, 0210)

In addition, for Thang (0208), the most useful part of the wiki was simply that the writing was read, commented on and corrected by more people, as opposed to his previous writings being corrected only by the teacher. Writing on the wiki was different, which made him feel "I've published something." In other words, he wrote not only for the sake of learning; he wrote to communicate. Also from this point of writing with a sense of audience, Tam (0202) felt that she had to be more responsible for her writing, trying to make it as "smooth as I could since other people would be reading it. It is different when I write for myself".

However, looking from the other side of the issue, traces of problems were found during the interviews when two students expressed their indifference to the application of the wiki chiefly because of technical issues. Anh in 0206, for example, responded that while she liked the chat discussion very much, she felt:

It was fatiguing and inconvenient to edit on the wiki because I had to go to the Internet shop each time. It was more difficult to correct [the drafts] online than on paper because it was harder to read. It was clearer on paper. I could use a pen to read line by line, which I felt really difficult to follow on the computer screen with very small font. Besides, occasional faulty network and dead computers prevented me from saving my work. (Anh, 0206)

Responding to these constructive and critical opinions, the researcher, as the interviewer, highlighted several reported advantages of the wiki, including the fact that she could only comment one time on paper, i.e. she had to physically return a

draft back to its author, while she could do this as many times as she wanted on the wiki. Moreover, she could delete old comments and replace them with those that were more appropriate. Anh, on being asked what she thought of these advantages, agreed that “these are some good points of the wiki. But, these benefits cannot still overshadow the disadvantages” that she encountered. Furthermore, Anh was among eight students who disagreed in the questionnaire item 10 asking if the wiki helped them write more than the traditional paper format. It is noted that Anh was from the agricultural province of Quang Binh. She had no access to computers nor the Internet in the flat she rented.

In general, the perceived benefits of the wiki was the construction of a community of practice (Wheeler, et al., 2008) including collaboration, learning, and even emotional effects mainly thanks to the technological advantages this online environment brought about. These benefits, similar to those of SCMC, appear to outweigh the few problems, which could possibly be solved with more comprehensive training in technology use.

### **8.5 Synchronous versus Asynchronous**

Of interest were responses to one of the interview questions, encouraging the students to decide which modes of CMC they preferred, based on the affordances provided by each. To those who favoured the use of SCMC (6 out of 14 interviewees), the synchronous discussion provided them with a friendly, non-institutional and pressure-free atmosphere. This mode of online synchronous exchanges was also considered as an interesting and motivating lifebuoy emerging from the dense curriculum. On the other hand, for other students who preferred the APMC mode, the wiki offered more variety of affordances than the SCMC. From careful explanation to critical justification, two of the five students, who favoured the wiki environment, expressed their partiality toward this type of APMC collaborative learning style:

... Because the chat was in fact not completely perfect; it did have some shortcomings as compared to FTF discussions. I haven't however found any shortcomings from the wiki. (M. Hang, 0210)

Generally, I don't hate either of them; but if I have to choose, I would say I prefer the wiki exchange because it has more functions than the chat. We could easily write on the wiki, which could be observed and edited by the other group members as well as the teacher anywhere and anytime, saving lots of time. In addition, the wiki itself also included the chat discussion. We could give comments in a more convenient way. Moreover, we could view and review the work as many times as we wanted to, different from the chat discussion which could not save scripts online. Everything on the chat disappeared when we logged out ... (Hanh, 0205)

As far as socio-technical affordances (Lund, 2008) are concerned, the archive function of the Yahoo! Messenger, like many other chat tools available, to the best of my knowledge, could only save the chat scripts locally, i.e. on the computer. In other words, the students could not refer back to chat discussion scripts on another computer even with the same account used to chat in the previous discussion. Hanh, (0205) like many other students in this CMC class, was in this situation. As she had previously used a lab computer to discuss within her group, she could not review the discussion history, by using computers in the library or, more often, in the Internet shop. Conversely, the wiki saved all entries online and they could be accessed anywhere, and of course, anytime. If one of the crucial questions raised by White (2003) is "how to arouse and maintain in language learners a desire to interact" (p. 55), then the online learning context in the current study solved the problem somewhat by helping the students to perceive the significance of the CMC-based learning environment and facilitating their willingness to interact meaningfully within the affordances this environment provided. In other words, it is these affordances of the asynchronous mode of CMC which helped involve more sustained commitment to the collaborative work among group members than the SCMC, as commented by Phuong (0210):

I prefer wiki exchange because it does help us improve our skills more than chat discussion. Moreover, we work harder in wiki exchange than in chat discussion. Chat discussion is just a small part while wiki exchange is with us for almost the whole course. (Phuong, 0210)

Finally, three students reported that they could not decide which one they preferred. Rather, they liked both, elucidating that each mode of CMC had its particular features and characteristics, complementing each other (Honeycutt, 2001). For Nga (0204), 'each had its own merits'.

## 8.6 Collaborative Opportunities

The descriptive statistics in Table 8.3 show that all 30 students indicated in item 11 of the post-project questionnaire their agreement or strong agreement that they enjoyed the collaborative learning opportunities the course offered (Mean = 3.20, SD = .41,  $t = 9.42$ ,  $p < .01$ ). Likewise, most of them (28 out of 30) affirmed that they gained new ways of learning from the collaborative process (item 13), which partly resulted in a larger number of comments they entered on the ten wiki sites. Additionally, the high number of students responding positively regarding the amount of interaction via computers throughout the course (item 15) (Mean = 2.93, SD = .69,  $t = 3.43$ ,  $p < .01$ ) might have been foreseen from the time involvement in the SCMC discussion and especially the large number of comments in the wiki peer review process, along with the researcher's sustained observation.

Table 8.3 Students' perceptions of collaborative learning (n=30)

Item	Mean	S.D.	$t$	$p^*$
11. I enjoyed the collaborative learning opportunities.	3.20	.41	9.42	.000
12. I am satisfied with the final collaborative product.	2.83	.65	2.82	.009
13. I gained new ways of learning from the collaborative work.	3.10	.48	6.84	.000
14. Everyone in the group contributed equally to the final work.	2.83	.70	2.61	.014
15. I had a lot of interaction with my classmates via the computers.	2.93	.69	3.43	.002

\* Significant at  $p < .01$

However, not many students were satisfied with the final collaborative essay, as six students disagreed with item 12 and one student, Nghia (0207), strongly disagreed with this. Answers to this item also correlate to responses to item 14, evaluating the level of equal contribution to the final essay (Mean = 2.83, SD = .70,  $t = 2.61$ ,  $p < .05$ ).

Nghia (0207) was a student from a provincial region with a self-evaluation of limited computer skills but high language proficiency evident in her graduated GPA of 7.88 (ranking 4<sup>th</sup> in the CMC class). As a group leader, she was the most participating member in both chat discussion and the wiki peer review processes. In terms of the latter process, her login times were 76, compared to 37 and 6 by the other members. This group therefore had the highest figure of Gini coefficient of .39 across the 20 groups, both paper-based and ACMC. More specifically, Nghia produced 72.5% (74 out of 102) of the group comments while 14.7% and 12.7% were contributed by the other two members, Dao and Thuy respectively. On being asked why she was not satisfied with the final group work, she explained that by the time the post-project questionnaire was delivered her group work had not finished due to the limited engagement of the other two members and she was very worried about the result. It can be inferred that Nghia, like Ngan in 0203 as discussed above, was highly responsible and expected much from other members and of the quality of the final collaborative essay, which made her feel upset regarding the group result. Another important conclusion drawn from what Nghia said is that CMC fosters process-driven learning. In other words, while the traditional collaborative process in the control class stopped when the final product was submitted, the collaboration on the wiki could be prolonged over a sustained period of time.

Of interest was part of the second interview question asking what the students liked most about their final collaborative product. This should be changed to 'do you like your final group essay? Why/not?' because 10 out of 14 interviewees indicated they were not so satisfied with the final essay. This low level of satisfaction can be partly explained by the Vietnamese style of self-assessment, especially in face-to-face approaches like an interview. In other words, Vietnamese feel uneasy or shy when they say something good about themselves. They therefore tend to reduce the level of self-assessment, from good to average, from average to bad, for example. For these

Vietnamese learners, the use of self-denigration strategy is quite common in everyday conversations. Another reason lies in the students' expectations of computers. There may have been a belief in the 'fire' metaphor, i.e. the closer to the fire one is, the warmer one automatically feels. The students might have an analogical thought that just because they learned with computers, their results must certainly be better. Other explanations can be found from the interview data, including disagreements among group members and dissatisfaction with the essay itself, such as paragraph organisation and grammatical errors. These issues were however similar in the paper version and had no relation with the application of CMC. In fact, when asked how they would have compared if the same task had been done in the traditional method, most of them responded that the new style of learning with CMC was much better although some issues occurred as above. Ngan in 0203, for example, in spite of assessing her group essay at an average level, made this comparison:

I felt that the other members were more willing to listen to me when correcting on this [the wiki]. It seemed difficult for me to persuade them in the direct way like face-to-face. I just made use of the comment functions on the wiki to add mine. They looked more diagrammatic and logical. (Ngan, 0203)

Similarly, all the three members of group 0210 were satisfied with their final essay as a collaborative product, as summarised by Phuong below:

Which I like most in the final collaborative product is that everyone contributed their own work to make a complete final product. Also, we spent time together to revise and improve our writing. (Phuong, 0210)

In general, the students responded highly positively to the computer-mediated collaborative learning toward the final essays. Although the satisfaction level was not so high, as reflected during the interviews, the reflections on and perceptions of the usefulness of CMC in collaborative practices were constructive and optimistic, when comparing them with traditional methods of collaboration.

## 8.7 The Course Benefits

The students' reflections on and perceptions of the various benefits the CMC-integrated course brought about are of two types, according to the questionnaire items: those relating to specific skills and areas (Table 8.4) and those concerning future impacts (see Table 8.5). In both types, positive reflections are presented as follow.

Table 8.4 Students' perceptions of the course benefits on skills and areas (n=30)

Item	Mean	S.D.	<i>t</i>	<i>p</i> *
16. This course helped improve my computer skills.	3.40	.62	7.93	.000
17. My English improves as a result of CMC collaboration.	2.93	.45	5.28	.000
18. My grammar improves as a result of CMC collaboration.	2.77	.50	2.90	.007
19. My writing improves as a result of CMC collaboration.	2.97	.41	6.18	.000
20. My vocabulary improves as a result of CMC collaboration.	2.97	.49	5.22	.000

\* Significant at  $p < .01$

It is no surprise to learn from item 16 that most of the students (28 out of 30) in this CMC class corroborated that this course helped them improve their computer skills (Mean = 3.40, SD = .62,  $t = 7.93$ ,  $p < .01$ ). For most of these Vietnamese learners, experiencing the use of CMC, both synchronous and asynchronous, in an academic setting for the first time transformed their view of the application of computers in language learning. This experience also helped upgrade their computer aptitude from feeling anxiously unfamiliar to a confident level, as can be seen here: "Now I feel acquainted to it and I think I will be able to learn better with this method" (Tam, 0202). Only two students (Phuong and M. Hang, 0210) did not concur with item 16. They explained that the computer applications used in the course were very familiar to them since they used them every day. Hence, they found no improvement via this course, as compared to their existing knowledge of computers.

Due to the 'fire' metaphor discussed above, perceived impressions on the improvement of English in general were however not so high, with the mean of 2.93 (item 17), slightly above the hypothesised mean of 2.50. Various extents of responses were mentioned in the questionnaire as well as in the interviews showing that the writing skill along with vocabulary and sentence structures was essentially developed through the course while other skills and areas, such as reading, grammar, and speaking were occasionally referred to. It is not difficult to find explanations for these perceptions since the whole collaborative process focused mostly on writing with an essay as final product. An exception might be the chat discussion, in which the language used was half written and half spoken, as realised by many interviewees. This shows that the learners in this course could discriminate linguistic differences between the two modes of exchanges, i.e. SCMC and APMC. Notably, some students mentioned a few metalinguistic aspects that were considered useful for future language development, like "it improves my ability to think more quickly in English, and respond more quickly to request or question" (Ngan, 0203). Similarly, Phuong (0210) expressed her view in the email interview that:

Yes, it does in some ways such as helping about using English more appropriately or giving more chances for everyone to contribute their opinions, which hardly see in common classes. (Phuong, 0210)

It is of course admitted that only a short course of 12 weeks applying, indeed not introducing, CMC to an academic environment can barely result in an obvious improvement in the learners' language proficiency. M. Hang (0210) helped to conclude this part, regarding the perceived benefits of the CMC-integrated course to language development, as below:

Uhm, I think that if this way of learning was applied much longer, much would be improved. We in fact used just a little bit of CMC to write a short essay, it was hard to say my English was improved after this course. (M. Hang, 0210)

Regarding the future impacts of the CMC-integrated course, responses to the last four questionnaire items were greatly encouraging. The majority of the students agreed with item 21 that they felt more engaged in learning during and after the course (Mean = 3.00, SD = .53,  $t = 5.21$ ,  $p < .01$ ). This affective realisation is

essentially significant in collaborative learning, according to a CLT approach to language learning and Vygotsky's sociocultural theory that require an individual to be actively involved in activities within a social setting, through which knowledge will be instinctively acquired from other individuals. Similarly, they also enjoyed learning English (item 22) and collaboration (item 23) more after this class, with the mean of 3.17 and 3.03 respectively, considerably higher than the hypothesised mean of 2.50 (Table 8.5). Key factors for these positive attitudes include the new and motivating application of CMC in the two modes and the encouraging collaborative task that involved more interaction among learners.

Table 8.5 Students' perceptions of the course benefits on future impacts (n=30)

Item	Mean	S.D.	<i>t</i>	<i>p</i> *
21. I felt more involved in learning during this course.	3.00	.53	5.21	.000
22. I enjoy learning English more after this class.	3.17	.46	7.92	.000
23. I enjoy collaborative learning more after this class.	3.03	.49	5.96	.000
24. I will recommend this way of learning to my friends.	3.43	.50	10.14	.000

\* Significant at  $p < .01$

Outstandingly, as shown in item 24, all students expressed their willingness to recommend this learning style to other, new generations of language students (Mean = 3.43, SD = .50,  $t = 10.14$ ,  $p < .01$ ). In addition, when being asked what advice they would give to future students who may attend a similar CMCL class, it is not surprising to learn that the majority of the students (22 out of 30) prioritised some preparation be made regarding computer knowledge and typing skills before taking a CMCL class in order to be capable of learning more effectively. This again verifies the importance of technical instruction as a key factor for a successful CMC-integrated course as far as these particular Vietnamese students are concerned. Furthermore, some advice was orientated to language and task preparations to minimise disagreements and to ensure the success of group work. Other advice was

interestingly focused on the roles of the teacher as a course facilitator, a group work regulator, and also a technical problem coordinator, adding that students “should pay attention to what the teacher instructs them” (Chuyen, 0210) and that they should not “be shy to talk to your teacher about your problems” (Nghia, 0207). Lastly, some called for more cooperation among group members because “team work is very important. Each member of the group has to know how to get others involved in the CMCL class so that the final result is satisfactory” (Nghia, 0207).

Finally, last-minute remarks on the last, open-ended item in the questionnaire left quite a few critical and thoughtful comments, along with certainly a large number of general appreciative comments. Ngan (0203), for example, favourably confirmed that this way of learning brought her a lot of interest and that her group members had chances to express more ideas than they might be able to in direct speech. For the same reason, M. Hang (0210) auspiciously expressed her preference for this way of learning as being very interesting and that learning does not need to be limited to the classroom anymore.

On the other hand, in line with within-class suggestions from some students, such as requiring more control from the teacher and including more language skills, Nga (0204) and Binh (0203) critically called for more investment from the college administrative level for the improvement of the computer and network systems on campus before any application of CMCL into a language class. Moreover, Anh (0206), in spite of holding negative impressions about CMC throughout the collaborative process, justified her evaluation at the end of the course, suggesting a combination with the traditional method: “The application of CMCL is still interesting and useful. As for me, it's very good to combine this way with traditional class” (Anh, 0206).

## **CHAPTER NINE: DISCUSSION**

### **9.1 Overview**

This chapter of the thesis aims (1) to draw conclusions from what has been presented and discussed so far regarding the process, product, and student perceptions of and reflections on the introduction of CMC technologies into collaborative language learning in particular Vietnamese tertiary classroom practices and (2) to identify several themes which have emerged from the research.

### **9.2 Discussion of the Research Questions**

#### ***9.2.1 Synchronous discussion***

Referring back to the first research question that looks at the nature and contribution of synchronous discussion as compared to the FTF discussion process, several conclusions are drawn below.

The first level of analysis challenges findings of previous studies (Kern, 1995; L. Lee, 2002; Smith, 2003) that synchronous CMC interaction can foster greater participation. To these Vietnamese students of English, the greater participation is reflected in terms of more time involvement, but not in quantity (fewer words). Concisely, the participation level was higher in the control groups than the CMC groups regarding the total number of words and the number of words per turn. More specifically, the current study differed markedly from the study of Kern (1995) who found that students of French as a second language produced up to four times more sentences and more words in SCMC discussions than in FTF exchanges.

The two possible reasons were that this was the learners' first time of applying SCMC in the academic environment and the learners' relatively limited expertise in computers and typing skills. The CMC students needed more time not only to type messages but also to manage some technical problems which arose. For example,

one of the students in the CMC class, Nguyen (group 0206), said, “I’m not surprised because normally the time used to type one sentence can produce up to three sentences in speech” when asked what she thought about the discrepancy. Technically, the speed was even slower on SCMC with the students’ hunt-and-peck typing style, in which the eyes had to switch between the keyboard when typing and the chat window for running messages. Periods of silence (Stickler, Batstone, Duensing, & Heins, 2007) were more frequent and generally longer in SCMC conversations than FTF exchanges.

In addition, an explanation for the limited numbers of words and more time spent is that the online mode of discussion, with the lack of facial expressions and gestures (Jonassen, 2004; Lund, 2006; O'Rourke, 2008), was new to many students in this class. This required more time to think in order to ensure the understandability of messages entered, as opposed to the FTF exchanges, in which “if my friends don’t understand my spoken ideas, I can use gestures to express them” (Nga, 0204), and in which “if I’m stuck I can use my hands and face. When I move my body while talking, I feel my speech more fluent. I don’t know what to do if I’m stuck on chat” (Nghia, 0207). Psychologically, SCMC discussion might, on the one hand, impede the students from thinking due to the lack of gestures, considered as an important element of embodied cognition. On the other hand, the online chat generated another element of embodied cognition, i.e. eye movement. However, whether this kind of eye movement facilitates thinking may need another line of research inquiry.

However, more equal participation was evident in the CMC groups than the control groups, reflected in the Gini coefficients of participation inequality. This corroborates the previous findings by Warschauer (1996) and Fitze (2006) and highlights the significance of online synchronous communication in collaborative learning processes (Ingram & Hathorn, 2004), in terms of liberating more marginal members in the class and providing an egalitarian platform for all contributors. The finding at this level of analysis is especially more significant when the Vietnamese context of group-based learning is taken into account, in which passive students are oftentimes reluctant to participate in group work, leaving most of the work to be done by active students (cf. section 2.2.2). To these Vietnamese students, the synchronous chat that they experienced for the first time in the academic

environment created much motivation to participate. In addition, the conversational style in which there was no turn-taking competition (Kitade, 2000) and the reduction of non-verbal cues (Warschauer, 1997) facilitated contribution from shy and quiet students. It was the lack of physical presence that generated an environment of authentic communication, especially as far as this EFL monolingual classroom setting was concerned. More clearly, the students in the present study felt that using English in FTF group work was boring and unreal. The use of SCMC as a mediator created a realistic channel for them to use the target language. Furthermore, the fact that the students were able to ‘see’ the language when conversing served as a thinking device and increased their understanding, therefore enabling them to participate more. Above all, as discussed in section 3.2.2 about Vygotsky’s constructs of mediation and activity theory, the language used in this mediator, whose nature fell somewhere between formal writing and informal speech, supported both reflection and dialogue.

Another important finding was that short turns were frequent and dominant as an exchange pattern across the 10 CMC groups. This finding correlates with Smith’s (2003) conclusion, in his study on synchronous computer-mediated negotiated interaction among intermediate-level learners of English, that it is common to see “shorter sentences, abbreviations, simplified syntax, the acceptance of surface errors, and the use of symbols and emoticons to express emotions” (Smith, 2003, p. 39). In fact, a causal relationship was observed regarding the limited average number of words per turn in the SCMC discussion. There were several explanations for these short turns made by the CMC students. It took most of them, with limited typing skills, so long to type a full idea while at the same time they wanted to maintain the conversation and to get their ideas across, which in turn tempted them to hurriedly enter a turn even though it was not a complete idea. An idea therefore needed several turns to transfer its complete meaning, during which it could be unfortunately interrupted by other turns from other members. This in turn required group members to quickly finish their idea while keeping the conversation going on. The circle sometimes went on and on repeatedly throughout the discussion, resulting in a series of short turns of overlapping ideas. Above all, this text-only method of exchange, in which the priorities were to quickly get ideas across and to smoothly maintain the conversation, also partly explains the reason why the CMC students tended to key in

fewer words in each turn. It is concluded in this study that limited computer knowledge and typing skills affected the quantity and quality of the conversation.

Furthermore, regarding the relationship between the role of the elected group leader and the actual leadership during the group discussion, active and dominant participation patterns might not be the only way to define leadership. Within the Vietnamese sociocultural perspective, it is expected, and evidently demonstrated from other members as well as the leader him/herself, that the group leader must take control of the discussion primarily in terms of more active and dominant involvement. However, this expectation, while it existed in the FTF groups, could not be attained in the SCMC discussions. In other words, there are two possible views on leadership as regards online discussions. One of the views is there was no such leadership role in the democratised SCMC group discussion. The other view is that leadership roles, if any, in the CMC-based discussions may be enacted in some ways other than the extent of participation. This is a promising avenue for further research.

The more comprehensive analysis of data from the two modes of discussion shows that while there was a smooth flow of topics one after another in the control groups, topics in the CMC-based discussions appeared in a seemingly chaotic manner. It is usual to see in a CMC chatscript two or more topics mingled one after another. This is due to the characteristics of topic jumping and paralleling in most SCMC exchanges (Shi, et al., 2006). In other words, the fact that ideas jumped and paralleled simultaneously made the chaotic chat discussion hard to follow and understand. This frustrated some students who were new to the online text-based conversation and was really a challenge to overcome to attain online communicative competence. After all, the longer time required to produce written texts in SCMC exchanges means that they are well suited for use in individual reflection, according to Wells's (1999) discussion on the roles of mediational tools.

Regarding the flow of topics, another emerging point was that because of the multitasking feature (Shi, et al., 2006), the SCMC medium, with its various affordable functions, captures more of the interpersonal complexity of interaction. Psychologically, human beings think on many levels, but only one channel can be

used in FTF exchanges at any time. The conventional rules of conversation demand that people pursue one topic at a time, that the next topic follows the previous one, and that only one person speaks while others are supposed to listen and wait for their turns. In contrast, online participants can at the same time discuss two or more topics in parallel. This generates another significant characteristic of closure resistance, as suggested by Shi et al. (2006). This characteristic of online discussion denies the sequential order of topics. In other words, the initiation of a new topic does not necessarily close the previous one. In addition, as no turn-taking is required, participants can do many things other than listening to their partner, such as referring back to what has been discussed, consulting references, thinking what next to contribute, or typing. Obviously, the SCMC medium is able to capture more closely what actually happens when people interact and think.

Findings from the group interaction contradicted one of the conclusions made by Mangenot and Nissen (2006) that online “groups rarely engage in discussions on the sociocognitive level” (p. 615). The discrepancy might result from various context-related factors, including social, cultural, institutional, and research settings. In the current study, the CMC groups in fact reached a high percentage of sociocognitive discussion, accompanied by a lower proportion of exchanges relating to socioaffective and organisational themes. This indicates a high level of focus on the required task in the CMC groups as in the control groups. Nevertheless, the socioaffective and organisational episodes had their respective significant roles in creating, constructing, and maintaining the online collaborative community of learning.

As far as social and emotional elements are concerned, socioaffective episodes related to social exchanges were present but were not a major focus of the groups, either control or CMC. This finding was supported by Curtis and Lawson (2001) who claimed in their study on university students’ use of CMC in learning a foreign language that a minimal amount of only around 5% of the contributions were related to social interaction. The four subcategories in this theme in the current study show how the groups expressed their mutual respect and social cohesiveness, significant elements of effective collaboration (Mangenot & Nissen, 2006). It is however noted that while few FTF groups covered all the social and affective factors, these

subcategories were scattered through all the 10 CMC groups, with the concentration on social cohesion and emotional expression. The scattering of the socioaffective episodes in the SCMC discussion occurred partly due to the effect of the newness of the experience with the online environment and mainly because the participants were not physically co-present, therefore missing most of the conventional social and facial cues. As a result, in contrast to the FTF discussion, where the socioaffective elements functioned just as greeting and farewell either at the beginning or the end of the discussion, the online students repeatedly added in socioaffective components in order to create a sense of inclusion. These social and emotional elements per se modified the pattern of the conversation by cutting episodes into smaller pieces and creating a consecutive discussion chain with two or more topics running parallel. As a result, the discussion sequentially indicates the necessity of social, affective, and emotional elements in maintaining the online collaborative community, as indicated by Vygotsky's sociocultural theory (1981) and the CLT approach to language learning (Meskill & Anthony, 2005).

Like the socioaffective episodes, organisational episodes were present, but rather modest in the control group discussions. These logistical and technical episodes however covered a considerable proportion throughout the CMC group discussions. Technical issues were unavoidable when a new learning environment was introduced to the CMC class. These matters were not however as high as initially anticipated considering the participants' limited computer skills. Furthermore, discussion management and group management, as part of the organisational theme, identified previously as indicators of high performing groups (McLoughlin, 2002), were more evident in the CMC groups than the control groups via occurrences of negotiating and reverting discussion flows, timing group work, and seeking and providing help, among many others, through which various instances of learning in the ZPD occurred. Especially, a substantial finding from the discussion management subcategories was a range of negotiation instances scattered throughout the CMC groups, making the online discussion mode more efficient in terms of interactive and collaborative learning. Finally, the teacher's involvement in the online discussions was critical in terms of group autonomy. On the one hand, the presence of the teacher might have been helpful in technical and logistical management. On the other hand, this may possibly have caused negative effects as the students did take advantage of

this for consultation, thereby reducing the level of autonomy, especially in this Vietnamese sociocultural context where learners tend to rely heavily on teachers as the norm. In a word, all of the noted features of organisational episodes in SCMC chat demonstrate that the nature of the tool and of the characterised turns provides more opportunities for the co-construction of the learning community.

A closer examination of the sociocognitive episodes clearly reveals that the control group discussion involved more presenting, dictating, and directing, which led to decisions being easily and quickly achieved based on prior knowledge and information. Frequently seen throughout the 10 FTF discussion transcripts were long, information-dense monologues and the speaker's stance in relation to the content of their talk was not evident. Instances of negotiation were hardly ever observed in these FTF groups. Rather, members tended to avoid challenging ideas. This is not, of course, to deny all the group work efforts made by these FTF groups. Nevertheless, these practices of collaboration reflect the Confucian traditions of learning, in which a collectivistic way of contribution and high team-spirit are preferred; any possible potential conflicts are evaded and circumvented in order to build up and maintain the so-called unity and harmony. In contrast, it was more challenging and complex for the CMC groups to attain agreements. Proposals were quite often discussed and confronted through the process of negotiation before being accepted. In other words, it was more difficult for the SCMC groups to reach a consensus than the FTF groups, which was similar to the conclusion made by Weisband (1992) in her study on group discussion and first advocacy effects in computer-mediated and FTF decision-making groups. Weisband found that other group members were inclined to agree with the first speaker in FTF discussions while this hardly ever happened in CMC exchanges. Initiating, requesting, eliciting ideas and/or opinions, offering to act, and suggesting alternatives, among many other instances of negotiation were found spread throughout the CMC group discussions in the current study. In general, the occurrences of challenging and negotiating allowed the CMC groups to attain a sustained level of synthesis of information, as identified by Ingram and Hathorn (2004). Hence, a significant conclusion drawn is that while FTF groups were more product-oriented, the CMC groups were more learning-oriented, both of which aspects are needed, each having their own and complementary place in the learning process.

In a word, this section analysed two crucial issues of the discussion process in online language learning (White, 2003). Regarding the participation level of analysis, the CMC groups produced a significantly smaller number of words and considerably fewer words per turn, but spent substantially more time on the required task than did the FTF groups. This indicated that the students were able to sustain the discussion over extended periods of time in SCMC. Member participation in the online discussion groups, on the other hand, was significantly more equal than that of the FTF groups. This is an important finding in terms of collaborative learning and contributes to the literature, confirming that SCMC is an equaliser by affording more equal “participation structures” (Hansen, 2005, p. 12) among the learners in this specific Vietnamese sociocultural context. Also in this discussion process, the analysis at the interaction level revealed that attaining agreement and conformity of ideas was undemanding for the FTF groups. In contrast, the SCMC groups had to make use of various communicative tools to negotiate and challenge each other in order to reach a common ground of shared understanding, which clearly created opportunities for a better level of synthesis of information. Notably, the online groups also produced a substantial number of socioaffective and organisational exchanges that helped to construct, maintain, and develop the online community of collaborative learning. Finally, if effective collaboration begins with discussion and negotiation, as suggested by Dooly (2008) in her investigation of the many steps needed for effective collaborative language projects, then the SCMC exchanges in the present study did fulfil the mission. Results from analysis evidently confirm a series of negotiated discussions in online chat while sequential exchanges with rare instances of negotiation, or none at all, were observed in FTF discussions.

### ***9.2.2 Asynchronous peer review***

Several conclusions are presented below regarding the second research question, examining the nature and contribution of the asynchronous wiki-based peer review process as compared with the pen-and-paper version.

The initial conclusion to be drawn from the analysis of the peer comments is that the wiki afforded the students opportunities to work collaboratively. More specifically, in this peer review process, the user-friendly wiki platform, which is termed

“architecture of participation” by Wheeler, et al (2008), facilitated student contributions, reflected in the huge number of comments generated, as compared with the modest number of comments made by the paper groups. This was thanks to the fact that peer exchanges on the wiki could be done anywhere and as many times as desired by the students. Moreover, the number of online comments was multiplied by the multi-way nature of wiki-based exchanges, based on which a considerable number of interactive and negotiable comments were generated. However, in considering whether points of comparison are legitimate, a word of caution is that this quantitative comparison between the two modes of peer review could be seen as somehow limp as working on the wiki, with its user-friendly functionalities, as a matter of course afforded and facilitated more contribution and more involvement compared to the conventional method. Arguably, it is of course necessary to highlight the fact that the tool afforded it does not make the comparison less viable. This is what the current study is seeking to identify.

Furthermore, the task requirement and the traditional nature of paper peer feedback oriented the control groups to produce mostly sociocognitive comments. Other than these, the CMC groups also had a considerable number of comments related to socioaffective and organisational themes, which were found to be minimal in the paper feedback. These two themes of comments evidently had their own significant roles as far as the collaborative learning processes were concerned. While the traditional mode of commenting reflected a one-way interaction, in which there was hardly any counter-feedback and/or explanation, the wiki mode of peer review, by nature, supported the two-, if not multi-, way of interaction. In other words, the wiki-based peer feedback process created a multi-way interactive mode of learning, as one of the outstanding characteristics of Web 2.0 (Warschauer, 2010; Wheeler, et al., 2008), based on which not just and mostly the cognitive level of learning, indicating a high degree of commitment to task, but also socioaffective and organisational levels of collaboration can be attained. In sum, while the paper groups focused most of their comments purely on the required task of exchanging feedback, the wiki groups furthered the peer review process beyond the designated task with a range of socioaffective and organisational comments. Indeed, the online platform of Web 2.0, wikis in this case, turned the peer review process into a networking of both the academic and the social.

Regarding the socioaffective theme that captured all of the students' social and emotional exchanges, the five subcategories coded under this theme reflected the collaborative effectiveness of the peer review process by illustrating how the online groups expressed their emotional behaviours, social cohesiveness, and mutual respect. While all of the five subcategories were seen throughout the online groups' peer review process, intersubjectivity turned out to be the most outstanding element. From the Vygotskian view of cognitive development (cf. section 3.2), intersubjectivity is considered a significant byproduct of collaborative discourse (Darhower, 2002). Intersubjectivity assists in establishing a shared perspective between group members during the process of problem solving. Rather than just reflection on the world, the concept consists of an engagement with the social context. Hence, intersubjectivity also means engaging the full person. That is, English language learning in such a context went beyond just learning it as a subject. Darhower (2002) also asserts the importance of negotiating and maintaining intersubjectivity in collaborative language development. Similar to episodes of this type of intersubjectivity in the SCMC discussion, this subcategory in the asynchronous peer review process consisted of those comments of encouragement, seeking consensus, and agreeing or rejecting others' comments. These comments constructed a social and cognitive space facilitating participants' mutual support and indicated the cycles of negotiation and challenge, leading to a higher degree of autonomy, the efficacy of collaborative peer review procedures, and a substantial level of information synthesis.

The four subcategories in the organisational theme, namely feedback management, teacher involvement, group management, and technical management, also played significant roles in building up and maintaining the peer review process. The user-friendly wiki environment helped reduce the degree of the teacher's involvement and group management, and especially technical management as compared to the chat discussion. Meanwhile, feedback management comments were comparatively copious, indicating the high level of autonomy across the 10 CMC groups and therefore opportunities for learning in the ZPD afforded. In essence, most of the organisational comments were generated in order to construct, maintain, and enhance the collaborative community of learning, similar to those in the socioaffective theme.

Moreover, though the social, emotional, and logistical occurrences scattered throughout the wiki-based peer review process, like those in the SCMC discussion, helped build up the online learning community, a difference was found. While the socioaffective and organisational exchanges were indispensable elements of synchronous online discussion, produced to complement the lack of social cues and facial expressions, social, emotional, and logistical components were generated thanks to the easy-to-use characteristics of the multi-way interactive wiki itself with the purpose of creating, maintaining, and facilitating the collaborative learning ecology, including social networking. In other words, socioaffective and organisational elements were considered as a necessary conditioner in the synchronous discussion process, while these elements were seen as a sufficient conditioner in the asynchronous peer review process.

The analysis of the sociocognitive comments, aiming to explore the peer review process in relation to a synthesis of information, reveals that comments in the CMC groups outnumbered those made by the control groups with regards all types, areas, and nature. Of the six types of comments coded, alteration comments in the CMC groups were the most prominent in number and were more than double those of the control groups. This finding is endorsed by Liu and Saddler (2003), who concluded that the major difference in comment types made by two similar groups was to do with alteration comments. This was obviously on account of the user-friendly aspects of the wiki platform. Of interest were explanation comments, producing the second significant difference in number between the two methods of peer exchange. A range of comments regarding explanation and counter-explanation facilitated the cycle of negotiated interaction and challenge in the online peer review process, making this mode of learning more efficient in terms of collaboration.

In addition, the number of online comments was higher than paper comments with regard to areas of focus, in which the difference between the two modalities was clearer in local comments, mainly because there were a larger number of alterations from the CMC groups. This larger quantity of alteration comments also resulted in the much higher number of comments coded as revision-oriented in the CMC groups as compared with the control groups. Thereby, if the success of the peer review process is measured by the number of revision-oriented comment, then the online

wiki-based peer feedback in the current study attained a more successful level than the paper version.

By tradition, Vietnamese learners tend to praise, rather than criticise, other people's work with the aim of keeping group harmony and unity. These Confucian collaborative practices were observed in this study. There were a larger number of comments of complimenting evaluation than of critical evaluation in both modes of peer review. However, the ratio of critical to complimenting comments in the paper groups was 31/114 (= .26), much lower than the similar ratio in the online groups (51/141 = .36). Obviously, the wiki-based peer review process proportionately generated more critical comments than did the paper groups. This indicates that online peer review tended to be more analytical and revision-oriented than the traditional method of giving feedback. It is therefore confirmed from this perspective of collaborative learning that these Vietnamese students with their particular traditional group work practices tended to either offer honeyed words rather than criticise each other's contribution or sugarcoat the criticism with laudatory comments. Though the online mode of peer review did reduce the ratio of complimenting versus critical comments, as compared to that of the paper groups, there were still more compliments than criticisms in both modes of peer exchange. It is therefore believed that there were transformative practices from paper-based to online method of peer review.

Finally, the logistics of the traditional class appeared to make collaborative writing a linear process: ideas were first generated and discussed; drafts were written by individuals and then corrected by other members; final products were compiled and submitted. Meanwhile, learning on the wikis added to the sequential process of writing by allowing for discussion and negotiation at any stage of the collaborative process. Furthermore, this process of collaborative learning can be observed and monitored by the teacher. In particular, written products on a wiki are never fixed, but rather, "function as resources for expansion, reconfiguration, and new synthesis" (Lund, 2008, p. 50). It is therefore argued that the interactive manner of the wiki-based peer exchanges led to a positive level of information synthesis. In other words, the application of wikis to the academic setting in the present study offered great potential for collaborative learning as they facilitated a format for the collaborative

creation of knowledge. Above all, if the degree of learners' satisfaction in online learning is, as Swan (2002) suggests, based on the quantity and quality of interaction and negotiation, then the wiki peer review process did fulfill the mission. The use of wikis in this particular social and academic context is considered successful as they facilitated students' collaborative generation and synthesis of knowledge within a sharable and freely accessible space. To recap, wikis are certainly a remarkably influential digital mediator for collaborative learning and collective construction of knowledge.

### ***9.2.3 Final collaborative products***

The quantitative and statistical analysis reveals not much noteworthy difference in the final essays between the two classes, except for considerably more words per essay made by the CMC groups. The little difference found in the final essays is hardly surprising mainly because of the fact that only a short time of 12 weeks learning with technology could hardly make any considerable improvements from the CMC groups as compared with the control groups, with an initial assumption that the two classes had equivalent language proficiency (cf. section 4.2.4.2). Therefore, the comparisons made, in Chapter Seven, between the two classes should be seen as indicative of trends.

More specifically, findings from the qualitative analysis principally corroborate those from the quantitative analysis. From this second level of interpretation, while the use of language was more or less similar between the two classes, CMC essays were better in terms of content, but worse as regards organisation and structure, than those in paper-based essays. The average overall grade was slightly higher in the CMC essays than the paper essays. It is however noted that, as with the quantitative analysis, there were no statistically significant differences regarding these variables in the two modes of composition.

In summary, for the third research question investigating the final products of the collaborative process of both modes of learning, CMC-based and traditional, information drawn from the two levels of analysis, namely quantitative and qualitative, reveals no significant difference between the two sets of essays. In other words, the collaborative products showed not much difference in terms of the

English language achievement between the two methods of learning due to the short time of introducing the CMC into the traditional classroom practice. However, indicative trends are of interest. Both quantitative and qualitative analyses revealed that the online essays tended to be better in terms of content and idea development while the paper version had better organisation and structure. All the 20 essays in both versions were more or less similar regarding the level and range of language use. Nonetheless, the online essays had a higher level of synthesis of information and therefore a convincing degree of shared meaning (Stahl, 2005), collaboratively generated by the group as a whole through the extensive process of negotiation in collaborative learning.

#### ***9.2.4 Learners' perceptions and reflections***

Referring back to the fourth research question that deals with the students' perceptions of and reflections on the introduction and application of CMCL into the conventional classroom, several conclusions are presented as follows.

Technological expertise, including computer and typing skills, turned out to be the most perceived barrier toward the success of a CMCL course. For these Vietnamese students, whose computer knowledge was limited, well-designed, and comprehensive training programs are recommended before any application of CMC to a language class. Other, less prominent, issues, according to the students, were those relating to language and task preparation and those concerning the college's infrastructure.

Other than those, positive attitudes toward the use of CMC in language learning and collaboration were evident both from answers to the post-project questionnaire and in the interviews. All the participants expressed their preference for learning English with the support of computers and indicated that they wished and were willing to have more CMCL courses like the current one in future. Moreover, an equal number of students preferred either chat or wiki while several liked both and could not decide which one they liked better. They also perceived that each mode of CMC supported their learning and collaboration in different ways, complementing each other. While the chat discussion increased and equalised group members' participation and contribution, the wiki peer review supported them by creating an environment in which they not only learnt English but also exchanged social and emotional matters.

Both of these generated more confidence and motivation toward the collaborative learning process among the students.

The participants reflecting on their experience noted that their computer abilities improved considerably, although the perceived improvements in language skills were not significant due to the short period of CMC in the language class. Furthermore, as a result of these motivational aspects of CMCL, the students felt they were more involved in learning, and especially learning English with collaboration, during and after the CMCL course. All of them were willing to recommend this learning type to the next generations of language students.

Finally, data from the post-questionnaire and interviews confirmed that the students favoured the application of CMC in classroom practice. In addition to many general appraisals, critical and solicitous comments from the interviews in turn have had significant impact on the researcher's line of further discussion.

### **9.3 Further Discussion**

The following sections of this chapter strive to draw together and further what has been presented thus far. The ultimate aim is to discuss the research objective of the current study, which is to examine and investigate the effectiveness and perceptions of CMC technologies in collaborative learning in the Vietnamese sociocultural context. In other words, what do CMC in general and CMCL in particular mean for the Vietnamese EFL tertiary classroom environment? The aim in turn critically raises questions regarding the legitimacy of CMC in the language classroom. Why should students chat via SCMC instead of just discussing FTF? Why should they collaborate on wikis instead of just exchanging feedback via paper? What are the advantages of those online modalities in language learning? The discussion goes beyond the research questions toward key issues attained and selected from the present study. Again, the discussion is put in the context of the Vietnamese EFL environment.

#### ***9.3.1 Classroom boundary***

Socioculturalists believe in the undeniable significance of interaction among learners and between learners and the teacher in an individual's language development. The

more interaction a learner receives, the more helpful and significant it is for her/him to learn and to acquire the language, according to the perspectives of this social-oriented theory. If conventional classroom settings are criticised by Ellis (1997) as being poor places for learners to acquire language as compared with the outside world, then CMCL to some extent helps alleviate this poverty by (1) bringing the world into the classroom, (2) taking the classroom to the wider world, and (3) most importantly, expanding the world right within the classroom.

First of all, the introduction of CMC technologies, both synchronous and asynchronous, brings into the classroom the English language world. There were more than 100 references by the CMC students to various search engines, i.e. Google, Yahoo!, or just the word 'website', during the synchronous discussion and the asynchronous peer review. For these students, websites and search engines became their other main source of knowledge and information, along with those in the learning materials and from the teacher (cf. section 2.3.5). While knowledge from the two conventional sources is undoubtedly limited, the Internet provides a huge source of information for them to interact with. Significantly, classroom practices have been modified in a way that encourages the students to reduce their reliance on the teacher. The abundance of information per se transformed the learners' role from passive receivers to active information processors through interaction with the knowledge society outside the classroom through the use of the computer while the teacher played the role of an information facilitator. This role modification in turn promotes improvements in teaching practices toward a more learner-centred and communicative approach.

Second, the classroom boundary has expanded outside the 2 x 4 classroom box due to the various functions of CMC. If the traditional teaching and learning hustle and bustle ceased when the class hours ended and the students got out of the classroom, leaving most of what they learned behind, the CMC-enhanced academic activities accompanied the students when they left the class and came home with them. By creating and keeping most of the learning activities online, the students were able to conduct their learning and collaborative activities anytime and anywhere, such as in the library, in the Internet café or at home. In addition, bringing learning activities online meant giving students more time to develop their own ideas, to check out what

other students were thinking, and to reflect and remain connected with the way the collaboration was unfolding. Therefore, there were distinct cognitive advantages and possibly affective advantages, as students could check work out at their leisure, in the relaxed surroundings of home or an Internet café. More importantly, these out-of-class activities could be observed and evaluated by the teacher, who was able to do this academic work in his own time. In other words, with support from the CMC technologies, academic-related activities expanded out of the classroom into the wider world, enhancing the students' interactive opportunities with the target language, with classmates, as well as with the teacher, independently of both time and place dimensions. On the contrary, opportunities for interaction in English with classmates and especially with the teacher in the traditional method of collaborative learning could rarely be attained outside the classroom. In effect, extending learning activities into the wider world has a substantial meaning for the Vietnamese English language education context, in which both universities and staff are overloaded with thousands of teaching hours annually, as discussed in section 2.3.1, while the quality of graduates is alarming. The suggested requirement of more in-class interaction with the target language for learners is controversial with the impossible mission of increasing teaching hours.

Briefly, it is inferred from literature that there is little or no language contact outside of dedicated study times in EFL situations, as discussed in section 2.2.2. Arguably, CMC has to a certain extent solved this problem by increasing the number of language contact hours without increasing the number of hours of class time, by bringing the world into the classroom and taking the classroom out of the sealed environment of the classroom into the wider world, which in and of itself represents a significant shift in English language teaching practices in the Vietnamese social and academic setting. Significantly, the English world is brought into the classroom not only in terms of information and language content, but also widely used tools and in terms of modalities of communication. However, a word of suggestion is that students need to be critical users of web sources and to develop critical awareness of these multiple sources. In other words, critical autonomy is an attribute that students should develop in this information-rich environment.

Finally, the most important contribution that the CMC technologies have made to classroom practice is that they expanded the inner world of the classroom. More specifically, CMC has created opportunities for learners to explore themselves and other classmates as another source of knowledge and as contributors in a collaborative learning venture. If collaborative learning activities are reported to fail in the traditional EFL classroom practices due to (1) the lack of authentic communication (cf. section 2.2.2) and (2) the lack of immediate need to use the target language while the students can collaborate in their first, shared language and, especially, (3) the reluctance to participate and to share ideas of some students because of limited language skills and different sociocultural backgrounds, the introduction of CMC as an artefact mediator (Lantolf, 2000) may be a solution, as evident in the current study. The online students participated more, contributed more, psychologically expressed and exposed themselves more, and in the process learned more from each other. In fact, the most significant point drawn is that for these Vietnamese students, the main sources of knowledge went beyond the reading materials and the teacher (cf. section 2.3.5): through the social mediation of interactive activities, the students themselves were considered as a significant source of knowledge.

Concisely, the CMC environment has provided additional resources for learning and for collaborative knowledge construction by expanding the classroom boundary in the three dimensions as discussed above. This idea is supported by Menezes (2008) in her keynote speech at the 2008 WorldCALL conference. By introducing CALL as a ‘strange attractor’ in language education, Menezes argued that a significant shift in acquisition is potentially achieved when learners are able to further their learning experiences outside the classroom border and increase the extent of exposure to the target language by means of an all-encompassing artefact, i.e. the networked computer. In addition, more than just a mediation for interaction, CMC has turned communication into substance, as identified by Dillenbourg (2005), transforming the conventional classroom into a content-rich environment. In a word, the discussion explains how CMC technologies and CMCL opportunities can begin to actively transform the pedagogical environment. The idea is correlated with Activity theory (cf. section 3.2.2), indicating that the context and the mediating tools are catalytic

factors of an instructional setting, being able to change the pedagogy as well as the institutional and sociocultural components (Wertsch, 1991).

### ***9.3.2 The sociotechnical affordances of the CMC environments***

According to Vatrapu (2007), sociotechnical affordances are conceptualised as action-taking possibilities and meaning-making opportunities in a sociotechnical system relative to an individual. An emerging question is what affordances the CMC technologies can offer to learners of English in this EFL context. An online learning environment has been described by White (2003) as a sociotechnical system incorporating both technical and social aspects; a further question is how these aspects affect the way the students interact and collaborate. There are three important dialectically related components regarding sociotechnical affordances, namely technology, the properties of individual participants, and the social association of the individuals in an interactional situation (Thorne, 2003). All of the three components have been presented in detail so far in the thesis. From a sociocultural point of view, any technology is embedded in social practices (O'Rourke, 2008). Therefore, another emerging question is how the students in the current study, with their own particular sociocultural backgrounds, view and manipulate the various characteristics of CMC.

As a medium of communication, FTF interaction is considered richer than the text-only modality of online communication. 'Richer' in this case implies that FTF mode of interaction includes all aspects of communicative support. CMC is evidently less rich because of the lack of facial expressions, voice intonations, and body language. I tend to support an argument made by Dillenbourg (2005) that a richer medium does not necessary entail a better mode of communication in terms of efficiency and popularity. In addition, another supporting idea is that if CMC were seriously incoherent creating so many challenges, "users would not flock to the Internet so enthusiastically" (Herring, 1999, p. 1). Further, CMC technologies offer several communicative features that cannot be found in FTF settings.

First, voice is the decisive element that facilitates understanding during FTF interactions. In online interactions, the text (letters, words, etc.) itself is considered as the determining factor for understanding. This text-only mode of communication is in fact highly significant for learners of English in an EFL environment where seeing

is easily more comprehensible than hearing. The level of understanding also increases along with the reduction of cognitive load as learners have been off-loaded from having to remember 'who said what' (Dillenbourg, 2005), for example. It is the textual, rather than aural, method that extends the elastic level of synchronicity in communication. In other words, it reduces the online conversational tempo. In addition, the online communication platform also affords the archival feature that enables learners to view, review, and refer back to the language. These technical affordances (text-only, delayed interaction, and archival communication) allow online participants more time for reflection on the language, and create opportunities to ponder messages and prepare for responses. Regarding cognitive amplification (cf. Figure 3.3), while speech is believed to be a powerful medium for interaction, written texts are seen as prevailing means for reflection and interpretation (Warschauer, 1997). As compared with the traditional FTF exchanges, in which speech plays the communicative role, online text-based communication is considered a potential cognitive amplifier because it encourages not only interaction but also reflective cognition, as the strength of writing.

Further, thanks to the affordances noted above, information display is more persistent in the chat system. In other words, though online chat is believed to be similar to FTF exchange in terms of being synchronous, one important difference lies in the persistent level of information display. While speech is gone with the wind in FTF interaction and participants are loaded with listening and remembering, texts in a chat window persist, making it less demanding to understand and reflect as far as these learners of English in the EFL context are concerned.

Analogically, while the pen-and-paper version of exchange requires multiple logistical procedures, asynchronous wiki-based style just needs one website address that stores all of the information. This indicates that information display is more persistent online than in the conventional paper version. Moreover, due to the architectural nature of the media, information display is even more persistent in the wiki than the synchronous chat. Unlike online chat tools, wikis save information online that can be accessed anywhere and anytime. However, the question is why information display matters and what roles it plays in collaborative learning. According to Dillenbourg (2005), it is this persistency of information display that

generates a shared working memory among group members. It helps increase the level of communication and common understanding, and therefore involves more commitment to and investment in the collaborative learning process from learners. According to Warschauer (1997), paper-based writing may be quite useful for expression and dialogue, but less so for collaboration among group members due to its nature of slowness and logistical complexity. It is argued that the persistence of information display and interactive features in the wiki-based composition makes the online communication a powerful tool for collaboration (cf. Figure 3.3).

Second, unlike language learning in the distance education context (White, 2003), in which the use of CMC is encouraged to compensate for the lack of physical co-presence of learners, the application of CMC in the current setting obviously aims to facilitate collaborative learning among learners who are co-located. The notion of affordances is highlighted in terms of ecologies. In other words, what CMC affords in distance education is different from what it can afford in the classroom-based setting. While distance education may perceive CMC as a connecting tool that links geographically distributed learners, the in-campus mode of education perceives CMC as a distributing mediator that disperses co-located learners. Interestingly, in both views, the ultimate purpose is to create a more effective learning environment.

Social interaction is, according to Hofstede (2004), strongly grounded in culture, as reflected in individual patterns of thinking, feeling, behaving and potential interacting. The CMC technologies in this study clearly offer a social ecology for language learning. They contribute to solving classroom-related issues that hinder interaction and collaboration. They create an authentic language situation that pushes learners to use the target language, which is significant in the Vietnamese EFL context. They generate an impersonal interface that requires more contribution from less linguistically proficient and therefore shy and anxious students who are quite often drowned by more competent partners in FTF interactions. Particularly, they modify the learners' conventional interaction formula through the use of language (cf. section 5.3.1). Evidently, the CMC technologies in the current study, characterised as the text-only version of communication, affect the learners' interactional patterns by moderating their social behaviours. Repeatedly, throughout the online communication in both SCMC and APMC were scattered various

instances of socioaffective elements. These social, affective, and emotional episodes assisted in creating and maintaining the online learning community. Their roles reflect a ‘salt in cooking’ metaphor. In other words, salt is periodically added during the cooking process and while it is only a small sprinkling at each stage, it ensures a satisfactory taste and transforms other ingredients. Similarly, it can be seen while examining the students’ interaction scripts that various socioaffective utterances were periodically added to ensure a satisfactory learning process and outcome throughout the collaborative learning practice.

Moreover, CMC technologies create an affective ecology for the students. Flow theory, as discussed by Egbert (2005) in relation to foreign language learning, provides a useful lens for reflection in the current study, bringing mixed attitudes toward affordances provided by the CMCL environment. Egbert highlighted the importance of the relationship between skills and challenges to the flow experience and language learning. For those students who were ‘in the flow’, i.e. their existing language and computer skills and challenges generated by the new learning environment were balanced, learning in this technology-enhanced setting is considered as a lifebuoy, emerging from the crowded schedule of so many in-class hours. This is evident in one of the comments from a CMC student on being asked what he liked about chat: “I like the chat discussion last week because it helps me relax after a weeklong hard work. It is a lifebuoy, saving me from arduous lessons throughout the week” (Tuan, 0202). Obviously, for this student, the chat discussion is not counted as part of his learning load. It is instead an entertaining and relaxing tool. Similarly, for many students in this CMC class, their previous experience of computers was more social than academic. As reported, their main purposes of using computers before were watching movies, listening to music, chatting with friends and family, using emails to exchange songs and lyrics, among many other recreational activities. Introducing CMC into the classroom therefore means bringing play into learning for some students. Frequent evaluations from the students towards the CMC environments included providing freedom to share ideas, being more pleasant, and creating low pressure. The fact that CMC affords a ludic approach to learning creates much motivation and therefore involvement.

Additionally, when it comes to comparison, the wiki-based asynchronous peer exchanges prove to be more user-friendly than the Yahoo! synchronous discussion. This made the students more committed to and prepared to invest more effort in the collaborative process as well as the final outcomes. Below is what Phuong in the CMC group 0210 personally shared on the researcher's blog. Phuong expressed her thanks to the researcher for providing for herself and other classmates a new way of learning English in general. For her, the wiki was certainly not only a cognitive environment for learning and collaboration but also a social platform for sharing emotions.

Wiki does encourage us to leave comments on our partners' writings. Just visit group 10 to see that 🌐. Furthermore, this is also a good place for us to share things happening in our daily lives, which are now gradually reduced to meet the study requirements. I myself feel so close to my crew thanks to wiki. Thanks so much for this helpful website, teacher. (Phuong, 0210)

The integration of CMC into conventional classroom practices may also bring added burdens into learning for most other students, who were not 'in the flow', i.e. their existing language and computer skills did not match the challenges. Responses to the challenge were mixed. Some students raised the issue of technology-related knowledge as the major barrier for them to overcome and took a setback stance. In contrast, the majority of participants took a more adaptive attitude toward the CMC-based learning model. They took opportunities to request technological as well as cognitive support from the teacher and other class members: they created and put themselves in the ZPD. These students experienced the online environment as the one to which they could and should contribute, as expressed by Yen (0203), "everyone feels that they must talk." It is this distribution of expertise that corroborates the fact that the students themselves are considered as a significant source of knowledge.

In brief, from the ecological perspective of sociocultural theory, there is a dual relationship between the learners' goals, needs, and intentions of use, or "cultures of use", to use Thorne's (2003) term and the properties provided by the CMC environments. Putting together the three components of technology, participants' characteristics, and their relationship, it can be seen that the CMC technologies in the

current study afforded the cognitive, social, and affective ecologies for the students to raise individual voice, to communicate diverse views, and to develop community (Warschauer, 2010), based on which they were able to interact, to negotiate, and therefore to synthesise information toward a satisfactory level of collaborative learning. More importantly, the affordances that the CMC technologies brought about in the current study basically transformed human actions and the flow as well as structure of mental functions (Warschauer, 2005).

### ***9.3.3 The teacher's roles in CMCL environments***

Another emerging area of interest was the roles that the teacher played when the classroom practices moved from the teacher-fronted method to group-based learning then to the online collaborative learning process. It is argued that positive dimensions regarding the roles of the classroom teacher are evident from the current study. The teacher was able to limit his traditional role as a knowledge transmitter, professing knowledge in the teacher-fronted model of instruction in both classes. Rather, the online mode of collaborative learning was in line with sociocultural perspectives in allowing the students to discover and construct concepts themselves through interacting with each other.

The introduction of collaborative learning is considered an innovation in Vietnamese classroom practices as it partly transforms the teacher-fronted method of instruction to a more learner-centred approach to language education. The classroom power therefore shifts from the teacher to learners. In this study, the teacher had different roles in the two classes. Taking collaborative learning online is another innovation, in the course of which more cognitive- and academic-oriented teacher roles, rather than just logistics and pure classroom management, are experienced, which is discussed below.

On revisiting the three critical characteristics of collaborative learning, suggested by Ingram and Hathorn (2004), namely (1) interdependence on each other among group members, (2) synthesis of information, and (3) independence of the teacher (cf. section 3.3.2.3), it can be seen that the first two attributes are positive and confirmed. In other words, the more interdependence and synthesis of information a group attains, the better it is in terms of collaborative learning. The third attribute regarding

the independence of the teacher, however, brings about further issues. What level of independence does a group need so that it can obtain a satisfactory degree of autonomy? Is it the more, the better as regards collaborative learning?

The answer may be examined from one of the SCT components, ZPD. The extent of involvement or interference from the teacher should be determined by the students' academic and sociocultural background. It can be seen in the present study that the teachers' role in conventional collaborative practices was more of logistics and management. The teacher's involvement at the cognitive level was limited because of the nature of the traditional methods of group-based learning: he had to move to and fro between groups during the FTF discussion just for encouragement and for making sure the groups were on-task and not doing something else, such as chatting, teasing, or any other types of small talk. Because of this, only portions of the conversations were heard and these group discussions were therefore hardly contributed to by the teacher. The teacher therefore had less control over monitoring the learners' use of language in the traditional FTF method of learning. Additionally, the involvement was more limited in the pen-and-paper peer review procedure when this was done out-of-class time. All the teacher had was the finished drafts written and edited by the students. The teacher's roles in these traditional collaborative practices are thus seen as more of housekeeping, ensuring the procedures remain on track.

On the other hand, teacher engagement in the CMC-based collaborative process was at a more academic and cognitive level. Though some technical instructions were inevitable in online group work as this was the students' first time of learning in a rather new and technically challenging academic setting, this type of involvement would hopefully be reduced in future when the students were used to learning in this technology-enhanced environment. The teacher's academic-related support was afforded in the CMC ecology. In both modes of learning with CMC, i.e. synchronous discussion and asynchronous peer review, most of the trivial housekeeping issues, such as collecting scripts and drafts, delivering learning materials, and tracking the peer review process, were undertaken by the technology and the teacher was therefore able to observe what the students were doing in terms of contribution and interaction. In particular, it was possible to view how the students were using the

language as part of the collaborative process. Moreover, this observation could be done anywhere and anytime in the Vietnamese teacher's busy teaching schedule. Scaffolding generated by the academic and cognitive related support from the teacher (cf. Figure 3.3) assisted the learners toward the process of internalising knowledge constructed in the ZPD, from the inter-psychological plane to the intra-psychological plane. The teacher in these online collaborative activities is seen as a mediator among the students, and between the learners and technology, as well as between the learners and knowledge.

Overall, in supporting the learners during the collaborative learning process, the teacher's role could be of two types: one concerned more logistics and management, the other was more academic and cognitive. In the current study, CMC technologies actively transformed the pedagogical classroom environment by decreasing the first traditional type of teacher's involvement, at the same time increasing the second, more important and progressive type in the collaborative process of learning. While both methods of learning engaged the teacher's involvement, the learning autonomy of the online class was evidently and positively high, as compared to that of the control class. It is argued that the teacher is, and will be, needed in collaborative learning in general and in online group-based learning in particular. Only the nature of the teacher's role may be modified from logistical housekeeping to cognitive mediating. Complete independence of the teacher in collaborative learning seems unlikely, especially in the Vietnamese sociocultural context, where the teacher's evident presence remains a strong expectation. An entry from one of the CMC students, taken from the researcher's blog, demonstrates one of the particular roles of the teacher in the online environment, as follows:

To be online at home has one obvious disadvantage: cannot hear the instruction of the teacher. I wonder how to solve this kind of problem 😊. (Phuong, 0210)

#### ***9.3.4 Product-oriented versus learning-oriented***

If ignoring a challenge is synonymous with denying a learning opportunity, as argued by Beatty and Nunan (2004) in their research on computer-mediated collaborative

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learning at the computer, then the students in the traditional method of collaborative learning in this study failed to grasp chances for learning. These students tended to ignore challenges to negotiation because (1) the Confucian styles of group work did not encourage them to argue, (2) indolent students who were reluctant to participate had a laissez-faire behaviour, letting active and responsible members do most of the work, and (3) less proficient students were not confident to contribute and therefore were drowned by other, more language proficient, members (cf. section 2.2.2). Most of the ideas were quickly agreed on among members in these control groups and they seemed to be in a hurry to come to the final products. Notably, based on these final products, the students are graded and assessed, as the only method of evaluation so far.

On the other hand, learning through negotiation and challenge is an outstanding feature revealed by the online exchanges. As a form of interaction, negotiation for meaning is a common term in both cognitive and sociocultural approaches to second language acquisition. Both approaches underscore that the process of negotiation for meaning facilitates second language acquisition. From a cognitive framework's point of view, meaning negotiation assists in making incomprehensible or partly comprehensible input comprehensible, thereby bringing learners within the optimum of Krashen's  $i+1$ . Similarly, socioculturalists consider negotiation for meaning as a significant element since it creates a route for learners to cross the border to Vygotsky's ZPD (cf. section 3.2.3). Within the cognitive regime, 'interaction assists learning' whereas 'interaction is learning', from the viewpoint of sociocultural theory. Though different in theoretical and methodological views, both approaches highlight the importance of interaction as an instrumental platform for negotiation of meaning. Creating a constructive environment for interaction and meaningful negotiation is considered a challenge for language teachers and researchers.

The current study shows that the online students appeared to have a more constructive attitude toward group work. Motivation from the two modes of CMC encouraged the students to become more cogitative and active. As for the chat process, the lack of facial expressions and no turn-taking competition transformed the passive Confucian style of learning and liberated more marginal members of the class. Less capable students felt confident to contribute ideas and challenge ideas

from others. In addition, more idea contribution and challenge also resulted from the fact that the discussion was text-based, which allowed them to see the language of the conversations, served as thinking devices and provided them with more time to reflect on the ideas generated. Moreover, reflective learning which is believed to lead to a successful learner-centred learning environment (White, 2007), was more evident in the asynchronous wiki exchanges. The multi-way interaction pattern of the wiki-based peer review seemed to be exclusive to online, as compared to the paper version. While the paper mode of peer feedback was in a linear sequence, the wiki-based method of the review process was truly interactive and thereby more reflective. Various instances of challenge and negotiation were observed in these wiki-based asynchronous exchanges. This contributes to the interpretation that the social-oriented development of CMC technology encourages creative and reflective learning practices. To sum up, the motivational and favourable features of CMC technologies per se can encourage a learning-oriented process of collaborative learning.

It is of course unreasonable to hastily deny all of the efforts made by the control groups during this process of collaborative learning. This is evident in the final collaborative products of the paper version which are by no means worse than those produced by the online groups. More specifically, as discussed in Chapter Seven, the final essays made by the control groups were still better in terms of organisation and structure. It is therefore argued that each type of learning or experience, i.e. product-oriented and learning-oriented, has a complementary place depending on which cognitive views the teachers and the institution support. On the one hand, the psycholinguistic view of cognition construes the language learning process as being within the individual mind (Ortega, 2007) and therefore emphasises the significance of final products as a main measure to evaluate a learner's language proficiency. This view of language education has remained well-established and dominant in the Vietnamese Confucian-influenced educational context and not excluding, of course, Danang CFL, where public attention is paid much less to how students are learning than to how well they perform in exams. This conventional view is not easily rejected or transformed at once. On the other hand, another, more progressive, view of cognition is that of Vygotskian sociocultural theory. According to this theory, language cognition occurs first between individual minds and then within the

individual mind during the internalisation process. It is therefore best understood in the social, cultural, historical, and institutional context in which a learner is embedded. Because of this, both product- and process-oriented learning styles are equally important and should be treated in an equal manner.

The online, more learning-oriented, type of collaboration applied in the current study appears to be more progressive in terms of recent trends in CALL, sociocultural SLA, and collaborative affordances of the latest CMC technologies (cf. section 1.2). It is because firstly most of the comparative criteria employed to analyse the final essays were, though just at the indicative level of trends, positively higher in the online modes of composing. As far as their limited computer knowledge was concerned, this is a success when it is considered that the application of CMC technologies in the traditional classroom was meant to bring in more newness and challenge for the students, on top of the conventional dense timetable they had to follow.

Secondly, not only did the online final essays seem to be better than the paper version in most ways, but individual members were also able to ‘learn’ more during the collaborative process. The idea of ‘learning’ in progress is significant in light of SCT perspectives. Group, or inter-psychological, learning as a rule paves the way for individual, or intra-psychological, learning. In addition, a pedagogical movement has naturally transferred from a confined focus on individual learning and final products toward a more process-emphasised conceptual approach to language development (Kern & Warschauer, 2000; Stahl, et al., 2006).

Thirdly, if one is in support of the synthesis of information as a critical attribute of collaborative learning (Ingram & Hathorn, 2004), then one may need to explore the potentials that CMC-based methods of collaboration bring forth. It is the ‘learning’ nature of CMC-mediated interactions that results in a high level of information synthesis among group members and that constitutes collective cognition, as proposed by Stahl (2005) in his study on group cognition in computer-assisted collaborative learning. Above all, if one is in favour of the collaborative style of language learning, one should assent to the notion of “collective production”, as defined by Lund (2008, p. 36), being related to product as well as process.

In summary, on looking back at the fundamental assumptions about CLT, viewed from an SCT perspective (cf. section 3.3.1.2), it can be seen that both forms of collaborative learning, either FTF or online, are significant (assumption four) in a CLT classroom because they help improve learners' linguistic performance through ZPD via collaborative learning with peers (assumption three). Nevertheless, the online collaborative learning attained a higher level of satisfaction in terms of ZPD. Furthermore, it can be confidently asserted that online collaboration supports the first assumption, stating that language is best learned through active negotiation of meaning, as well as the second assumption, indicating that learning is better attained when being mediated by social and cultural tools.

## CHAPTER TEN: CONCLUSION

### 10.1 Overview

The chapter begins with my personal reflections of the process of conducting this PhD research. As an insider in this Vietnamese tertiary EFL context, I believe that it is worth reflecting on the findings in order to examine to what extent the outcomes of the study met my own expectations and assumptions. This is then followed by several implications and recommended future lines of research. The chapter ends with concluding remarks.

### 10.2 Reflections

The purpose of this study was to examine the effectiveness and perceptions of CMC technologies in collaborative foreign language learning in a Vietnamese sociocultural context. The research objective was manifested in the four research questions. While the first two questions dealt with the process of collaborative learning, the third one focused on the final product of the process and the last question gauged the learners' reflections and perceptions of the CMC-enhanced learning environment.

Of the four questions, I feel that my investigation of the first one was the most satisfying. I managed to explore every corner of the discussion process, first from transcripts then to the learners' reactions to the course of discussion via the after-chat group interviews, along with my role as a teacher, a moderator, and a facilitator. One of the findings in this question that met my expectation was the more equal participation patterns in the CMC groups. This, on the one hand, confirmed what has been concluded in the literature, and underlined the value of the use of chat in the language classroom, on the other hand. However, the amount of time spent by the CMC group on chat was what was unexpected. Even though I had anticipated that the CMC groups would need more time than the FTF groups to complete their discussion task, double the time was unbelievable. As discussed, this might mean

that CMC students required more time to complete the chat discussion and also that online chat involved more contribution and attention to learning from these students.

The next most satisfying research question to be answered was the fourth, which probed my students' perceptions of the technology-rich environment. Through a series of post-project questionnaire items and individual interviews, I was able to delve into their minds in order to attain better understandings of what they perceived and reflected. In addition, the feeling I perceived during these interviews was that they were more mature than I had thought. This was because of the Vietnamese-style classroom atmosphere, as discussed in section 2.3.5, in which the teacher oftentimes plays a superior role and students, inferior in almost all aspects. Students' ideas are therefore rarely consulted, and all decisions in the classroom are from the teacher. Nevertheless, when it came to asking them for ideas, as I did during the interviews, I was surprised by the profound opinions and insightful reflections they expressed. A multitude of implications was drawn, based on these manifestations.

Research question two was also investigated in depth. However, partly due to the newness of the platform in the literature and partly because the obvious pre-eminence of the wikis over the paper-based method in collaborative learning, the discussion for this question was not so profound as those in the two above-mentioned research questions. What interested most from this section was the huge number of comments produced by the wiki-based groups. Furthermore, apart from just exchanging feedback, the students subconsciously turned the online platform into a community of learning. Another noteworthy point is that the online groups tended to be more critical in their comments than did their friends in the paper-based mode of exchange.

Similarly, I am not so content with the discussion for research question three, which examined the final products of the collaborative task. The question was explored more with a cognitive approach than a sociocultural perspective. This made the discussion unbalanced; but finding ways to delve into it in a more sociocultural approach was a challenge for me, as a researcher. In addition, taking the comparison between the two sets of essays in terms of language improvement into account, this was a much less meaningful question than it had appeared to be in planning the 12-

week data collection process because it normally takes years for the students to reach the goal of English proficiency. Eventually, the aim was not necessarily to improve their English but to extend their use of English in new domains, both virtual and functional.

Overall, what I believe benefits the Vietnamese students from the research, in terms of collaborative learning, is that the activities have gone beyond the traditional classroom box, into a wider world. The fact that CMC technologies bring the outside world to the classroom and take learning activities out of the classroom is significant, but less important than the reality that technology is able to expand the world within the classroom, turning the students from pure knowledge receivers to critical information facilitators. In other words, CMC turns communication into substance, in this particular sociocultural setting. Another significant benefit to be drawn from the research is that there is a transformation of the teacher role, from traditional classroom logistics and management to more academic and cognitive concerns, which was observed in both modes of CMC, i.e. Yahoo Chat and PBWiki. Finally, what I most desire to inform the college staff about is the need to change assessment methods, from product-based only to a combination of process- and product-orientation. This in turn requires thorough efforts, not only from the staff themselves, but also and more importantly, from higher management levels.

As far as the process of conducting this thesis was concerned, searching for a robust conceptual framework for the data analysis was the longest and most painstaking period. It was the most confusing time for me as I decided whether to apply an existing framework for analysis from the literature to the collected data, or to build my own framework. After a number of trials and errors, the final decision I made was, as presented in the methodology chapter, the inductive analysis process aimed to discover categories and interrelationships emerging from the data rather than through predetermined hypothesis (Stacey, 1999).

In conclusion, the three-year period of the PhD life has in general deepened my understanding of how CMC technologies would be able to improve language proficiency, from theory to practice. I was a user of technology in language education before; now I can be confident taking a new role as a researcher in the

field. This is evident by the fact that I have authored and co-authored a series of journal publications and conference presentations, which present material from this research, for the past three years (Appendix Z). I started the thesis with a technology-driven approach to language learning; now I feel convinced that the learning phenomenon should be looked at from a more pedagogy-driven perspective. Related to this, I would argue for Egbert's (2010) perception that the definition of digital divide in language education should be less about the separation between those who possess technology and those who do not, but more on the disparity between effective and ineffective uses of technology. In addition, the digital divide in technology-enhanced classrooms between good use and poor or no use is able to be bridged with comprehensively pedagogical approaches. Finally, I commenced the study with a psycholinguistic perspective, which construes the learning process within the individual mind and emphasises the significance of final exams as a main measure of assessment; now I am enthusiastic about bringing a sociocultural view of cognition to language education. This more progressive perspective highlights the learning process between minds.

### **10.3 Implications**

Presented below are three areas of implication that I would like to discuss. While the theoretical and methodological implications focus on the research side of the study, the pedagogical implications directly concentrate on workable classroom practices.

#### ***10.3.1 Theoretical implications***

Keeping in mind the shortcomings of constructivist pedagogies as applied to a CMCL setting (cf. section 3.3.2) and adopting the sociocultural framework, I carried out the current study in the Vietnamese social and cultural context of language learning. Similar to one of the studies by Vygotsky (1981), this research examined how the students in this sociocultural setting made use of external support, i.e. CMC, to control their activity, i.e. to complete the collaborative task. Results drawn from the present study as informed by genetic analysis (cf. section 3.2.1), which took into consideration aspects of learner characteristics, teacher role, and institutional and societal setting, confirmed the actuality that the application of CMC technologies in

language education can only be understood when placed in a wider historical, social, and cultural context (Warschauer, 2005).

As far as mediation, an important construct of SCT, was concerned, the CMC technologies applied in this study evidently played positive roles in the learners' language development. For these students of EFL, the English language is both an object of learning and an artefact mediator. In other words, they use the language as a mediational tool in order to learn the language itself. In this context, CMC played a role as mediator of the other mediational tool (language); and one of the purposes of this research was to examine this particular role of CMC. Results of data analysis demonstrated that the CMCL environment, by providing both social mediation and artefact mediation (Lantolf, 2000), has modified learners' learning behaviours and communication patterns. The delicate sociotechnical affordances of the CMC technologies used in the study mediated the collaborative process of learning, as defined by Ingram and Hathorn (2004).

Moreover, the online collaborative learning allowed the students to attain a group zone of proximal development. Throughout the process of collaborative learning in both synchronous and asynchronous modes, the majority of students created a sociocognitive space to put themselves and other members in collective scaffolding patterns. As is evident from the study, the students received support from more experienced others, i.e. the teacher and group mates, within the ZPD to obtain a level of competence that they would not be able to attain on their own. In other words, the CMC technologies bridged the gap between the external/social plane to the internal/psychological plane through the process of internalisation, which in turn and more importantly serves as another bridge to form group development, or collective ZPD. According to this concept of collective ZPD (Lund, 2008), the emphasis is less on the transfer of skills and knowledge from the experienced to an apprentice, but more on the creation of meaning through the collaborative use of tools. In addition, as part of the notion of ZPD emerges the distribution of expertise. This can be attained not only from the sociocognitive capacity but also from social and organisational skills. Various social and organisational aspects, as discussed previously in the results analysis, are considered as important elements, affecting the

quality and nature of online collaboration. In other words, the social aspects of learning emerge as a crucial component as viewed from the concept of ZPD.

To sum up, by putting the research into the particular sociocultural context, it is argued that the application of CMC in a language classroom is in line with sociocognitive perspectives, informed by a Vygotskian framework. The study arguably highlights the significance and importance of the sociocultural theory, as a mainstream theoretical base, in language teaching and learning. In addition, the interplay between CMCL and CLT would be better understood when viewed through this social prism of SCT.

### ***10.3.2 Methodological implications***

The application of mixed methods research is encouraged in the world of foreign language education enquiries (Dörnyei, 2007); this study is an example. In fact, the complex nature of classroom-based research lends itself to this kind of mixed research. Both quantitative and qualitative methods of data analysis were used in the current study. As is the nature of this mixed methods research, a number of instruments were employed to examine the sociocognitive, socioaffective, and organisational aspects of collaborative learning. The significance of this ‘between-methods triangulation’ is that it can be readily cross-verified, thereby increasing the reliability of the results analysis. Generally, the use of both methods of data analysis, i.e. quantitative and qualitative, is one of the strengths of the current research.

Searching for a feasible conceptual framework for data analysis is another contribution of this study. The methodology of this research demonstrates that the selection of a particular analytical framework is based marginally on the data itself and largely on the aims and purposes of the project as a whole. In the present study, the inductive analysis was designed to locate subcategories and interrelationships arising from the data rather than through predetermined deductive suppositions. Similar studies are not encouraged to employ pre-existing coding schemes. Due to the fact that each research has its own aims, purposes, and objectives, the use of the coding scheme of a previous study seems obsolete and unpersuasive. Rather, while it is possible to use an applicable framework for coding, topics arising during the data analysis should be taken into careful consideration. Analyses and discussions based

on these emergent subcategories will make the research unique and convincing. The data analysis and coding process in the present study was based in part on the theory of collective activity suggested by Mangenot and Nissen (2006), but mainly on subcategories that arose from the analysis of transcripts and comments.

In addition, regarding the nature of talk in the synchronous discussions, episodes were used as a unit of analysis. The data analysis process revealed that coding the SCMC chatscripts were much harder and more time consuming than coding the FTF transcripts. Because episodes in the chatscripts were more overlapped and more chaotic, the standard chunk-by-chunk formula appeared to be complex and unfeasible. Therefore, principles of computer-mediated discourse analysis (CMDA), introduced by Herring (2004), and thread theory, proposed by Shi et al. (2006), were employed in order to resolve the complex nature of the chatscripts. While the use of CMDA aimed to examine online behaviour through language use, thread theory provided an analytical method to explore the interactional process of SCMC.

Finally, the data analysis process was also extensively and efficiently supported by computer-based analysis programs. These programs saved a lot of time and increased accuracy during the analysis process, which would not have been possible by human manipulation. Various computer-based programs were used in the current study. First, SPSS 17 was employed for quantitative and statistical interpretations in both main sources of data: synchronous discussions and peer review comments, along with data from the two sets of questionnaires. Second, the analysis of turns in the synchronous discussion was also supported by the use of CLAN (Computerised Language Analysis), specifically designed for conversation analysis. Third, Oxford Wordlist with its three language-related analytical functions, namely Concord, Keyword, and Wordlist, was used to analyse the three linguistic features of the final collaborative products, i.e. the 20 final essays. Finally, NVivo 8.0 was evidently powerful in qualitative data analysis in both synchronous and asynchronous data, as well as the interview transcripts. All of these programs assisted in organising data in a systematic and manipulatable method, which was useful not only for the current study but also for future reference. In a word, it is of course dependent on individual preferences and expertise: each researcher may have their options regarding the manipulation and examination of data during collection and analysis. However, the

application of computer-based programs to support analysis is encouraged when undertaking the complex nature of mixed methods and classroom-based research.

### ***10.3.3 Pedagogical implications***

This classroom-based research has confirmed the view that the integration of CMC technologies into collaborative learning is feasible and applicable. Promising potentials in terms of pedagogical implications include extending the classroom boundary, providing sociotechnical affordances, modifying the teacher's roles, and supporting a view of process-product combination in learning and evaluation.

However, in order to transform these potentials into practical efficiencies, much preparation is needed. The current study reveals that learners' technology-related expertise is a crucial element, deciding the success (or failure) of the CMC application in a language classroom. Learners' levels of computer as well as typing skills should be carefully gauged before an actual classroom practice. Based on this type of survey, the teacher may decide how much and in which area of technology knowledge learners need to be trained and equipped. Most importantly, a survey of this type should also include an examination of learners' language levels, based on which the teacher designs suitable tasks and assignments that should be within the learners' ZPD. As a complement to this, the purpose of collaborative learning and CMC integration should be clearly explained to learners. Several classroom hours should be spent on discussing with students the benefits and challenges that collaborative learning in general and computer-mediated collaborative learning in particular bring about. Part of the survey should also include an option in which students may choose not to participate in a CMC-enhanced activity and/or classroom. Clearly, computer-mediated collaborative learning should not be made compulsory at an introductory stage. As the current study indicates, CMCL does not automatically bring about better learning than the traditional method of collaborative learning. Learners' motivation and willingness to participate appear to be a key to success. Furthermore, infrastructure is another crucial issue. An examination of the technology capacity of the institution is needed, including how strong computers in the lab are, how fast and consistent the network is, and what types of software are required for installation, among many other factors, based on which the teacher may

need to adjust his/her plan of action. It must be emphasised that education is a system; when a new element, CMC in this case, enters the system, it triggers some turbulence and disorganises it (Menezes, 2008). The issue of how an application of CMC to classroom fits with the current curriculum, often quite rigid in the Vietnamese education system, needs to be investigated.

As evident from the present research, the teacher's roles were drastically modified from a transmitter of knowledge to a facilitator of the learning process; and from a logistical housekeeper to a cognitive mediator. This is due to the fact that (1) the classroom boundary expands, entailing an exponential increase in the rate of exposure to knowledge and that (2) the collaborative learning process itself transfers some of the classroom powers from the teacher to the students. Learners in this environment are not passive receivers of knowledge, but rather, active agents of information. Though still playing a significant role in a language classroom, the teacher has to prepare for this change in terms of classroom management, teaching styles, and knowledge improvement. He/she must, first of all, possess a satisfactory level of expertise in educational and instructional technology in order to thoroughly manipulate the various CMC technologies applied and to assist students in learning effectively with technology. As the teacher is not the sole store of knowledge, teacher-fronted lecturing styles are minimised and replaced with a learner-centred pedagogical environment. He/she becomes a facilitator of learning from different sources. This in turn requires the teacher to continuously improve his/her knowledge of the field in order to successfully coordinate and facilitate students' learning process. Last but not least, as learning activities have moved beyond the classroom border, how the teacher is able to monitor or track these out-of-class activities is another skill and effort that he/she needs to be equipped with. To recap, it is hoped that after some turbulence and chaos (Menezes, 2008), a new model of the system is achieved with extensive preparation and self-improvement from the teacher.

The learning process in this study, including the two stages of collaboration, revealed that while the wiki confirmed its place in the collaborative learning process, the synchronous text-based mode of discussion left some questions regarding its effectiveness in developing language proficiency. Among these issues, as discussed previously, SCMC is still inferior to FTF discussion in terms of quantity of

production. The number of words produced by the online students was far fewer than those generated by the students in the control class due to (1) the newness of the communication mode; (2) the learners' computer and typing skills; and (3) oral production by nature generates more words than written production within a specific timeframe. In addition, text-based only SCMC cannot accommodate all language skills and areas in terms of practice. The lack of listening and pronunciation components may raise another issue of concern. It may therefore be worthwhile to combine both forms of discussion, i.e. SCMC and FTF, in various classroom activities in order to facilitate the coverage and exposure of all language skills and areas. Another solution may be to integrate aural and visual functions into SCMC discussion in order to compensate for the lack of physical co-presence. In fact, there have been several research studies that combined text, audio, and video (Paulus, 2007). In contrast, the wiki strongly claims its superior place in the language learning process. Empirical evidence from quantitative data and students' reflections showed that wikis could, without a doubt, replace the traditional method of pen-and-paper peer feedback thanks to the sociotechnical affordances that they offer. The application of wikis to peer review and the collaborative learning process is therefore strongly recommended.

Methods of assessment turn out to be another crucial issue in this CMC-enhanced collaborative learning. First, looking from whatever view of education, final products are a key to indicate the level of success in learning. Findings from the examination of the 20 final essays from the two classes showed that there was no statistically significant difference between the two sets of results. This is because only a short time learning with technology can hardly result in a significant improvement. This also indicates a success gained by the online groups, taking into account the fact that introducing CMC into the already heavy curriculum meant bringing in more challenges for the online students with limited computer expertise and that this was their first time learning in a technology-enhanced environment. In addition to the roughly equal results in the final essays, the online students were evidently able to learn during the collaborative process, and this learning-in-process has been proved to be a significant factor, viewed from sociocultural perspectives. Therefore, taking together product and process, a suggestion is that part of the assessment should be transformed from the product-only method to the process-product method of

evaluation. This, of course, requires discussion and approval from not only teachers but also from various levels of management.

Finally, one of the other pedagogical significances of the current study is that the participants are teacher trainees. Pedagogically, people tend to teach in the way that they have been taught. This is one of the ideas that inspired me to select the classes of BA in TEFL as the subject of my study. By introducing some of the current approaches to language teaching and learning, it is hoped that the students will be able to apply what they have learned in this course in a technology-enhanced environment, with a range of CMC technologies, into their future teaching career in secondary schools of various levels.

#### **10.4 Limitations**

In considering the limitations of the current study, the first that comes to mind is time, which is one of the outstanding restrictions in the present research. The fieldwork project took place in only 12 weeks within the college's official timeframe for a semester. This was beyond the researcher's control. Second, the distance between the research site (Vietnam) and the research institution (New Zealand) was also a constraint for this study. This prevented me from conducting a pilot study, which is believed to help minimise shortcomings related to the research design, such as familiarising the students with the new learning environment. This meant that part of what was captured was the students' adaptive learning to an unfamiliar environment, and this was then compared to what they did in a familiar environment.

Another limitation of the study includes the participant selection, which was not random, making this research a quasi-experiment, rather than randomised or true experiment. In addition, the current study reported on the collaborative learning process of two classes of 30 students each, who are taking a BA in TEFL course, in a college of foreign languages at a large university in Central Vietnam. The results are restricted to this particular group of students in this sociocultural context.

The validity of the research is further threatened due to the fact that groups were able to communicate and discuss outside class, which made it impossible for the researcher to capture and analyse all task-related interactions. Additionally, the

reliability of the study would have been stronger if the two raters had coded together the entire data sets from the two stages of collaborative learning, i.e. synchronous discussion and asynchronous peer review. In the present study, only about 20% of the overall data sets from each stage was coded and compared between the two raters. The researcher himself coded all the remainder of the data having reassured himself of the reliability of the coding system.

While all of the limitations above might make it hard for the thesis results to be generalised, they neither overlook potential Hawthorne effects (Cook, 1962) nor ignore the sense of novelty that might influence the discussion of the findings. It is however essential to highlight that the rationale of the current study is not only to investigate what is distinctive but also to research what may be, and what is likely to become more common practice. Future researchers conducting projects in comparable contexts can be expected to find useful information from this research to apply to their own settings.

### **10.5 Directions for Future Research**

Below are some of the suggested directions for future enquiry that the researcher wishes to follow in his future research agenda and that are recommended for other researchers who may be interested in computer-mediated collaborative language learning. Some of the following areas of interest can be investigated by revisiting and further analysing the existing data sources, which were not be able to be included in the present thesis due to the scope of the thesis itself, the limited time, and especially limited knowledge of the researcher. Other suggestions require new research projects with new tools and methodologies.

First of all, based on the limitations discussed above, future researchers may be required to find ways to eliminate these shortcomings in order to increase the level of generalisation, validity and reliability of their research. For example, data collection should cover a larger sample, over a longer period of time, through a research design with randomised experimentation. It is of course a challenge to get rid of all of the three drawbacks in one single study; however, the more the better.

The current study found that in spite of being limited in terms of language production, the online synchronous students experienced a more equal participation as compared with the involvement pattern made by the traditional FTF groups. One of the main reasons for this was that SCMC provided an egalitarian platform for all contributors. In other words, while in the FTF discussion, group leaders clearly demonstrated their roles by contributing more and controlling more, this type of conventional role did not occur in SCMC. The question raised is what determines role assignment in an online synchronous discussion. A similar study by Paulus (2003) concluded that roles did emerge during the collaborative process. Some may assume the role of an editor while others may be an organiser. Other roles that may be anticipated from the current research include information provider and idea criticiser. Another question is: are these roles assumed by the same person throughout the collaborative process or are they subject to change? If the latter possibility is confirmed, then what triggers the shift in role assignments? In addition, though it is evident that a more equal participation in terms of quantity is obtained from online discussions, are students also able to attain an equal contribution in terms of the quality of talk? It is therefore worthwhile revisiting the data to investigate the learners' roles during the process of discussion. Likewise, a similar direction for future research can also be applied to the wiki-based peer review process.

The present study also confirmed the fact that it took the online students more time to conduct their discussion task. Selected reasons for this were (1) the learners' limited computer and typing skills, (2) this being their first time of learning English in the CMC-enhanced environment, and (3) the text-based mode of communication. Much research in the literature has investigated the nature and quantity as well as quality of 'talk' during chat, while it is hard to find any research that examines moments of 'silence' during an online synchronous discussion. FTF students' 'silence' periods can be explained since they need to listen to their partners and to think what next to contribute in the discussion. While online learners do not have to listen to their group members, what do they do during 'silence' periods? Why do they need to do what they are doing? And how do these periods of silence help towards the psychological and cognitive development of individuals and towards the successfulness of the discussion they are participating in? In order to answer these questions thoroughly,

text-based chatscripts alone can hardly be a single source of analysis. Other tools of research may be required, such as video-recorder and screen-recorder, to capture as much as possible of learners' behaviour during the interaction process.

The teacher's roles in the collaborative language learning process may be another direction for future research. Findings from the current thesis indicated that the teacher had different roles in the two different methods of collaborative learning. How much do these differences affect the collaborative learning process? A revisit of the data sources of both the synchronous discussion transcripts and the asynchronous wiki-based peer review data is needed to explore more of the teacher's roles, such as what are they? And, how does a specific role contribute to the online students' collaborative learning process? Furthermore, the teacher's cognition and attitudes toward the application of CMC technologies in a language classroom need to be comprehensively investigated. In the current project, the researcher played the role of teacher. This may result in several advantages regarding data collection and management, classroom control and observation, and student-teacher interrelationship. This however triggers some disadvantages, among which is how to separate these two roles, i.e. researcher versus teacher, for investigation and research. Potential issues of objectivity may hinder the researcher from coming to conclusions regarding the teacher's attitudes and perceptions. It is therefore suggested that (1) based on the existing data source, a follow-up research is carried out to investigate this area of interest as regards the teacher's cognition, which in turn requires a new skill of narrative research, and (2) new research in a new context, in which the researcher and teacher roles are separated, is conducted.

As regards the wiki-based peer review process, the present study limited its analysis to the quantitative and qualitative examination of the feedback generated by the students. A further direction of future research is required to investigate how much learners consider and make use of comments by group members in their revision (Liu & Sadler, 2003; Zeng & Takatsuka, 2009). Again, the existing data source can be revisited and reanalysed to explore the extent to which students revised their drafts according to their group members' comments. The level of wiki-based revisions can then be compared with previous studies in the literature in order to examine the social oriented potential of wikis to revision.

An investigation into the sociotechnical affordances of wikis in particular and of web 2.0 in general is another direction for future research. The present thesis reserved a separate section in the further discussion (cf. section 9.3.2) to review the sociotechnical affordances of the CMC environments in general. In this section, the sociotechnical affordances of both Yahoo! chat and PBWiki were presented, covering the social, affective, and cognitive ecologies that these two modes of CMC technologies offered. Future research should intensively and extensively examine affordances provided by wikis, as a principal member of the web 2.0 family. If a future study investigates wikis in terms of peer review like the current one, then how peer exchanges on this socially oriented platform are different from those made with traditional CMC tools, such as email or other learning management systems is an interesting avenue of investigation. Wikis are of course not only used for peer review; they can be used for other research studies on collaborative learning. For example, explorations of the sociotechnical affordances of wikis can be directed to other areas of second language acquisition and collaborative learning, such as attention to meaning (Kessler & Bikowski, 2010), and focus on form (Kessler, 2009), among many others.

Finally, empirical research on English language education in the Vietnamese sociocultural context is, at the moment, very limited. Much more research in language education in general and the application of technology in language teaching and learning in this particular sociocultural setting are expected in the near future. This thesis only touched on one dimension of language education issues in Vietnam, with an ambition of contributing to the movement of ‘The Year of ICT Application’ in 2008. Future research is therefore needed for other dimensions regarding Vietnamese educational initiatives, especially in the field of technology in language education.

## **10.6 A Last Word**

CMC technologies, no matter how advanced they become, are not designed, and are hardly able, to replace human FTF modes of communication (Dooly, 2008). But avoiding the use of technology in general and CMC technologies in particular in today’s language teaching and learning is seen as a setback because they are believed

to facilitate teachers and learners in creating communication opportunities, which is the primary goal of CLT (Hadi, 2007) and is informed by SCT, and because promisingly “the computer was born to solve problems that did not exist before.” (Bill Gates). A definition of literacy in the Vietnamese context (cf. section 2.2.1) should not only contain the debated notion of being able to read and write in one or two languages, but it is argued that a complexified and extended view of literacy also includes online literacies which entail the ability to participate in and contribute to online communities. A suggested itinerary for technology to enter a language classroom may start from introduction, followed by integration, and then normalisation. Normalisation, or nibbling away the term CALL, is a long comprehensive and complex process that needs a great deal of effort and investment from all stakeholders in the language education process.

Finally, along with the socially oriented development of communication technology, collaborative learning is, more than ever, a necessary and sufficient factor in education in general and language development in particular. Students’ future employability may precisely require, more than just standardised product-oriented test performance, both language skills and online communicative competence as well as expertise in successful collaborative endeavours as part of teamwork effectiveness, as concluded by Dooly (2008) and Storch (2005). This helps provide an answer to Gerhard Gschwandtner’s famous quotation, “the purpose in life is to collaborate for a common cause; the problem is nobody seems to know what it is”.

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## REFERENCES

- Abrams, Z. I. (2003). The effects of synchronous and asynchronous CMC on oral performance in German. *The Modern Language Journal*, 87(2), 157-167.
- Abrams, Z. I. (2005). Asynchronous CMC, collaboration and the development of critical thinking in a graduate seminar in applied linguistics. *Canadian Journal of Learning and Technology*, 31(2), 23-47.
- Abrams, Z. I. (2006). From theory to practice: Intracultural CMC in the L2 classroom. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From theory and research to new directions in foreign language teaching* (pp. 181-210). San Marcos, TX: CALICO.
- Al-Sa'di, R., & Hamdan, J. M. (2005). "Synchronous online chat" English: Computer-mediated communication. *World Englishes*, 24(4), 409-424.
- Arnold, N. (2002). *Computer-mediated communication: Writing to speak without foreign language anxiety?* PhD Dissertation, The University of Texas, Austin.
- Arnold, N., Ducate, L., & Kost, C. (2009). Collaborative writing in wikis: Insights from culture projects in German classes. In L. Lomicka & G. Lord (Eds.), *The next generation: Social networking and online collaboration in foreign language learning* (pp. 115-144). San Marcos, TX: Computer Assisted Language Instruction Consortium.
- Bachman, L. F., & Palmer, A. S. (1996). *Language testing in practice*. Oxford: Oxford University Press.
- Barab, S. A., Evans, M. A., & Baek, E. O. (2004). Activity theory as a lens for characterizing the participatory unit. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (2nd ed., pp. 199-214). Mahwah, NJ: Lawrence Erlbaum Associates.
- Barkley, E. F., Cross, K. P., & Major, C. H. (Eds.). (2005). *Collaborative learning techniques: A handbook for college faculty*. San Francisco: Jossey-Bass.
- Bauer, M. (2000). Classical content analysis: A review. In M. Bauer & G. Gaskell (Eds.), *Qualitative researching with text, image and sound* (pp. 131-151). London: Sage.

- 
- Bautista, M. L. S., & Gonzalez, A. B. (2006). Southeast Asian Englishes. In B. Kachru, Y. Kachru & C. L. Nelson (Eds.), *The handbook of world Englishes* (pp. 130-144). Oxford: Blackwell.
- Bax, S. (2003). The end of CLT: A context approach to language teaching. *ELT Journal*, 57(3), 278-287.
- Beatty, K. (2003). *Teaching and researching computer-assisted language learning*. London: Pearson Education Limited.
- Beatty, K., & Nunan, D. (2004). Computer-mediated collaborative learning. *System*, 32(2), 165-183.
- Beauvois, M. H. (1995). E-talk: Attitudes and motivation in computer-assisted classroom discussion. *Computers and the Humanities*, 28(2), 177-190.
- Beauvois, M. H. (1998). Conversations in slow motion: Computer-mediated communication in the foreign language classroom. *Canadian Modern Language Review/La Revue Canadienne des Langues Vivantes*, 54(2), 198-217.
- Benson, P. (2007). Autonomy in language teaching and learning. *Language Teaching*, 40(1), 21-40.
- Bikowski, D., & Kessler, G. (2002). Making the most of discussion boards in the ESL classroom. *TESOL Journal*, 11(3), 27-30.
- Black, A. (2005). The use of asynchronous discussion: Creating a text of talk. *Contemporary Issues in Technology and Teacher Education*, 5(1), 5-24.
- Blake, R. J. (2000). Computer-mediated communication: A window on L2 Spanish interlanguage. *Language Learning & Technology*, 4(1), 120-136.
- Blake, R. J. (2005). Bimodal CMC: The glue of language learning at a distance. *CALICO Journal*, 22(3), 497-511.
- Blake, R. J. (2008). *Brave new digital classroom: Technology and foreign language learning*. Washington, DC: Georgetown University Press.
- Block, D. (2003). *The social turn in second language acquisition*. Edinburgh: Edinburgh University Press.
- Blyth, C. S. (2008). Research perspectives on online discourse and foreign language learning. In S. S. Magnan (Ed.), *Mediating discourse online* (pp. 47-72). Amsterdam: John Benjamins.
- Bogdan, R. C., & Biklen, S. K. (2003). *Qualitative research for education: An introduction to theory and methods* (4th ed.). Boston, MA: Allyn and Bacon.
-

- 
- Bonk, C. J., & Cunningham, D. J. (1998). Searching for learner-centered, constructivist, and sociocultural components of collaborative educational learning tools. In C. J. Bonk & K. S. King (Eds.), *Electronic collaborators: Learner-centered technologies for literacy, apprenticeship, and discourse* (pp. 25-50). Mahwah, NJ: Lawrence Erlbaum Associates.
- Boone, K. C. (2001). Speech or writing? Email as a new medium. *Liberal Education*, 87(3), 54-58.
- Braga, D. B., & Busnardo, J. (2004). Digital literacy for autonomous learning: Designer problems and learners choices. In I. Snyder & C. Beavis (Eds.), *Doing literacy online: Teaching, learning and playing in an electronic world* (pp. 45-68). New Jersey: Hampton Press, Inc.
- Brown, H. D. (2007). *Teaching by principles: An interactive approach to language pedagogy* (3rd ed.). London: Pearson Education.
- Bruffee, K. A. (1999). *Collaborative learning: Higher education, interdependence, and the authority of knowledge*. Baltimore: John Hopkins University Press.
- Bruner, J. S. (1990). *Acts of meaning*. Cambridge, MA: Harvard University Press.
- Bui, H. T. M. (2006). Teaching speaking skills at a Vietnamese university and recommendations for using CMC. *The Asian EFL Journal Quarterly*, 14, Article 2.
- Campbell, A. P. (2004). Using livejournal for authentic communication in EFL classes. *The Internet TESL Journal*, 10(9). Retrieved August 31, 2009, from <http://iteslj.org/Techniques/Campbell-LiveJournal/>.
- Canale, M., & Swain, M. (1980). Theoretical bases of communicative approaches to second language teaching and testing. *Applied Linguistics*, 1(1), 1-47.
- Chapelle, C. A. (2001). *Computer applications in second language acquisition*. Cambridge: Cambridge University Press.
- Chen, Y. H. (2005). Computer-mediated communication: The use of CMC to develop EFL learners' communicative competence. *The Asian EFL Journal Quarterly*, 7(1), Article 10.
- Cheon, H. (2003). The viability of computer-mediated communication in the Korean secondary EFL Classroom. *The Asian EFL Journal Quarterly*, 5(1), Article 2.
- Chiu, C. Y. (2008). The discourse of an English teacher in a cyber writing course: Roles and autonomy. *The Asian EFL Journal Quarterly*, 10(1), 79-110.
- Chun, D. (1994). Using computer networking to facilitate the acquisition of interactive competence. *System*, 22(1), 17-31.

- 
- Chun, D. (2008). Computer-mediated discourse in instructed environments. In S. S. Magnan (Ed.), *Mediating discourse online* (pp. 15-46). Amsterdam: John Benjamins.
- Chun, D., & Wade, E. R. (2004). Collaborative cultural exchanges with CMC. In L. Lomicka & J. Cooke-Plagwitz (Eds.), *Teaching with technology* (pp. 220-247). Boston, MA: Heinle & Heinle.
- Chung, J. (1991). Collaborative learning strategies: The design of instructional environments for the emerging new school. *Educational Technology*, 31(12), 15-22.
- Coniam, D., & Lee, M. (2008). Incorporating wikis into the teaching of English writing. *Hong Kong Teachers' Centre Journal*, 7, 52-67.
- Coniam, D., & Wong, R. (2004). Internet relay chat as a tool in the autonomous development of ESL learners' English language ability: An exploratory study. *System*, 32(3), 321-335.
- Cook, D. L. (1962). The Hawthorne effect in educational research. *The Phi Delta Kappan*, 44(3), 116-122.
- Cornelius, C., & Boos, M. (2003). Enhancing mutual understanding in synchronous computer-mediated communication by training. *Communication Research*, 30(2), 147-177.
- Crystal, D. (2006). *Language and the Internet* (2nd ed.). Cambridge: Cambridge University Press.
- Curtis, D. D., & Lawson, M. J. (2001). Exploring collaborative online learning. *Journal of Asynchronous Learning Networks*, 5(1), 21-34.
- Danielewicz, J. (2001). *Teaching selves: Identity, pedagogy, and teacher education*. New York: State University of New York Press.
- Daniels, H. (2001). *Vygotsky and pedagogy*. New York: Routledge.
- Daniels, H. (Ed.). (2005). *An introduction to Vygotsky* (2nd ed.). New York: Routledge.
- Darhower, M. (2002). Interactional factors of synchronous computer-mediated communication in the intermediate L2 class: A sociocultural case study. *CALICO Journal*, 19(2), 249-277.
- Davis, B., & Thiede, R. (2000). Writing into change: style shifting in asynchronous electronic discourse. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 87-120). Cambridge, UK: Cambridge University Press.
-

- 
- De Lisi, R., & Golbeck, S. L. (1999). Implications of Piagetian theory for peer learning. In A. O'Donnell & A. King (Eds.), *Cognitive perspectives on peer learning* (pp. 3-37). Mahwah, NJ: Lawrence Erlbaum Associates.
- December, J. (1996a). Units of analysis for Internet communication. *Journal of Computer-Mediated Communication*, 1(4). Retrieved June 30, 2009, from <http://www.usc.edu/dept/annenberg/vol1/issue4/december.html>.
- December, J. (1996b). What is computer-mediated communication? Retrieved June 30, 2008, from <http://www.december.com/john/study/cmc/what.html>.
- Denzin, N. K. (1978). *The research act: A theoretical introduction to sociological methods*. New York: Praeger.
- DiGiovanni, E., & Nagaswami, G. (2001). Online peer review: An alternative to face-to-face? *ELT Journal*, 55(3), 263-272.
- Dillenbourg, P. (1999). Introduction: What do you mean by "collaborative learning"? In P. Dillenbourg (Ed.), *Collaborative learning: Cognitive and computational approaches* (pp. 1-19). Amsterdam: Pergamon, Elsevier Science.
- Dillenbourg, P. (2005). Designing biases that augment socio-cognitive interactions. In R. Bromme, W. Hesse & H. Spada (Eds.), *Barriers and biases in computer-mediated knowledge communication - and how they may be overcome* (pp. 243-264). Dordrecht, Netherlands: Kluwer.
- Dillenbourg, P., Baker, M., Blaye, A., & O'Malley, C. (1996). The evolution of research on collaborative learning. In E. Spada & P. Reiman (Eds.), *Learning in humans and machine: Towards an interdisciplinary learning science* (pp. 189-211). Oxford: Elsevier.
- Do, T. H. (2006). *The role of English in Vietnam's foreign language policy: A brief history*. Paper presented at the 19th Annual English Australia Education Conference 2006 - Re-Evaluating Methodologies: How We Teach, Who We Teach, Perth, Western Australia.
- Donato, R. (2004). Aspects of collaboration in pedagogical discourse. *Annual Review of Applied Linguistics*, 24, 284-302.
- Dooly, M. (2008). Understanding the many steps for effective collaborative language projects. *Language Learning Journal*, 36(1), 65-78.
- Dörnyei, Z. (2007). *Research methods in applied linguistics*. Oxford: Oxford University Press.
- Dussias, P. E. (2006). Morphological development in Spanish-American telecollaboration. In J. A. Belz & S. L. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 121-146). Boston, MA: Heinle & Heinle.
-

- 
- Egbert, J. (2001). Active learning through computer-enhanced activities. *Teaching English with Technology*, 1(3). Retrieved August 25, 2009, from [http://www.iatefl.org.pl/call/j\\_article3.htm](http://www.iatefl.org.pl/call/j_article3.htm).
- Egbert, J. (2005). Flow as a model for CALL research. In J. Egbert & G. M. Petrie (Eds.), *CALL research perspectives* (pp. 129-139). Mahwah, NJ: Lawrence Erlbaum Associates.
- Egbert, J. (2010). Chapter 1: Introduction. In J. Egbert (Ed.), *CALL in limited technology contexts* (pp. 1-5). Texas State University: CALICO.
- Ellis, R. A. (1997). *Second language acquisition*. Oxford: Oxford University Press.
- Engeström, Y. (1999). Activity theory and individual and social transformation. In Y. Engeström, R. Miettinen & R. L. Punamaki (Eds.), *Perspectives on activity theory* (pp. 19-38). Cambridge: Cambridge University Press.
- Fang, X., & Warschauer, M. (2004). Technology and curriculum reform in China: A case study. *TESOL Quarterly*, 38(2), 301-323.
- Felix, U. (2005). What do meta-analyses tell us about CALL effectiveness? *ReCALL*, 17(2), 269-288. doi: 10.1017/S0958344005000923
- Fiori, M. L. (2005). The development of grammatical competence through synchronous computer-mediated communication. *CALICO Journal*, 22(3), 567-602.
- Fitze, M. (2006). Discourse and participation in ESL face-to-face and written electronic conferences. *Language Learning & Technology*, 10(1), 67-86.
- Fotos, S. (2004). Writing as talking: E-mail exchange for promoting proficiency and motivation in the foreign language classroom. In S. Fotos & C. Browne (Eds.), *New perspectives on CALL for second language classrooms* (pp. 109-129). Mahwah, NJ: Lawrence Erlbaum Associates.
- Fu, D. L. (1995). *My trouble is my English: Asian students and the American dream*. Portsmouth, NH: Boynton/Cook Publishers Heinemann.
- Fuente, M. J. (2003). Is SLA interactionist theory relevant to CALL? A study on the effects of computer-mediated interaction in L2 vocabulary acquisition. *Computer Assisted Language Learning*, 16(1), 47-81.
- Gains, J. (1999). Electronic mail: A new style of communication or just a new medium? An investigation into the text features of email. *English for Specific Purposes*, 18, 81-101.
- Gánem-Gutiérrez, A. G. (2006). Sociocultural theory and its application to CALL: A study of the computer and its relevance as a mediational tool in the process of collaborative activity. *ReCALL*, 18(2), 230-251.
-

- 
- Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education*, 2(2-3), 87-105.
- Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking and computer conferencing: A model and tool to assess cognitive presence. *American Journal of Distance Education*, 15(1), 7-23.
- Godwin-Jones, R. (2008). Emerging technologies - Web-writing 2.0: Enabling, documenting, and assessing writing online. *Language Learning & Technology*, 12(2), 7-13.
- Goh, E., & Nguyen, B. (2004). Chapter 17: Vietnam. In K. W. Ho & R. Y. L. Wong (Eds.), *Language policies and language education: The impact in East Asian countries in the next decade*. Singapore: Eastern Universities Press.
- Gonzalez-Bueno, M., & Perez, L. C. (2000). Electronic mail in foreign language writing: A study of grammatical and lexical accuracy, and quantity of language. *Foreign Language Annals*, 33(3), 189-198.
- Graham, C. R., & Misanchuk, M. (2004). Computer-mediated learning groups: Benefits and challenges to using groupwork in online learning environments. In T. S. Roberts (Ed.), *Online collaborative learning: Theory and practice* (pp. 181-202). Hershey, PA: Information Science Publishing.
- Greenfield, R. (2003). Collaborative email exchange for teaching secondary ESL: A case study in Hong Kong. *Language Learning & Technology*, 7(1), 46-70.
- Gruber-Miller, J., & Benton, C. (2001). How do you say "MOO" in Latin? Assessing student learning and motivation in beginning Latin. *CALICO Journal*, 18(2), 305-338.
- Hadi, A. (2007). *Incorporating computer-mediated communication into communicative language teaching: An EFL setting*. Paper presented at the 5th Asia TEFL International Conference, 22-24 May, Kuala Lumpur, Malaysia.
- Halliday, M. A. K. (1973). *Explorations in the functions of language*. London: Arnold.
- Hampel, R., & Hauck, M. (2004). Towards an effective use of audio conferencing in distance language courses. *Language Learning & Technology*, 8(1), 66-82.
- Hansen, J. G. (2005). Cooperative learning methods and the teaching of English writing: Peer response. *STETS Language & Communication Review*, 4(1), 10-16.
- Harasim, L. (2007). Assessing online collaborative learning: A theory, methodology, and toolset. In B. H. Khan (Ed.), *Flexible learning in an information society* (pp. 282-293). Hershey: Idea Group Inc (IGI).
-

- 
- Herring, S. C. (1999). Interactional coherence in CMC. *Journal of Computer-Mediated Communication*, 4(4), 1-24.
- Herring, S. C. (2001). Computer-mediated discourse. In D. Schiffrin, D. Tannen & H. D. Hamilton (Eds.), *Handbook of discourse analysis* (pp. 612-634). Oxford: Blackwell.
- Herring, S. C. (2004). Computer-mediated discourse analysis: An approach to researching online behavior. In S. A. Barab, R. Kling & J. H. Gray (Eds.), *Designing for virtual communities in the service of learning* (pp. 338-376). New York: Cambridge University Press.
- Hewett, B. L. (2000). Characteristics of interactive oral and computer-mediated peer group talk and its influence on revision. *Computers and Composition*, 17(3), 265-288.
- Hiltz, S. R., & Turoff, M. (1978). *The network nation: Human communication via computer*. Norwood, NJ: Ablex.
- Holliday, A. (1997). Six lessons: Cultural continuity in communicative language teaching. *Language Teaching Research*, 1(3), 212-238. doi: 10.1177/136216889700100303
- Honeycutt, L. (2001). Comparing e-mail and synchronous conferencing in online peer response. *Written Communication*, 18(1), 26-60.
- Hoven, D. L. (2006). *Designing for disruption: Remodelling a blended course in technology in (language) teacher education*. Paper presented at the Twenty-third Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education 2006: Whose learning? Whose technology?, Sydney, Australia.
- Hu, G. (2005). Contextual influences on instructional practices: A Chinese case for an ecological approach to ELT. *TESOL Quarterly*, 39(4), 635-660.
- Ingram, A. L., & Hathorn, L. G. (2004). Methods for analyzing collaboration in online communications. In T. S. Roberts (Ed.), *Online collaborative learning: Theory and practice* (pp. 215-241). Hershey, PA: Information Science Publishing.
- Ingram, A. L., Hathorn, L. G., & Evans, A. (2000). Beyond chat on the internet. *Computers & Education*, 35(1), 21-35.
- Internet World Stats. (2010). Vietnam: Internet usage stats and marketing report. Retrieved June 24, 2010, from <http://www.internetworldstats.com/asia/vn.htm>.
- Itakura, H. (2004). Changing cultural stereotypes through e-mail assisted foreign language learning. *System*, 32(1), 37-51.

- 
- Jepson, K. (2005). Conversations - and negotiated interaction - in text and voice chat rooms. *Language Learning & Technology*, 9(3), 79-98.
- Johnson, D. W., & Johnson, R. T. (2004). Cooperation and the use of technology. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (2nd ed., pp. 785-812). Mahwah, NJ: Lawrence Erlbaum Associates.
- Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, 1(2), 112-133.
- Joiner, R. (2004). Supporting collaboration in virtual learning environments. *CyberPsychology & Behavior*, 7, 197-200.
- Jonassen, D. H. (Ed.). (2004). *Handbook of research on educational communications and technology* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
- Jones, S. G. (1995). Understanding community in the information age. In S. G. Jones (Ed.), *Cybersociety: Computer-mediated communication and community* (pp. 10-35). Thousand Oaks, CA: Sage.
- Judd, T., Kennedy, G., & Cropper, S. (2010). Using wikis for collaborative learning: Assessing collaboration through contribution. *Australasian Journal of Educational Technology*, 26(3), 341-354.
- Kachru, B. (1992). Teaching world Englishes. In B. Kachru (Ed.), *The other tongue: English across cultures* (2nd ed.). Urbana: University of Illinois Press.
- Kasper, L. F. (2000). New technologies, new literacies: Focus discipline research and ESL learning communities. *Language Learning & Technology*, 4(2), 105-128.
- Kaye, A. (1989). Computer-mediated communication and distance education. In R. Mason & A. Kaye (Eds.), *Mindweave: Communication, computers and distance education* (pp. 2-31). Oxford, New York: Pergamon Press.
- Kelm, R. (1992). The use of synchronous computer networks in second language instruction: A preliminary report. *Foreign Language Annals*, 25(5), 441-454.
- Kern, R. (1995). Restructuring classroom interaction with networked computers: Effects on quantity and characteristics of language production. *The Modern Language Journal*, 79(4), 457-476.
- Kern, R. (2006). Perspectives on technology in learning and teaching languages. *TESOL Quarterly*, 40(1), 183-210.
- Kern, R., & Warschauer, M. (2000). Theory and practice of network-based language teaching. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 1-19). New York: Cambridge University Press.
-

- 
- Kessler, G. (2009). Student-initiated attention to form in wiki-based collaborative writing. *Language Learning & Technology*, 13(1), 79-95.
- Kessler, G., & Bikowski, D. (2010). Developing collaborative autonomous learning abilities in computer-mediated language learning: Attention to meaning among students in wiki space. *Computer Assisted Language Learning*, 23(1), 41 - 58.
- Kinginger, C. (2002). Defining the zone of proximal development in US foreign language education. *Applied Linguistics*, 23(2), 240-261. doi: 10.1093/applin/23.2.240
- Kirkpatrick, A. (2008). English as the official working language of the Association of Southeast Asian Nations (ASEAN): Features and strategies. *English Today*, 24(02), 27-34.
- Kitade, K. (2000). L2 learners discourse and SLA theories in CMC: Collaborative interaction in Internet chat. *Computer Assisted Language Learning*, 13(2), 143-166.
- Kitade, K. (2006). The negotiation model in asynchronous computer-mediated communication (CMC): Negotiation in task-based email exchanges. *CALICO Journal*, 23(2), 319.
- Knight, P. (2005). Learner interaction using email: The effects of task modification. *ReCALL*, 17(01), 101-121.
- Kramsch, C., A'Ness, F., & Lam, E. (2000). Authenticity and authorship in the computer-mediated acquisition of L2 literacy. *Language Learning & Technology*, 4(2), 78-104.
- Kramsch, C., & Sullian, P. (1996). Appropriate methodology. *ELT Journal*, 50(3), 199-212.
- Kramsch, C., & Thorne, S. (2002). Foreign language learning as global communicative practice. In D. Cameron & D. Block (Eds.), *Globalization and language teaching* (pp. 83-100). New York: Routledge.
- Kreijns, K., Kirschner, P. A., Jochems, W., & Van Buuren, H. (2004). Determining sociability, social space, and social presence in (a)synchronous collaborative groups. *Cyberpsychology & Behaviour*, 7(2), 155-172.
- Kumar, V. S. (1996). Computer-supported collaborative learning: Issues for research. Canada: University of Saskatchewan.
- Kumpulainen, K., & Wray, D. (1999). Analysing interactions during collaborative writing with the computer: An innovative methodology. Retrieved May 20, 2009, from <http://www.warwick.ac.uk/staff/D.J.Wray/Articles/facct.html>.
-

- 
- Kuutti, K. (1996). Activity theory as a potential framework for human-computer interaction research. In B. A. Nardi (Ed.), *Context and consciousness: Activity theory and human-computer interaction* (pp. 17-44). Cambridge: MIT Press.
- Lamb, B. (2004). Wide open spaces: Wikis, ready or not. *Educause Review*, 39(5), 36-48.
- Lamy, M. N., & Hampel, R. (2007). *Online communication in language learning and teaching*. Palgrave: Macmillan.
- Lantolf, J. P. (2000). Introducing sociocultural theory. In P. J. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 1-26). Oxford: Oxford University Press.
- Lantolf, J. P. (2006). Sociocultural theory and L2: State of the art. *Studies in Second Language Acquisition*, 28(1), 67-109.
- Lantolf, J. P., & Thorne, S. L. (2007). Sociocultural theory and second language learning. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction* (pp. 197-221). Mahwah, NJ: Lawrence Erlbaum Associates.
- Laufer, B., & Nation, P. (1995). Vocabulary size and use: lexical richness in L2 written production. *Applied Linguistics*, 16(3), 307-322.
- Leahy, C. (2008). Learner activities in a collaborative CALL task. *Computer Assisted Language Learning*, 21(3), 253-268.
- Lee, C.-Y., Turner, S., Huang, W., & Kessler, G. (2007). Using synchronous computer-mediated communication to teach foreign students spoken English: An exploratory study. In C. Crawford & R. Carlsen (Eds.), *Proceedings of society for information technology and teacher education international conference 2007* (pp. 397-404). Chesapeake, VA: AACE.
- Lee, L. (2001). Online interaction: Negotiation of meaning and strategies used among learners of Spanish. *ReCALL*, 13(02), 232-244.
- Lee, L. (2002). Enhancing learners' communication skills through synchronous electronic interaction and task-based instruction. *Foreign Language Annals*, 35(1), 16-23.
- Lee, L. (2004). Learners' perspectives on networked collaborative interaction with native speakers of Spanish in the US. *Language Learning & Technology*, 8(1), 83-100.
- Lee, L. (2005). Using web-based instruction to promote active learning: Learners' perspectives. *CALICO Journal*, 23(1), 139-156.

- 
- Lee, L. (2006). A study of native and nonnative speakers' feedback and responses in Spanish-American networked collaborative interaction. In J. A. Belz & S. L. Thorne (Eds.), *Internet-mediated intercultural foreign language education* (pp. 147-176). Boston, MA: Heinle & Heinle.
- Lee, L. (2010). Exploring wiki-mediated collaborative writing: A case study in an elementary Spanish course. *CALICO Journal*, 27(2), 260-276.
- Lee, S. W. (2003). *Computer assisted classroom discussion in three ESL classrooms: A case study of the experiences of a teacher and her students*. PhD Dissertation, University of Texas, Austin.
- Leontiev, A. N. (1981). The problem of activity in psychology. In W. V. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 37-71). Armonk, NY: M. E. Sharpte.
- Levy, M. (2002). CALL by design: discourse, products and processes. *ReCALL*, 14(01), 58-84.
- Levy, M., & Stockwell, G. (2006). *CALL dimensions: Options and issues in computer-assisted language learning*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Lewis, M., & McCook, F. (2002). Cultures of teaching: Voices from Vietnam. *ELT Journal*, 56(2), 146-153. doi: 10.1093/elt/56.2.146
- Li, C. Y. (2003). A study of in-service teachers' beliefs, difficulties and problems in current teacher development programs. *HKBU Papers in Applied Language Studies*, 7, 64-85.
- Li, Y. (2000). Linguistic characteristics of ESL writing in task-based e-mail activities. *System*, 28(2), 229-245.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park: SAGE Publications.
- Liou, H.-C., & Peng, Z.-Y. (2009). Training effects on computer-mediated peer review. *System*, 37(3), 514-525.
- Littlewood, W. (2007). Communicative and task-based language teaching in East Asian classrooms. *Language Teaching*, 40(3), 243-249.
- Liu, J., & Sadler, R. W. (2003). The effect and affect of peer review in electronic versus traditional modes on L2 writing. *Journal of English for Academic Purposes*, 2(3), 193-227.
- Lund, A. (2006). The multiple contexts of online language teaching. *Language Teaching Research*, 10(2), 181-204.
-

- 
- Lund, A. (2008). Wikis: A collective approach to language production. *ReCALL*, 20(01), 35-54.
- Luppicini, R. (2007). Review of computer mediated communication research for education. *Instructional Science*, 35(2), 141-185.
- Malaysian Representatives. (2007). *Making all schools SMART*. Paper presented at the 30th SEAMEO High Officials Meeting, Bangkok, Thailand. Retrieved from <http://www.seameo.org/vl/library/DLWelcome/Publications/report/hom/30hom/hom30.1.html>.
- Mangenot, F., & Nissen, E. (2006). Collective activity and tutor involvement in e-learning environments for language teachers and learners. *CALICO Journal*, 23(3), 601-621.
- Marmini, P., & Zanardi, N. (2007). Online interaction: More real than virtual. *Flinders University Languages Group Online Review*, 3(2), 1-14.
- McCafferty, S. G., Jacobs, G. M., & Iddings, A. (2006). *Cooperative learning and second language teaching*. Cambridge: Cambridge University Press.
- McInnerney, J. M., & Roberts, T. S. (2004). Collaborative or cooperative learning? In T. S. Roberts (Ed.), *Online collaborative learning: Theory and practice* (pp. 203-213). Hershey, PA: Information Science Publishing.
- McLoughlin, C. (2002). Computer supported teamwork: An integrative approach to evaluating cooperative learning in an online environment. *Australian Journal of Educational Technology*, 18(2), 227-254.
- Menezes, V. (2008). *CALL: A strange attractor in language education in South America*. Paper presented at the WorldCALL 2008: CALL Brigdes the World, Fukuoka, Japan.
- Meskill, C., & Anthony, N. (2005). Foreign language learning with CMC: Forms of online instructional discourse in a hybrid Russian class. *System*, 33(1), 89-105.
- Meunier, L. E. (1998). Personality and motivational factors in computer-mediated foreign language communication. In J. A. Muyskens (Ed.), *New ways of learning and teaching* (pp. 145-197). Boston, MA: Heinle & Heinle.
- Miller, J. (2004). Identity and language use: The politics of speaking ESL in schools. In A. Pavlenko & A. Blackledge (Eds.), *Negotiation of identities in multilingual contexts* (pp. 290-315). Buffalo, NY: Multilingual Matters Ltd.
- Mitchell, R., & Myles, F. (2004). *Second language learning theories* (2nd ed.). London, UK: Holder Arnold.
-

- 
- MoET. (2008). *Deputy Prime Minister and Minister of Education and Training's closing remarks at the national conference on higher education quality*. Paper presented at the Annual National Conference on Higher Education Quality, 19-20 November, Hanoi, Vietnam.
- MoET. (2009). Report on 2009 national university entrance examinations. Retrieved November 20, 2009, from <http://moet.gov.vn/?page=1.26&view=1368>.
- Motteram, G. (2001). The role of synchronous communication in fully distance education. *Australian Journal of Educational Technology*, 17(2), 131-149.
- Murphy, L. (2008). Supporting learner autonomy: Developing practice through the production of courses for distance learners of French, German and Spanish. *Language Teaching Research*, 12(1), 83-102. doi: 10.1177/1362168807084495
- Murray, D. E. (2000). Protean communication: The language of computer-mediated communication. *TESOL Quarterly*, 34(3), 397-421.
- Murray, P. J. (1997). A rose by any other name. *Computer Mediated Communication Magazine*, 4(1). Retrieved June 25, 2009, from <http://www.december.com/cm/mag/1997/jan/murray.html>.
- Nguyen, L. V. (2003). Multimedia và vai trò người thầy trong lớp học ngoại ngữ [Multimedia and teacher's roles in a language classroom]. *The University of Danang Journal of Science and Technology*, 3, 90-97.
- Nguyen, L. V. (2008a). Technology-enhanced EFL syllabus design and materials development. *English Language Teaching*, 1(2), 135-142.
- Nguyen, L. V. (2008b). The triangular issues in multimedia language courseware design in the Vietnamese EFL environment. *Asian Social Science*, 4(6), 65-69.
- Nguyen, L. V. (2010). Computer mediated collaborative learning within a communicative language teaching approach: A sociocultural perspective. *The Asian EFL Journal Quarterly*, 12(1), 202-233.
- Nguyen, L. V. (Ed.). (2004). *Multimedia builder tutorials*. Danang: The University of Danang.
- Nguyen, L. V., Grevstad, P., & Fong, J. (Eds.). (2003). *Fundamental instructions on the design of English on-line: A user-guide*. Danang: The University of Danang.
- Nguyen, P. M., Terlouw, C., & Pilot, A. (2005). Cooperative learning vs Confucian heritage culture's collectivism: confrontation to reveal some cultural conflicts and mismatch. *Asia Europe Journal*, 3(3), 403-419.
-

- 
- Nguyen, P. M., Terlouw, C., & Pilot, A. (2006). *Instructional design principles for cooperative learning in Asia: One size cannot fit all*. Paper presented at the Onderwijs Research Dagen, 10-12 May, Amsterdam, The Netherlands.
- Nguyen, T. M. H. (2007). Developing EFL learners' intercultural communicative competence: A gap to be filled? *The Asian EFL Journal Quarterly (Teaching Articles)*, 21, 29-56.
- Norton, B. (2009a). *Identity, literacy, and English language teaching across time and space*. Paper presented at the IATEFL Conference, Cardiff, UK.
- Norton, B. (2009b). Language and identity. In N. Hornberger & S. McKay (Eds.), *Sociolinguistics and language education*. Clevedon, UK: Multilingual Matters.
- Nunan, D. (1991). *Language teaching methodology: A textbook for teachers*. New York: Prentice Hall.
- Nunan, D. (1992). *Collaborative language learning and teaching*. Cambridge: Cambridge University Press.
- Nunan, D. (2003). The impact of English as a global language on educational policies and practices in the Asia-Pacific region. *TESOL Quarterly*, 37(4), 589-613.
- O'Dowd, R. (2003). Understanding the "other side": Intercultural learning in a Spanish-English e-mail exchange. *Language Learning & Technology*, 7(2), 118-144.
- O'Rourke, B. (2005). Form-focused interaction in online tandem learning. *CALICO Journal*, 22(3), 433-466.
- O'Rourke, B. (2008). The other C in CMC: What alternative data sources can tell us about text-based synchronous computer-mediated communication and language learning. *Computer Assisted Language Learning*, 21(3), 227-251.
- Ohta, A. S. (2001). *Second language acquisition processes in the classroom: Learning Japanese*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Ortega, L. (1997). Process and outcomes in networked classroom interaction: Defining the research agenda for L2 computer-assisted classroom discussion. *Language Learning & Technology*, 1(1), 82-93.
- Ortega, L. (2007). Second language learning explained? SLA across nine contemporary theories. In B. VanPatten & J. Williams (Eds.), *Theories in second language acquisition: An introduction*. Mahwah, NJ: Lawrence Erlbaum Associates.

- 
- Oxford, R. (1997). Cooperative learning, collaborative learning, and interaction: Three communicative strands in the language classroom. *The Modern Language Journal*, 81(4), 443-456.
- Panitz, T. (2001). The case for student-centered instruction via collaborative learning paradigms. Retrieved July 23, 2008, from <http://home.capecod.net/~tpanitz/tedsarticles/coopbenefits.htm>.
- Paramskas, D. M. (1999). The shape of computer-mediated communication. In K. C. Cameron (Ed.), *CALL: Media, design, and applications* (pp. 13-34). Lisse: Swets and Zeitlinger.
- Paulus, T. M. (2003). *Collaboration and the social construction of knowlegde in an online learning environment*. PhD, Indiana University, Indiana.
- Paulus, T. M. (2007). CMC modes for learning tasks at a distance. *Journal of Computer-Mediated Communication*, 12(4), 1322-1345.
- Payne, J. S., & Whitney, P. J. (2002). Developing L2 oral proficiency through synchronous CMC: Output, working memory, and interlanguage development. *CALICO Journal*, 20(1), 7-32.
- Pellettieri, J. (2000). Negotiation in cyberspace: The role of chatting in the development of grammatical competence. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 59-86). New York: Cambridge University Press.
- Peterson, M. (2009). Learner interaction in synchronous CMC: A sociocultural perspective. *Computer Assisted Language Learning*, 22(4), 303 - 321.
- Pfaffman, J. (2008). Computer-mediated communications technologies. In J. M. Spector, M. D. Merrill, J. Van Merriënboer & M. P. Driscoll (Eds.), *Handbook of research on educational communications and technology* (pp. 225-240). Mahwah, NJ: Lawrence Erlbaum Associates.
- Pham, H. H. (2005). Imported communicative language teaching: Implications for local teachers. *English Teaching Forum*, 43(4), 2-9.
- Pham, H. H. (2007). Communicative language teaching: Unity within diversity. *ELT Journal*, 61(3), 193-201. doi: 10.1093/elt/ccm026
- Piaget, J. (1932). *The moral judgement of the child*. London: Routledge & Keagan.
- Ratner, C. (2002). *Cultural psychology: Theory and method*. New York: Kluwer Academic Publishers.
- Richards, J. C. (2005). *Communicative language teaching today*. Singapore: SEAMEO Regional Language Centre.
-

- 
- Richardson, W. (2006). *Blogs, wikis, podcasts, and other powerful web tools for classrooms*. Thousand Oaks, CA: Corwin Press.
- Riva, G. (2002). The sociocognitive psychology of computer-mediated communication: The present and future of technology-based interactions. *CyberPsychology & Behavior*, 5(6), 581-598.
- Roberts, T. S. (2005). Computer-supported collaborative learning in higher education: An introduction. In T. S. Roberts (Ed.), *Computer-supported collaborative learning in higher education* (pp. 1-18). Hershey, PA: Idea Group.
- Roberts, T. S. (Ed.). (2004). *Online collaborative learning: Theory and practice*. Hershey, PA: Information Science Publishing.
- Romiszowski, A. J., & Mason, R. (2004). Computer-mediated communication. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (2nd ed., pp. 397-430). Mahwah, NJ: Lawrence Erlbaum Associates.
- Salaberry, M. R. (2000). L2 morphosyntactic development in text-based computer-mediated communication. *Computer Assisted Language Learning*, 13(1), 5-27.
- Salaberry, M. R. (2001). The use of technology for second language learning and teaching: A retrospective. *The Modern Language Journal*, 85(1), 39-56.
- Sapir, E. (1921). *Language: An introduction to the study of speech*. New York: Harcourt Brace.
- Savignon, S. J. (2007). Beyond communicative language teaching: What's ahead? *Journal of Pragmatics*, 39(1), 207-220.
- Savignon, S. J., & Roithmeier, W. (2004). Computer-mediated communication: Texts and strategies. *CALICO Journal*, 21(2), 265-290.
- Schwiehorst, K. (2004). Learner autonomy and tandem learning: Putting principles into practice in synchronous and asynchronous telecommunications environments. *Computer Assisted Language Learning*, 16(5), 427-433.
- Scott, M. (1996). *Oxford wordsmith tools version 4*. London: Oxford University Press.
- Shang, H. F. (2007). An exploratory study of e-mail application on FL writing performance. *Computer Assisted Language Learning*, 20(1), 79-96.
- Shekary, M., & Tahririan, M. H. (2006). Negotiation of meaning and noticing in text-based online chat. *The Modern Language Journal*, 90(4), 557-573.

- 
- Shi, S., Mishra, P., Bonk, C. J., Tan, S., & Zhao, Y. (2006). Thread theory: A framework applied to content analysis of synchronous Computer-mediated communication data. *International Journal of Instructional Technology & Distance Learning*, 3(3), 17-38.
- Sierpe, E. (2005). Gender distinctiveness, communicative competence, and the problem of gender judgments in computer-mediated communication. *Computers in Human Behavior*, 21(1), 127-145.
- Sinclair, B. (2000). Learner autonomy: The next phase. In B. Sinclair, I. McGrath & T. Lamb (Eds.), *Learner autonomy, teacher autonomy: Future directions* (pp. 15-23). London: Longman.
- Smith, B. (2003). Computer-mediated negotiated interaction: An expanded model. *The Modern Language Journal*, 87(1), 38-57.
- Smith, B. (2004). Computer-mediated negotiated interaction and lexical acquisition. *Studies in Second Language Acquisition*, 26(03), 365-398.
- Smith, B., Alvarez-Torres, M. J., & Zhao, Y. (2003). Features of CMC technologies and their impact on language learners' online interaction. *Computers in Human Behavior*, 19(6), 703-729.
- Sotillo, S. M. (2000). Discourse functions and syntactic complexity in synchronous and asynchronous communication. *Language Learning & Technology*, 4(1), 82-119.
- Sotillo, S. M. (2005). Corrective feedback via instant messenger learning activities in NS-NNS and NNS-NNS dyads. *CALICO Journal*, 22(3), 467-496.
- Sotillo, S. M. (2006). Using instant messaging for collaborative learning: A case study. *Innovate: Journal of Online Education*, 2(3). Retrieved August 26, 2009, from <http://www.innovateonline.info/index.php?view=article&id=170>.
- Stacey, E. (1999). Collaborative learning in an online environment. *Journal of Distance Education*, 14(2). Retrieved September 17, 2009, from <http://www.jofde.ca/index.php/jde/article/view/154/379>.
- Stahl, G. (2005). Group cognition in computer-assisted collaborative learning. *Journal of Computer Assisted Learning*, 21(2), 79-90.
- Stahl, G., Koschmann, T., & Suthers, D. (2006). Computer-supported collaborative learning: An historical perspective. In R. K. Sawyer (Ed.), *Cambridge handbook of the learning sciences* (pp. 409-426). Cambridge: Cambridge University Press.
- Stickler, U., Batstone, C., Duensing, A., & Heins, B. (2007). Distant classmates: Speech and silence in online and telephone language tutorials. *European Journal of Open, Distance and E-Learning*. Retrieved August 15, 2009, from
-

---

[http://www.eurodl.org/materials/contrib/2007/Stickler\\_Batstone\\_Duensing\\_Hoins.html](http://www.eurodl.org/materials/contrib/2007/Stickler_Batstone_Duensing_Hoins.html).

- Stockwell, G. (2007). A review of technology choice for teaching language skills and areas in the CALL literature. *ReCALL*, 19(2), 105-120.
- Stockwell, G., & Harrington, M. (2003). The incidental development of L2 proficiency in NS-NNS email interactions. *CALICO Journal*, 20(2), 337-359.
- Storch, N. (2005). Collaborative writing: Product, process, and students' reflections. *Journal of Second Language Writing*, 14(3), 153-173.
- Sullivan, P. N. (1996). Sociocultural influences on classroom interactional styles. *TESOL Journal*, 6, 32-34.
- Sullivan, P. N. (2000). Playfulness as mediation in communicative language teaching in a Vietnamese classroom. In J. P. Lantolf (Ed.), *Sociocultural theory and second language learning* (pp. 115-131). Oxford: Oxford University Press.
- Suthers, D., Vatrappu, R., Medina, R., Joseph, S., & Dwyer, N. (2008). Beyond threaded discussion: Representational guidance in asynchronous collaborative learning environments. *Computers & Education*, 50(4), 1103-1127.
- Swaffar, J., Romano, S., Markley, P., & Arens, K. (Eds.). (1998). *Language learning online: Theory and practice in the ESL and L2 computer classroom*. Austin, TX: Labyrinth Publication.
- Swan, K. (2002). Building learning communities in online courses: The importance of interaction. *Education, Communication & Information*, 2(1), 23-49.
- Sykes, J. (2005). Synchronous CMC and pragmatic development: Effects of oral and written chat. *CALICO Journal*, 22(3), 399-431.
- Thorne, S. L. (2003). Artifacts and cultures-of-use in intercultural communication. *Language Learning & Technology*, 7(2), 38-67.
- Thorne, S. L. (2008a). Computer-mediated communication. In N. Hornberger & N. V. Duesen-Scholl (Eds.), *Encyclopedia of language and education, Volume 4: Second and foreign language education* (2nd ed., pp. 325-336). Kluwer: Springer Verlag.
- Thorne, S. L. (2008b). Mediating technologies and second language learning. In J. Coiro, M. Knobel, C. Lankshear & D. J. Leu (Eds.), *Handbook of research on new literacies* (pp. 417-450). Mahwah, NJ: Lawrence Erlbaum Associates.
- Thorne, S. L., & Payne, J. S. (2005). Evolutionary trajectories, Internet-mediated expression, and language education. *CALICO Journal*, 22(3), 371-397.

- 
- Tomlinson, B., & Dat, B. (2004). The contributions of Vietnamese learners of English to ELT methodology. *Language Teaching Research*, 8(2), 199-222. doi: 10.1191/1362168804lr140oa
- Torres, I. P., & Vinagre, M. (2007). How can online exchanges be used with young learners? In O. D. Robert (Ed.), *Online intercultural exchange: An introduction for foreign language teachers* (pp. 193-212). Clevedon, UK: Multilingual Matters LTD.
- Toyoda, E., & Harrison, R. (2002). Categorization of text chat communication between learners and native speakers of Japanese. *Language Learning & Technology*, 6(1), 82-99.
- Trager, G. L. (1979). *The field of linguistics*. New York: Johnson Reprint Corp.
- Tsui, A. B. M., & Ng, M. (2000). Do secondary L2 writers benefit from peer comments? *Journal of Second Language Writing*, 9(2), 147-170.
- Tudini, V. (2003). Using native speakers in chat. *Language Learning & Technology*, 7(3), 141-159.
- Tudini, V. (2005). Chatlines for beginners: Negotiating conversation at a distance. In B. Holmberg, M. Shelley & C. White (Eds.), *Distance education and languages: Evolution and change* (pp. 212-229). Clevedon, UK: Multilingual Matters.
- Van Deusen-Scholl, N., Frei, C., & Dixon, E. (2005). Constructing learning: The dynamic nature of foreign language pedagogy in a CMC environment. *CALICO Journal*, 22(3), 657-678.
- Vatrapu, R. K. (2007). *Technological intersubjectivity and appropriation of affordances in computer supported collaboration*. PhD Thesis, University of Hawaii, Manoa.
- Vietnamese Government. (2008a). *Government's decision on "Foreign Languages Teaching and Learning for Vietnamese Citizens 2008-2020" program*. (Decision 1400/QĐ-TTg). Hanoi: Vietnamese Government.
- Vietnamese Government. (2008b). *Government's decree on information technology application in government agencies*. (Decree 64/2007/NĐ-CP). Hanoi: Vietnamese Government.
- Volle, L. M. (2005). Analyzing oral skills in voice e-mail and online interviews. *Language Learning & Technology*, 9(3), 146-163.
- Vygotsky, L. S. (1978). *Mind and society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Vygotsky, L. S. (1981). The instrumental method in psychology. In J. Wertsch (Ed.), *The concept of activity in Soviet psychology* (pp. 143-184). NY: M.E. Sharpe.
-

- 
- Walther, J. B. (2007). Selective self-presentation in computer-mediated communication: Hyperpersonal dimensions of technology, language, and cognition. *Computers in Human Behavior*, 23(5), 2538-2557.
- Wang, L. (2006). *Information literacy courses – A shift from a teacher-centred to a collaborative learning environment*. Paper presented at the Fourth International Lifelong Learning Conference: Partners, Pathways, and Pedagogies, 13-16 June, Queensland, Australia.
- Wang, Q., & Woo, H. L. (2007). Comparing asynchronous online discussions and face-to-face discussions in a classroom setting. *British Journal of Educational Technology*, 38(2), 272-286.
- Wang, Y. (2004). Supporting synchronous distance language learning with desktop videoconferencing. *Language Learning & Technology*, 8(3), 90-122.
- Ware, P. D., & Kramsch, C. (2005). Toward an intercultural stance: Teaching German and English through telecollaboration. *The Modern Language Journal*, 89(2), 190-205.
- Ware, P. D., & O'Dowd, R. (2008). Peer feedback on language form in telecollaboration. *Language Learning & Technology*, 12(1), 43-63.
- Warschauer, M. (1996). Comparing face-to-face and electronic discussion in the second language classroom. *CALICO Journal*, 13(2), 7-26.
- Warschauer, M. (1997). Computer-mediated collaborative learning: Theory and practice. *The Modern Language Journal*, 81(4), 470-481.
- Warschauer, M. (1998). Online learning in sociocultural context. *Anthropology & Education Quarterly*, 29(1), 68-88.
- Warschauer, M. (1999). *Electronic literacies: Language, culture and power in online education*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Warschauer, M. (2000a). The changing global economy and the future of English teaching. *TESOL Quarterly*, 34(3), 511-535.
- Warschauer, M. (2000b). On-line learning in second language classroom: An ethnographic study. In M. Warschauer & R. Kern (Eds.), *Network-based language teaching: Concepts and practice* (pp. 41-58). Cambridge: Cambridge University Press.
- Warschauer, M. (2004). Technological change and the future of CALL. In S. Fotos & C. Browne (Eds.), *New perspectives on CALL for second language classrooms* (pp. 15-26). Mahwah, NJ: Lawrence Erlbaum Associates.
- Warschauer, M. (2005). Sociocultural perspectives on CALL. In J. Egbert & G. M. Petrie (Eds.), *CALL research perspectives* (pp. 41-51). Mahwah, NJ: Lawrence Erlbaum Associates.
-

- 
- Warschauer, M. (2010). Invited commentary: New tools for teaching writing. *Language Learning & Technology*, 14(1), 3-8.
- Warschauer, M., Knobel, M., & Stone, L. (2004). Technology and equity in schooling: Deconstructing the digital divide. *Educational Policy*, 18(4), 562-588.
- Weasenforth, D., Biesenbach-Lucas, S., & Meloni, C. (2002). Realising constructivist objectives through collaborative technologies: Threaded discussions. *Language Learning & Technology*, 6(3), 58-86.
- Weisband, S. P. (1992). Group discussion and first advocacy effects in computer-mediated and face-to-face decision making groups. *Organizational Behavior and Human Decision Processes*, 53(3), 352-380.
- Wells, G. (1999). *Dialogic inquiry: Towards a sociocultural practice and theory of education*. Cambridge: Cambridge University Press.
- Wertsch, J. V. (1991). A sociocultural approach to socially shared cognition. In L. B. Resnick, J. M. Levine & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 85-100). Washington, DC: American Psychological Association.
- Wheeler, S., Yeomans, P., & Wheeler, D. (2008). The good, the bad and the wiki: Evaluating student-generated content for collaborative learning. *British Journal of Educational Technology*, 39(6), 987-995.
- White, C. (2003). *Language learning in distance education*. Cambridge: Cambridge University Press.
- White, C. (2007). Focus on the language learner in an era of globalization: Tensions, positions and practices in technology-mediated language teaching. *Language Teaching*, 40(4), 321-326.
- Yamada, M., & Akahori, K. (2007). Social presence in synchronous CMC-based language learning: How does it affect the productive performance and consciousness of learning objectives? *Computer Assisted Language Learning*, 20(1), 37-65.
- Zafeiriou, G., Nunes, J., & Ford, N. (2001). Using students' perceptions of participation in collaborative learning activities in the design of online learning environments. *Education for Information*, 19(2), 83-106.
- Zeng, G., & Takatsuka, S. (2009). Text-based peer-peer collaborative dialogue in a computer-mediated learning environment in the EFL context. *System*, 37(3), 434-446.
- Zuengler, J., & Miller, E. R. (2006). Cognitive and sociocultural perspectives: Two parallel SLA worlds? *TESOL Quarterly*, 40(1), 35-58.



## APPENDICES

### Appendix A: Schedule for the whole research process

Timeline	Activities	Location
2007-2008	Literature Review	School of Language Studies, Massey University, New Zealand
Nov. 2007	Prepare detailed statement of topic;	
- Apr. 2008	Review literature on L2 theoretical framework;	
May - July	Seek specialist advice within and beyond the graduate studies field (e.g. SPSS)	
Aug. - Oct.	Review literature on CMC and CMCL; Submit publication to journals; Review on collaborative foreign language learning; Conduct a pilot study; Attend conference in Auckland (CLESOL)	
Nov. - Dec.	Obtain ethical clearance; Prepare for confirmation; Finalise literature review; Prepare to deliver pre-fieldwork seminar	
2009	Fieldwork	College of Foreign Languages, The University of Danang, Vietnam
Jan. - June	Conduct the classroom experiment in Vietnam; Deliver questionnaires and conduct interviews; Seek specialist support in data analysis, esp. computer programs; Contact the Ministry of Education and Training and Tertiary policy makers in Vietnam to gather policy documents relating to language and ICT in higher education Organise fieldwork data; Collect and analyse data from the experiment; and Undertake progress review.	

Timeline	Activities	Location
July - Dec.	Organise data; Deliver results found; Attend conference either in North America or Asia; Start analyse results and come to discussion.	School of Language Studies, Massey University, New Zealand
2010	Writing	
Jan. - May	Commence first draft of thesis.	
June - July	Refine and complete the draft.	
Aug. - Sept.	Finalize thesis and submit.	
Oct. - Nov.	Prepare for oral defence. Submit publications to journals.	

---

**Appendix B: Information sheet**

**Massey University**  
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF LANGUAGE STUDIES  
Private Bag 11 222  
Palmerston North  
New Zealand  
T 64 6 356 9099  
F 64 6 350 2271  
[www.massey.ac.nz](http://www.massey.ac.nz)

**Computer-mediated Collaborative Learning in a Tertiary EFL  
Context: Process, Product, and Students' Perceptions**

**INFORMATION SHEET**

**Researcher and Contact Detail**

**Long V Nguyen**

Brief profile: Long V Nguyen has been a lecturer in English at the University of Danang, Vietnam since 1996. He is now a doctoral candidate in the Applied Linguistics program at the School of Language Studies, Massey University, New Zealand.

Correspondence:

School of Language Studies  
Massey University, Private Bag 11 222  
Palmerston North, New Zealand  
Office: +64 6 356 9099 ext. 2414  
Email: [l.v.nguyen@massey.ac.nz](mailto:l.v.nguyen@massey.ac.nz)

**Supervisor and Contact detail**

**Prof. Cynthia J White**

Brief profile: Prof. Cynthia White is Professor of Applied Linguistics at Massey University, New Zealand.

Correspondence:

School of Language Studies  
Massey University, Private Bag 11 222  
Palmerston North, New Zealand  
Office: +64 6 356 9099 ext. 7711  
Email: [c.j.white@massey.ac.nz](mailto:c.j.white@massey.ac.nz)

## **Purpose**

The project aims to answer the following research questions:

1. What is the nature of online synchronous discussion and how effective is it in comparison with the traditional face-to-face discussion in collaborative learning in the EFL classroom?
2. What is the nature of online asynchronous peer review and how effective is it in comparison with the traditional pen-and-paper peer response in collaborative learning in the EFL classroom?
3. Does the use of a combination of online synchronous and asynchronous collaboration result in a significant improvement of English written language achievement through collaboration?
4. What are students' reflections on and perceptions of the application of CMC collaboration in the EFL classroom?

## **Participant Recruitment**

Students from the two intact third-year classes will be invited to voluntarily participate in the study. There is no potential disadvantage for students who do not wish to participate; If students in the two classes decline, they can still remain in the class without allowing their data to form part of the research. Otherwise, they can have options to get enrolled in other classes teaching the same courses during the semester.

The teacher, also the researcher, will endeavour to deliver equivalent instruction for the two classes throughout the semester. There are no evident discomforts or risks to participants while participating in the project. The project will not reimburse the participants for their involvement.

## **Project Procedures**

Participants' identities will not be disclosed; the data collected will only serve to answer the research concerns. In addition to normal class activities, participants will be invited to take part to any one or all of the activities below:

- Record their discussion in groups and submit transcripts to the teacher.
- Submit to the teacher their peer review drafts as well as final collaborative writing products.
- Participate in interviews.
- Fill in questionnaires.

The data will be used only for the purpose of the project and will be stored securely by the researcher; and it will be destroyed after 5 years. A summary of the project will be made available.

### **Participant involvement**

The project will take place 12 weeks during the second semester of the academic year 2008-2009. Participants are requested to attend class regularly. Around 30 minutes out-of-class time is needed for filling a survey. In addition, time for interviews with volunteers will be negotiated between the researcher and the participants.

### **Participant's Rights**

The students have the right to:

- decline to answer any particular question;
- ask any questions about the study at any time during participation;
- provide information on the understanding that their name will not be used unless permission is given to the researcher;
- be given access to a summary of the project findings when it is concluded;
- ask for the recordings to be turned off at any time during the interview.

### **Project Contacts**

Please do not hesitate to contact the researcher and/or the supervisor at the above contact details if you have any questions about the project.

### **Committee Approval Statement**

This project has been reviewed and approved by the Massey University Human Ethics Committee: Southern B, Application 08 / 37. If you have any concerns about the conduct of this research, please contact Dr Karl Pajo, Chair, Massey University Human Ethics Committee: Southern B, telephone 04 801 5799 x 6929, email [humanethicsouthb@massey.ac.nz](mailto:humanethicsouthb@massey.ac.nz).

## Information sheet in Vietnamese



**Massey University**  
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Tên luận án:

**Computer-mediated Collaborative Learning in a Tertiary EFL  
Context: Process, Product, and Students' Perceptions**

**TRANG THÔNG TIN**

**Thông tin về Nghiên cứu sinh**

**Nguyễn Văn Long**

Sơ lược tiểu sử: Nguyễn Văn Long giảng dạy tiếng Anh tại Đại học Đà Nẵng từ 1996. Long hiện đang là nghiên cứu sinh ngành Ngôn ngữ Ứng dụng tại Đại học Massey, New Zealand.

Địa chỉ:

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Email: [l.v.nguyen@massey.ac.nz](mailto:l.v.nguyen@massey.ac.nz)

**Thông tin về Giáo sư hướng dẫn**

**Giáo sư Cynthia J White**

Sơ lược tiểu sử: GS Cynthia White là Giáo sư chuyên ngành Ngôn ngữ Ứng dụng tại Đại học Massey, New Zealand.

Địa chỉ:

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Email: [c.j.white@massey.ac.nz](mailto:c.j.white@massey.ac.nz)



### **Mục đích nghiên cứu**

Mục đích nghiên cứu của luận án là nhằm trả lời các câu hỏi nghiên cứu sau:

1. Bản chất của thảo luận online là gì và tính hiệu quả của nó so với thảo luận nhóm truyền thống trong lớp ngoại ngữ?
2. Bản chất của sửa bài online là gì và tính hiệu quả của nó so với sửa bài nhóm truyền thống trong lớp ngoại ngữ?
3. Việc kết hợp giữa hai hình thức trao đổi trực tuyến và không trực tuyến có ảnh hưởng thế nào đến việc học nhóm?
4. Phản ánh và nhận thức của sinh viên đối với việc áp dụng giao tiếp qua máy tính trong lớp học ngoại ngữ?

### **Hình thức tuyển chọn**

Sinh viên năm thứ ba ở hai lớp Sư phạm Anh sẽ được mời tự nguyện tham gia vào chương trình học. Sẽ không có bất cứ một thiệt thòi nào đối với sinh viên không đồng ý tham gia. Những sinh viên không tham gia hoặc là vẫn học trong lớp, nhưng thông tin và bài vở của sinh viên đó sẽ không được sử dụng cho mục đích nghiên cứu; hoặc là có thể chuyển sang lớp khác cùng môn học trong học kỳ đó.

Giảng viên, đồng thời là nghiên cứu sinh, sẽ sử dụng bài giảng giống nhau cho cả hai lớp học. Sẽ không có bất cứ khó khăn hay nguy cơ nào xảy ra cho người học. Sinh viên không được trả phí cho việc tham gia vào chương trình này.

### **Quy trình nghiên cứu**

Thông tin cá nhân của người tham gia sẽ không được tiết lộ; số liệu thu thập chỉ để phục vụ công tác nghiên cứu. Ngoài các hoạt động thường ngày trong lớp, sinh viên sẽ được mời tham gia một vài hoặc tất cả các hoạt động sau:

- Ghi âm quá trình thảo luận và nộp lại cho giảng viên.
- Nộp cho giảng viên các bản góp ý trong nhóm và bài viết cuối cùng.
- Tham gia phỏng vấn.
- Điền các bảng câu hỏi điều tra.

Số liệu sẽ chỉ được dùng cho mục đích nghiên cứu, được cất giữ bảo đảm, và sẽ được hủy sau 5 năm. Kết quả nghiên cứu sẽ được cung cấp cho người tham gia nếu có yêu cầu.

### **Hình thức tham gia**

Đề án kéo dài khoảng 15 tuần trong học kỳ 2 của năm học 2008-2009. Sinh viên được yêu cầu đi học đầy đủ. Ngoài giờ học, bảng câu hỏi điều tra cần thí sinh điền khoảng 30 phút. Ngoài ra, thời gian phỏng vấn sẽ được sắp xếp giữa giảng viên và sinh viên tình nguyện tham gia.

### **Quyền lợi**

Sinh viên tham gia có các quyền sau:

- Từ chối trả lời bất cứ câu hỏi nào;
- Hỏi bất cứ điều gì trong quá trình tham gia;
- Cung cấp thông tin cá nhân và được đảm bảo rằng các thông tin sẽ không được tiết lộ;
- Được cung cấp kết quả nghiên cứu;
- Yêu cầu trả lại các đoạn ghi âm trong quá trình phỏng vấn.

### **Liên hệ**

Nếu có bất cứ câu hỏi hay thắc mắc nào, vui lòng liên hệ với nghiên cứu sinh hoặc giáo sư hướng dẫn.

### **Quyết định của Hội đồng**

Luận án này đã được xem xét và đồng ý thông qua bởi Hội đồng duyệt luận án của Đại học Massey: Nam B, Hồ sơ số **08 / 37**. Nếu có thắc mắc liên quan đến việc tiến hành luận án, vui lòng liên hệ với TS. Karl Pajo, Chủ tịch Hội đồng, điện thoại 04 801 5799 x 6929, email: [humanethicsouthb@massey.ac.nz](mailto:humanethicsouthb@massey.ac.nz).

## Appendix C: Consent form



**Massey University**  
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www.massey.ac.nz

**Computer-mediated Collaborative Learning in a Tertiary EFL  
Context: Process, Product, and Students' Perceptions**

**PARTICIPANT CONSENT FORM**

**This consent form will be held for a period of five (5) years**

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I understand that I have the right to withdraw from the study at any time and to decline to answer any particular questions.

I agree to provide information (questionnaires) to the researcher on the understanding that my name will not be released without my permission.

I agree  / do not agree  to the group discussion being recorded.

I agree  / do not agree  to the focus group interview being recorded.

I agree  / do not agree  to the interview being recorded.

I also understand that I have the right to ask for the recording turned off at any time during the interview.

I agree to freely and voluntarily participate in this study under the conditions set out in the Information Sheet.

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Full Name –  
printed:** \_\_\_\_\_

## Consent form in Vietnamese



**Massey University**  
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Tên luận án:

**Computer-mediated Collaborative Learning in a Tertiary EFL  
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**BẢNG CAM KẾT**

**Bảng cam kết này được lưu giữ trong thời hạn năm (5) năm**

Tôi đã đọc trang Thông tin và đã được giải thích rõ về chương trình nghiên cứu này. Các câu hỏi của tôi đã được trả lời thỏa đáng, và tôi hiểu rằng tôi có thể hỏi thêm thông tin bất cứ lúc nào.

Tôi hiểu rằng tôi có quyền rút khỏi chương trình nghiên cứu bất cứ lúc nào và có thể từ chối trả lời bất cứ câu hỏi nào.

Tôi đồng ý cung cấp thông tin (qua phiếu điều tra) cho người nghiên cứu, với điều kiện là tên tôi không được tiết lộ nếu không có sự đồng ý của tôi.

Tôi đồng ý  / không đồng ý  thu âm các cuộc hội thảo nhóm

Tôi đồng ý  / không đồng ý  thu âm cuộc phỏng vấn nhóm.

Tôi đồng ý  / không đồng ý  thu âm cuộc phỏng vấn.

Tôi cũng hiểu rằng tôi có quyền yêu cầu ngưng thu âm trong quá trình phỏng vấn.

Tôi đồng ý tự nguyện tham gia vào chương trình nghiên cứu này theo các điều kiện ở trang Thông tin.

**Ký tên:** ..... **Ngày:** .....

**Họ và tên** .....



**Appendix D: Request letter to CFL**

**Massey University**  
COLLEGE OF HUMANITIES AND SOCIAL SCIENCES

SCHOOL OF LANGUAGE STUDIES  
Private Bag 11 222  
Palmerston North  
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**REQUEST LETTER**

FOR PERMISSION TO CONDUCT RESEARCH AT THE COLLEGE OF FOREIGN  
LANGUAGES, THE UNIVERSITY OF DANANG, VIETNAM

5 October, 2008  
The Rector,  
College of Foreign Languages  
The University of Danang  
131 Luong Nhu Hoc Street  
Danang City, Vietnam

Dear Rector,

I write this letter to request your permission to conduct the following research as part of my PhD study program from Massey University, New Zealand. Below is my research detail.

Research topic: Computer-mediated Collaborative Learning in a Tertiary EFL  
Context: Process, Product, and Students' Perceptions  
Participants: Around 60 third-year students of the TEFL program  
Course: American Culture  
Time: Semester 2, academic year 2008-2009

It is noted that the College will be named in the project as one of the particular sociocultural settings of language learning in Vietnam. More detail of the project is enclosed in the Information Sheet and Consent Form for your information. If you require any more information, please contact me and/or my supervisor and/or Massey University Human Ethics Committee. The contact information is in the Information Sheet.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Long V Nguyen'.

Long V Nguyen

**Appendix E: Letter of approval from CFL**



THE UNIVERSITY OF DANANG  
College of Foreign Languages  
131 Luong Nhu Hoc St., Cam Le  
Danang City, Vietnam

VIETNAM

Tel: +84 511 3699333  
Fax: +84 511 3699338  
Website: <http://www.cfl.udn.vn>

November 5, 2008

Long V Nguyen  
School of Language Studies  
Massey University  
Private Bag 11 222  
Palmerston North 4442  
New Zealand

Dear Long,

I have received your letter of request for conducting your research in the College of Foreign Languages, the University of Danang. On behalf of the management board of the College, I would like to welcome you back to our College. I hereby confirm that I am glad to accept your request; and the College is willing to support you during the time you are here.

Please do not hesitate to contact me and/or the college staff if you need any further information and assistance.

Best regards,

Dr. Phan Van Hoa  
Rector  
College of Foreign Languages  
The University of Danang

**Appendix F: Human ethics approval**



**Massey University**

OFFICE OF THE ASSISTANT  
TO THE VICE-CHANCELLOR  
(Research Ethics)  
Private Bag 11 222  
Palmerston North 4442  
New Zealand  
T 64 6 350 5573/350 5575  
F 64 6 350 5622  
humanethics@massey.ac.nz  
animaethics@massey.ac.nz  
gtc@massey.ac.nz  
www.massey.ac.nz

31 October 2008

Mr Long Nguyen  
School of Language Studies  
PN231

Dear Long

**Re: HEC: Southern B Application – 08/37**  
**Computer mediated collaborative learning in an EFL environment: Process,**  
**product and students' perceptions**

Thank you for your letter dated 30 October 2008.

On behalf of the Massey University Human Ethics Committee: Southern B I am pleased to advise you that the ethics of your application are now approved. Approval is for three years. If this project has not been completed within three years from the date of this letter, reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Karl Pajo'.

Dr Karl Pajo, Chair  
**Massey University Human Ethics Committee: Southern B**

cc Prof Cynthia White  
School of Language Studies  
PN231

Prof Paul Spoonley, Acting HoS  
School of Language Studies  
PN231

Massey University Human Ethics Committee  
Accredited by the Health Research Council

Te Kumea  
ki Pūrehuroa

**Appendix G: Self-rating of English language proficiency: Detailed information**

	Rate	Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
		No.	%	No.	%	No.	%
Listening	Weakest	5	16.7	9	30.0	14	23.3
	Weak	11	36.7	10	33.3	21	35.0
	Average	13	43.3	8	6.7	21	35.0
	Strong	1	3.3	3	10.0	4	6.7
	Strongest	0	.0	0	.0	0	.0
Speaking	Weakest	0	.0	2	6.7	2	3.3
	Weak	11	36.7	9	30.0	20	33.3
	Average	17	56.7	10	33.3	27	45.0
	Strong	2	6.7	9	30.0	11	18.3
	Strongest	0	.0	0	.0	0	.0
Reading	Weakest	0	.0	1	3.3	1	1.7
	Weak	7	23.3	1	3.3	8	13.3
	Average	15	50.0	21	70.0	36	60.0
	Strong	7	23.3	6	20.0	13	21.7
	Strongest	1	3.3	1	3.3	2	3.3
Writing	Weakest	2	6.7	1	3.3	3	5.0
	Weak	6	20.0	12	40.0	18	30.0
	Average	18	60.0	11	36.7	29	48.3
	Strong	4	13.3	5	16.7	9	15.0
	Strongest	0	.0	1	3.3	1	1.7
Grammar	Weakest	0	.0	1	3.3	1	1.7
	Weak	0	.0	2	6.7	2	3.3
	Average	11	36.7	4	13.3	15	25.0
	Strong	14	46.7	16	53.3	30	50.0
	Strongest	5	16.7	7	23.3	12	20.0

---

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		Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
Rate		No.	%	No.	%	No.	%
Vocabulary	Weakest	0	.0	0	.0	0	.0
	Weak	3	10.0	4	13.3	7	11.7
	Average	19	63.3	21	70.0	40	66.7
	Strong	8	26.7	4	13.3	12	20.0
	Strongest	0	.0	1	3.3	1	1.7

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**Appendix H: Perceived benefits of collaborative learning: Detailed description**

		Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
		No.	%	No.	%	No.	%
Pair/group work per week	Never	0	.0	2	6.7	2	3.3
	1-2 times	5	16.7	12	40.0	17	28.3
	3-4 times	22	73.3	12	40.0	34	56.7
	5 or more	3	10.0	4	13.3	7	11.7
Pair/group work useful?	Yes	29	96.7	28	93.3	57	95.0
	No	1	3.3	0	.0	1	1.7
	Don't know	0	.0	2	6.7	2	3.3
Pair/group work help improve English?	Yes	28	93.3	28	93.3	56	93.3
	No	2	6.7	1	3.3	3	5.0
	Don't know	0	.0	1	3.3	1	1.7
Classmates' comments useful?	Yes	29	96.7	27	93.3	56	93.3
	No	1	3.3	0	.0	1	1.7
	Don't know	0	.0	3	10.0	3	5.0
Networked computers beneficial for pair/group work?	Yes	28	93.3	28	93.3	56	93.3
	No	0	.0	1	3.3	1	1.7
	Don't know	2	6.7	1	3.3	3	5.0

---

**Appendix I: Perceived benefits of networked computers: Detailed description**

		Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
	Opinions	No.	%	No.	%	No.	%
English in general	Strongly disagree	0	.0	1	3.3	1	1.7
	Disagree	0	.0	0	.0	0	.0
	Don't know	1	3.3	0	.0	1	1.7
	Agree	12	40.0	17	56.7	29	48.3
	Strongly agree	17	56.7	12	40.0	29	48.3
Listening	Strongly disagree	0	.0	0	.0	0	.0
	Disagree	2	6.7	1	3.3	3	5.0
	Don't know	2	6.7	3	10.0	5	8.3
	Agree	23	76.7	18	60.0	41	68.3
	Strongly agree	3	10.0	8	26.7	11	18.3
Speaking	Strongly disagree	0	.0	1	3.3	1	1.7
	Disagree	4	13.3	2	6.7	6	10.0
	Don't know	9	30.0	10	33.3	19	31.7
	Agree	17	56.7	15	50.0	32	53.3
	Strongly agree	0	.0	2	6.7	2	3.3
Reading	Strongly disagree	0	.0	1	3.3	1	1.7
	Disagree	0	.0	1	3.3	1	1.7
	Don't know	3	10.0	0	.0	3	5.0
	Agree	21	70.0	21	70.0	42	70.0
	Strongly agree	6	20.0	7	23.3	13	21.7
Writing	Strongly disagree	0	.0	0	.0	0	.0
	Disagree	2	6.7	2	6.7	4	6.7
	Don't know	4	13.3	2	6.7	6	10.0
	Agree	19	63.3	23	76.7	42	70.0
	Strongly agree	5	16.7	3	10.0	8	13.3

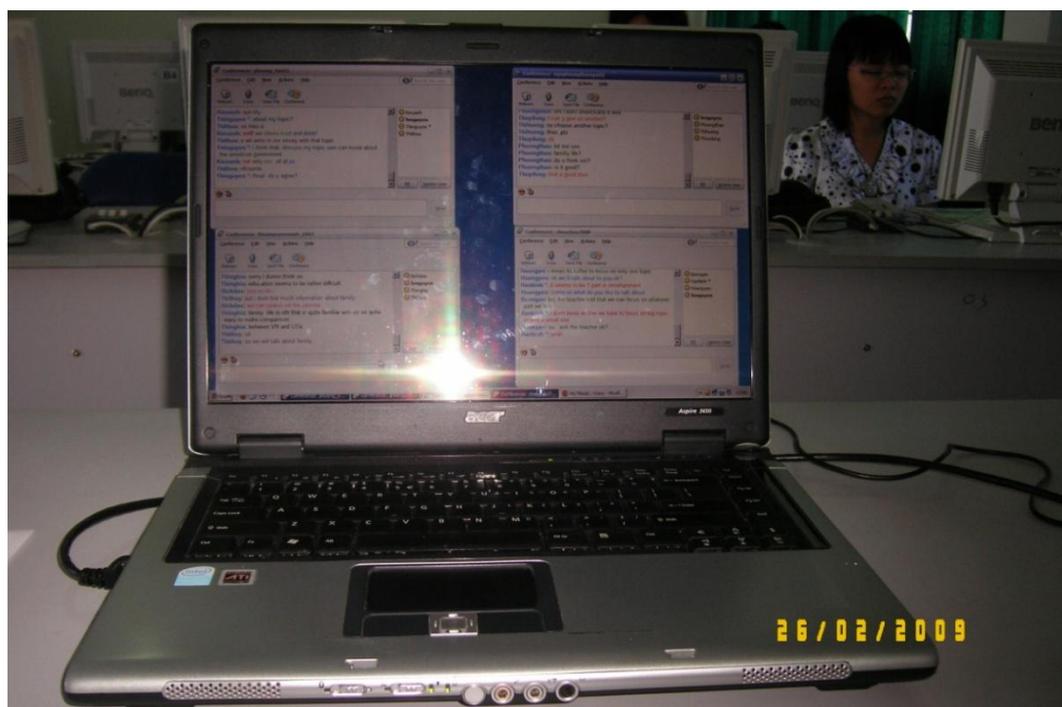
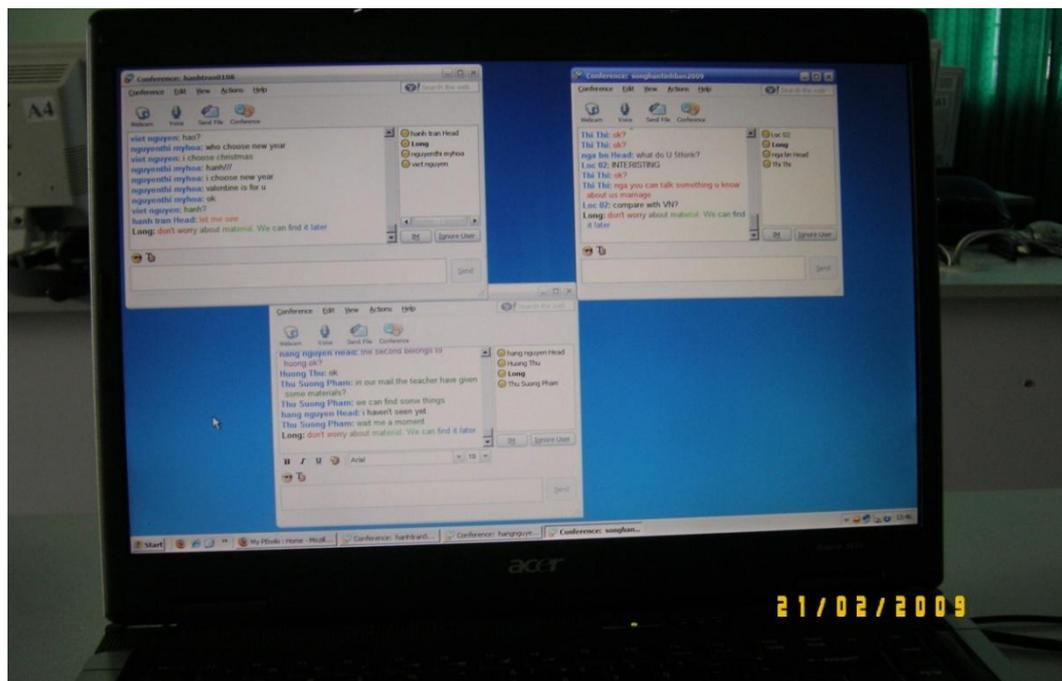
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		Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
Opinions		No.	%	No.	%	No.	%
Grammar	Strongly disagree	0	.0	0	.0	0	.0
	Disagree	0	.0	4	13.3	4	6.7
	Don't know	3	10.0	1	3.3	4	6.7
	Agree	25	83.3	23	76.7	48	80.0
	Strongly agree	2	6.7	2	6.7	4	6.7
Vocabulary	Strongly disagree	0	.0	0	.0	0	.0
	Disagree	0	.0	1	3.3	1	1.7
	Don't know	0	.0	2	6.7	2	3.3
	Agree	21	70.0	17	56.7	38	63.3
	Strongly agree	9	30.0	10	33.3	19	31.7
Pair/group work	Strongly disagree	1	3.3	1	3.3	2	3.3
	Disagree	2	6.7	2	6.7	4	6.7
	Don't know	10	33.3	9	30.0	19	31.7
	Agree	13	43.3	14	46.7	27	45.0
	Strongly agree	4	13.3	4	13.3	8	13.3

**Appendix J: Computer use per week: Detailed information**

	Hours	Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
		No.	%	No.	%	No.	%
Chat	Never	9	30.0	7	23.3	16	26.7
	1 – 5	16	53.3	21	70.0	37	61.7
	6 – 10	4	13.3	1	3.3	5	8.3
	11 – 15	1	3.3	1	3.3	2	3.3
	16 – 20	0	.0	0	.0	0	.0
	> 21	0	.0	0	.0	0	.0
Email	Never	6	20.0	11	36.7	17	28.3
	1 – 5	19	63.3	17	56.7	36	60.0
	6 – 10	4	13.3	2	6.7	6	10.0
	11 – 15	0	.0	0	.0	0	.0
	16 – 20	0	.0	0	.0	0	.0
	> 21	1	3.3	0	0	1	1.7
Surfing	Never	1	3.3	1	3.3	2	3.3
	1 – 5	17	56.7	16	53.3	33	55.0
	6 – 10	5	16.7	9	30.0	14	23.3
	11 – 15	5	16.7	2	6.7	7	11.7
	16 – 20	1	3.3	1	3.3	2	3.3
	> 21	1	3.3	1	3.3	2	3.3
Learning English	Never	1	3.3	2	6.7	3	5.0
	1 – 5	23	76.7	23	76.7	46	76.7
	6 – 10	4	13.3	5	16.7	9	15.0
	11 – 15	1	3.3	0	.0	1	1.7
	16 – 20	0	.0	0	.0	0	.0
	> 21	1	3.3	0	.0	1	1.7

	Hours	Control Class (n=30)		CMC Class (n=30)		Total (n=60)	
		No.	%	No.	%	No.	%
Word	Never	3	10.0	5	16.7	8	13.3
Processing	1 – 5	16	63.3	22	73.3	38	63.3
	6 – 10	6	20.0	2	6.7	8	13.3
	11 – 15	3	10.0	1	3.3	4	6.7
	16 – 20	1	3.3	0	0	1	1.7
	> 21	1	3.3	0	0	1	1.7
Blog and/or	Never	16	53.3	16	53.3	32	53.3
Wiki	1 – 5	6	20.0	13	43.3	19	31.7
	6 – 10	6	20.0	1	3.3	7	11.7
	11 – 15	2	6.7	0	.0	2	3.3
	16 – 20	0	.0	0	.0	0	.0
	> 21	0	.0	0	.0	0	.0
Total Time	Never	0	.0	0	.0	0	.0
	1 – 5	6	20.0	2	6.7	8	13.3
	6 – 10	10	33.3	12	40.0	22	36.7
	11 – 15	4	13.3	5	16.7	9	15.0
	16 – 20	5	16.7	1	3.3	6	10.0
	> 21	5	16.7	10	33.3	15	25.0

**Appendix K: Teacher's laptop during the chat discussions**

It shows that the teacher could at the same time monitor online chats of several groups.

**Appendix L: Instruction on PBWikis****INSTRUCTION**

Before starting your collaborative writing,  
you need to consult the peer feedback process in [this folder](#).

**To start writing:**

- Click "Create a page" on the top right corner of the page.
- Name the page with your name (either first name or full name. This doesn't matter as long as other members know that page is yours).
- Click "Create page" to go to the writing space where you can type your paragraph (where the cursor blinks)
- When you finish writing, click "Save".
- Remember: You can write and rewrite your paragraph as many times as you can by clicking the "edit" button above your page name.

**To give comments and feedback:**

- Please consult [this sheet](#). You can give feedback based on this guide.
- Click on "Pages and Files" on the top right corner of the page.
- Select your group members' page by clicking the names.
- At the bottom of the page, you'll see "Add a comment" space where you can leave your comments on the paragraph.
- You can also click "Edit" and use some of the Microsoft Word functions (eg, Bold, Underline, Color, etc.) to help improve the paragraph.
- Click "Save" when you finish.
- Remember: You can give comments and feedback on the paragraph as many times as you can.

**Note:**

- One member one page.
- Each group leader has to create another page at the end to complete the whole essay.
- You can always ask your teacher everything that you are confused by putting a comment on this page.
- You can download this INSTRUCTION for your convenience.
- Your PBWiki Web address is 06spa02\*\*.pbwiki.com (with \*\* is your group number. For example, type: 06spa0201.pbwiki.com if you are in group 01).

---

### Appendix M: Discussion guideline

After going through the learning material (both main and supplement), be prepared to discuss within your group what will be included in the assignment essay. Please be noted that the time for discussion should be limited in 30 minutes.

Discussion procedure	Focus*
• Get to know each other;	Socioaffective
• Discuss what topics are you going to focus on;	Sociocognitive: topic selection / initiation / inquiry
• Explain why you find a particular topic or subtopic is interesting;	Sociocognitive: topic negotiation
• Try to persuade other members;	Sociocognitive: topic negotiation / integration
• Discuss and prepare the organisation of the essay;	Sociocognitive: essay structure / content arrangement
• Assign the task among individuals;	Organizational: task division
• Suggest group members what to include in their piece of writing.	Sociocognitive: idea development

---

\* Note: Only the discussion procedure column was presented to the students, the focus column was added later for research purposes.

**Appendix N: Peer review sheet**

**SAMPLE PEER REVIEW SHEET FOR AN ESSAY**

Your name: ..... Class: .....

Author's name: .....

Please answer the following questions, keeping in mind that the purpose of peer response is to help each other write better.

1. Can you find the topic sentence? [ ] Yes [ ] No [ ] I don't know

Explain your answer: .....  
.....

2. Please underline what you think is the topic sentence.

3. Read the paragraph carefully. Underline everything that you don't understand.

4. What do you like best about this essay?

.....  
.....

5. What questions, comments, and/or suggestions do you have for the author?

.....  
.....

**Appendix O: Pre-project questionnaire**



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**PRE-PROJECT STUDENT’S BIO DATA, COLLABORATIVE LEARNING, AND COMPUTER USAGE EXPERIENCE**

The purpose of this questionnaire is to gather background information about yourself and your experience on collaborative learning and computer usage.

**Section 1: Biodata**

1.1. Full name: ..... Gender:  Female  Male

1.2. Email: ..... Class: .....

1.3. Age:  under 18  18-20  21-23  above 24

1.4. In which city/province did you get your high school diploma?  
.....

1.5. You started learning English at  Form 6  Form 10  Others

1.6. Your last semester’s GPA: .....

1.7. How would you rate your skills of English?  
(Please tick. 1: weakest – 5: strongest)

	1	2	3	4	5
Listening					
Speaking					
Reading					
Writing					
Grammar					
Vocabulary					

1.8. Does the new foreign language learning policy, in which English is now taught at Grade 3 instead of Grade 6, affect your future career?  
 Yes  No  No idea

Please explain: .....  
.....



---

**Section 2: Collaborative Learning**

- 2.1. How much interaction do you have in class **now** (in percentage)  
with teacher?:  less than 30%  30–50%  51–70%  more than 70%  
with classmates?:  less than 30%  30–50%  51–70%  more than 70%
- 2.2. How much interaction do you **want** to have in class (in percentage)  
with teacher?:  less than 30%  30–50%  51–70%  more than 70%  
with classmates?:  less than 30%  30–50%  51–70%  more than 70%
- 2.3. How many times a week do you work in pair/group in class?  
 0  1-2  3-4  5 or more
- 2.4. Is pair/group work useful for your study in general?  
 yes  no  don't know
- 2.5. Does pair/group work help improve your English?  
 yes  no  don't know
- 2.6. Are your classmates' comments useful?  
 yes  no  don't know
- 2.7. Do you think networked computers can be beneficial for pair/group work?  
 yes  no  don't know

**Section 3: Computer Experience**

- 3.1. Do you have a computer at home?  Yes  No  for how long? .....
- 3.2. How long have you used computers?  
 less than 3 months  3-6 months  6-12 months  more than 1 year
- 3.3. Please rate your computer skills:  
 poor  good  fairly good  very good  excellent
- 3.4. Please rate your typing ability:  
 poor  good  fairly good  very good  excellent
- 3.5. Is the use of computers beneficial for learning English?  
 strongly disagree  disagree  don't know  agree  strongly agree

3.6. How many hours a week do you use computers for the following purposes?

Hours	Never	1-5	6-10	11-15	16-20	21 or more
Chat						
Email						
Surfing the Internet						
Learning English						
Word processing						
Blog/Wiki						
Others: (please specify) .....						
Total time of using computers						

3.7. The use of networked computers can improve your ability in ... (please tick)

	Strongly disagree	Disagree	Don't know	Agree	Strongly agree
Listening					
Speaking					
Reading					
Writing					
Grammar					
Vocabulary					
Pair/group work					
Others: (please specify) .....					

3.8. Does the theme of this year “ICT Application 2008-2009” affect your learning?

Yes    No    No idea

Please explain: .....

.....

3.9. What do you like most when working/learning with computers?

.....

3.10. What do you dislike most when working/learning with computers?

.....

Note: You are encouraged to send the teacher/researcher any other ideas and suggestions at any time via email: [nvlong@udn.vn](mailto:nvlong@udn.vn).

**Thank you for your cooperation.**

**Appendix P: After-chat interview schedule**

**AFTER-CHAT INTERVIEW SCHEDULE**

(This interview is aimed at the students in the CMC class right after the SCMC session. The interview is expected to take 15 minutes each.)

Full name: ..... Gender:  Female  Male

Email: ..... Group: .....

1. Did you enjoy the chat session last week?
2. What did you do when you didn't understand your friends?
3. Does "chat" help you to learn English? Why / why not?
4. Did you learn any new language? What was it?
5. What do you like best about chat?
6. Are there any things that you don't like about this type of discussion?
7. How could you improve next time?
8. (While looking at the transcripts) Can you identify a part of the session that was helpful to you? What happened? How was it helpful?
9. To summarise, can you tell three things that you learned through taking part in the chat session?
  - a) .....
  - b) .....
  - c) .....

Note: You are encouraged to send the teacher/researcher any other ideas and suggestions at any time via email: [nvlong@udn.vn](mailto:nvlong@udn.vn).

**Thank you for your cooperation.**

**Appendix Q: Post-project questionnaire**



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**POST-PROJECT PERCEPTION QUESTIONNAIRE**

(This questionnaire is aimed at the students in the CMC class at the end of the course. This CMC course includes aspects of chat discussion, wiki peer exchange, and final collaborative product. The questionnaire is expected to take 30 minutes.)

Full name: ..... Gender:  Female  Male

Email: ..... Group: .....

Please circle the following statements

1 = strongly disagree      2 = disagree      3 = agree      4 = strongly agree

1. I like learning English with computers. 1 2 3 4
2. I enjoyed the chat discussion with my group members. 1 2 3 4
3. The chat discussion generated plenty of ideas. 1 2 3 4
4. I felt more confident in sharing my ideas in the chat group. 1 2 3 4
5. Members' contributions during the chat discussion are equal. 1 2 3 4
6. I enjoyed the wiki peer exchanges. 1 2 3 4
7. It is easy to work on the Wiki. 1 2 3 4
8. The wiki peer comments helped me revise my draft. 1 2 3 4
9. I learned much from my classmates' comments. 1 2 3 4



---

10.	Wiki helped me write more than traditional class.	1	2	3	4
11.	I enjoyed the collaborative learning opportunities.	1	2	3	4
12.	I am satisfied with the final collaborative product.	1	2	3	4
13.	I gained new ways of learning from the collaborative work.	1	2	3	4
14.	Everyone in the group contributed equally to the final work.	1	2	3	4
15.	I had a lot of interaction with my classmates via the computers.	1	2	3	4
16.	This course helped improve my computer skills.	1	2	3	4
17.	My English improves as a result of CMC collaboration.	1	2	3	4
18.	My grammar improves as a result of CMC collaboration.	1	2	3	4
19.	My writing improves as a result of CMC collaboration.	1	2	3	4
20.	My vocabulary improves as a result of CMC collaboration.	1	2	3	4
21.	I felt more involved in learning during this course.	1	2	3	4
22.	I enjoy learning English more after this class.	1	2	3	4
23.	I enjoy collaborative learning more after this class.	1	2	3	4
24.	I will recommend this way of learning to my friends.	1	2	3	4

25. What are the most useful aspects of Yahoo! Messenger?

.....

.....

.....

.....

26. What are the least useful aspects of Yahoo! Messenger?

.....

.....

.....

.....

27. What are the most useful aspects of PBWiki?

.....  
.....  
.....  
.....

28. What are the least useful aspects of PB Wiki?

.....  
.....  
.....  
.....

29. What advice, if any, would you give to future students who will attend a similar CMCL class like this?

.....  
.....  
.....  
.....

30. Please add your comments, if any, about the application of CMCL to a language class:

.....  
.....  
.....  
.....

**Note:** You are encouraged to send the teacher/researcher any other ideas and suggestions at any time via email: [nvlong@udn.vn](mailto:nvlong@udn.vn).

**Thank you for your cooperation.**

**Appendix R: Post-project interview schedule**

**POST-PROJECT INTERVIEW SCHEDULE**

(This interview is aimed at the students in the CMC class at the end of the course. This CMC course includes aspects of chat discussion, wiki peer exchange, and final collaborative product. The interview is expected to last for 30 minutes each.)

Full name: ..... Gender:  Female  Male

Email: ..... Group: .....

1. What do you think of this CMC class? How would you describe it?
2. What do you like most about this CMC class? In the chat discussion section? In the wiki peer exchange section? In the final collaborative product?
3. Which one do you prefer: chat discussions or wiki exchange or both? Why?
4. Is there anything you don't like about this course?
  
5. Do you think CMC helps you improve your English? How?
6. Which language skills do you think you develop most?
7. Which activities of this course were the most helpful for learning English?
8. What are the language skills gained from this class that you will need in the future?
  
9. How did you feel about learning English with computers at the beginning of the course (in February) and then at the end of the course (in May)?
10. Can you identify experiences that were critical incidents or turning point for you during the course?
11. Would you like to attend another similar CMC collaborative class in the future?
12. How will the theme "The Year of ICT" affect you as language student and as a future teacher?

Note: You are encouraged to send the teacher/researcher any other ideas and suggestions at any time via email: [nvlong@udn.vn](mailto:nvlong@udn.vn).

**Thank you for your cooperation.**

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**Appendix S: Gini coefficient**

The Gini coefficient is a measure of statistical dispersion, commonly used as a measure of inequality. The formula for calculating the Gini coefficient is as below:

$$G_1 = \left( \frac{2}{n^2 \bar{x}} \right) \sum_{i=1}^n \left( \left( i - \frac{n+1}{2} \right) x_i \right) \quad 0 \leq G_1 \leq 1$$

Where:

$$\bar{x} = \frac{1}{n} \sum_{i=1}^n x_i$$

Due to the complexity of conducting the mathematical calculation of the formula, I have searched and found out the online calculator that helps automatically compute the Gini coefficient and other forms of concentration coefficient (<http://www.wessa.net/co.wasp>). The user just enters the required percentage of group members' contribution; the online calculator will immediately reveal the results. This was timesaving as far as the calculation was concerned.

---

**Appendix T: Coding scheme for discussion episodes**

Theme	Subcategory	Definition
Socioaffective	Social cohesion	Episodes referring to greeting, introducing, closing, and farewell
	Emotional expression	Episodes regarding humour, self-disclosure, and use of emoticons
	Intersubjectivity	Episodes concerning encouragement, personal requests, and evaluation
	Personal exchanges	Episodes asking and responding to ideas not related to task
Organisational	Teacher involvement	Episodes involving participation of the teacher
	Group management	Episodes expressing the readiness to start the discussion, seeking and providing help, reference request, and group-work time arrangement
	Discussion management	Episodes including concern about the discussion time, negotiating ways to discuss, and reverting to the discussion route when being distracted
	Technical management	Episodes concerning the functionality and use of the mediator, i.e. Yahoo! chat
Sociocognitive	Idea development	Episodes relating to generating ideas for the essays
	Topic selection	Episodes relating to exchanges to select the topic for the task
	Content arrangement	Episodes are those discussing the logical distribution of ideas for the essay
	Task management	Episodes involve those of task confusion, task clarification, task confirmation, and task division
	Essay structure arrangement	Episodes relating to the number and/or the order of paragraphs in the essay

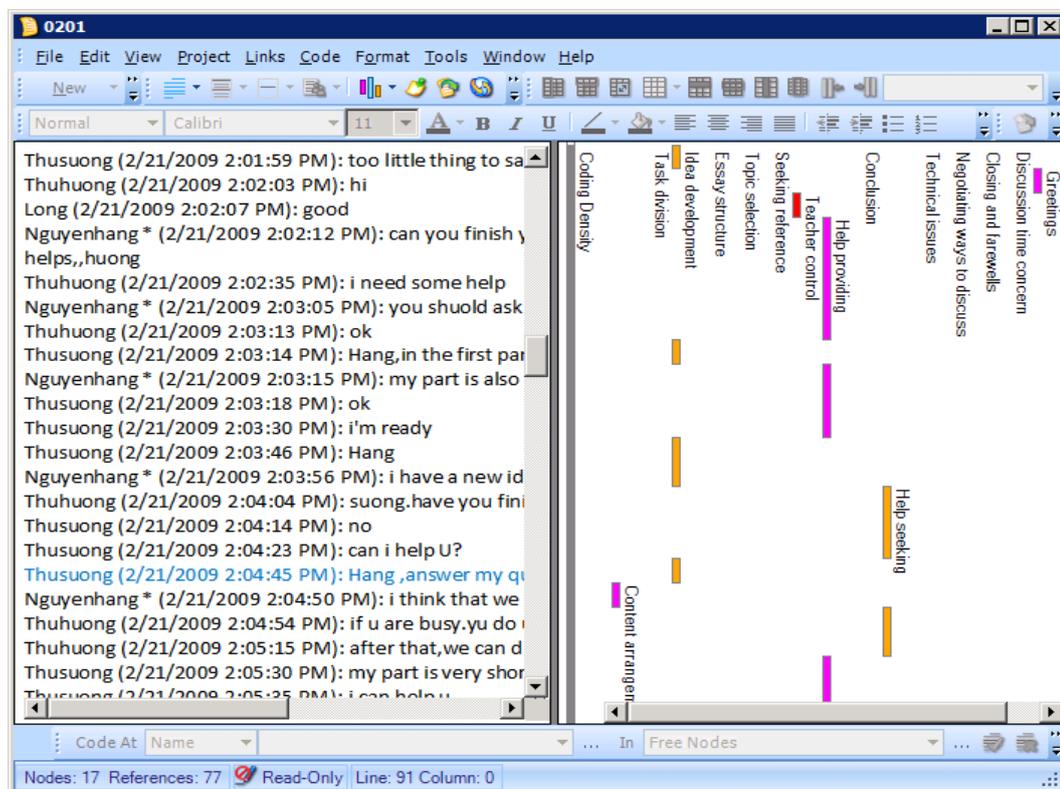
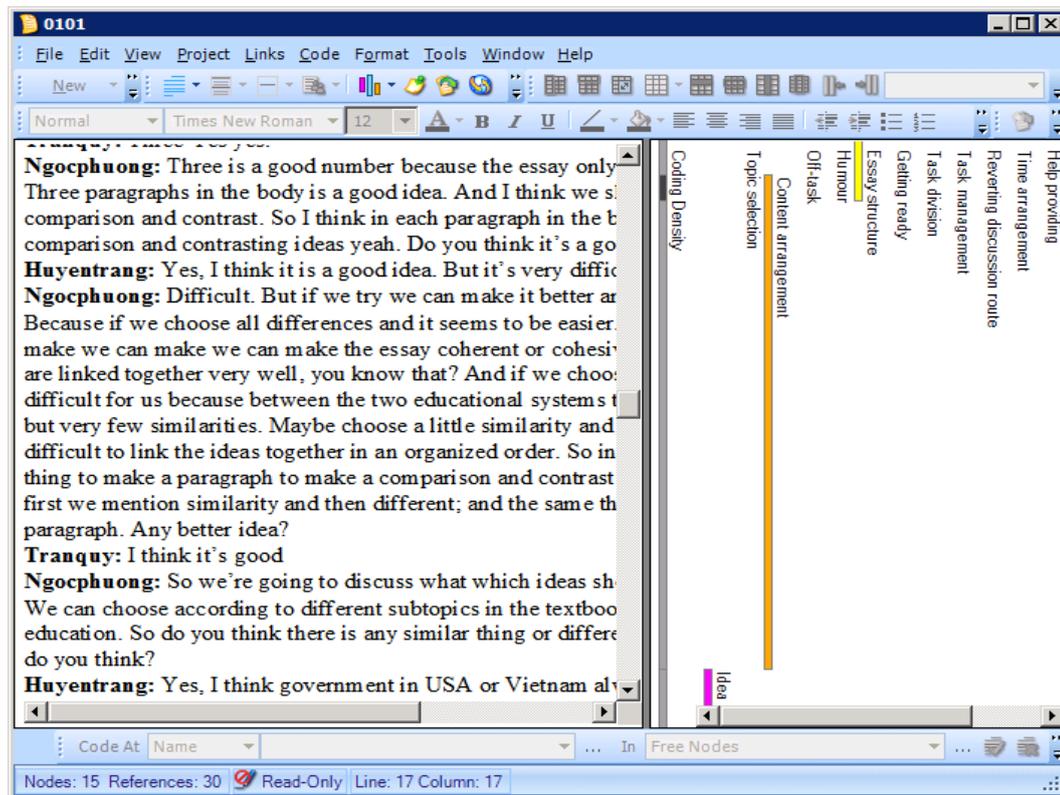
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Theme	Subcategory	Definition
	Conclusion	Episodes reviewing and/or summarising what has been discussed
	Language-related	Episodes talking about the language used in the essay or expressing/resolving misunderstanding caused by language use during discussion

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Note: Examples are presented in Chapter Five.

Appendix U: Snapshots of NVivo 8.0 coding



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**Appendix V: Coding scheme for peer comments**

Theme	Subcategory	Definition
Socioaffective	Intersubjectivity	Comments regarding encouragement, acknowledgement, seeking agreement, and agreeing or rejecting ideas
	Personal exchanges	Comments asking and responding to ideas not related to task
	Emotional expression	Comments regarding humour, self-disclosure, and use of emoticons
	Social cohesion	Comments referring to greeting, introducing, closing, and farewell
	Use of L1	Comments in Vietnamese
Organisational	Feedback management	Comments (1) indicating to other members that some entries have been entered, (2) indicating to other members that drafts have been revised, and (3) reminding others to add comments
	Teacher involvement	Comments added by the teacher
	Group management	Comments expressing the finishing of the peer review process and group work time management
	Technical management	Comments regarding the use of wiki as a platform
Sociocognitive	Alteration	Comments regarding addition, deletion, and replacement on text
	Suggestion	Comments suggesting others to modify drafts (both local and global areas)
	Evaluation	Comments evaluating drafts (either critical or complimentary / both local and global areas)
	Explanation	Comments following what was evaluated, suggested, and/or responding to others' request for clarification (both local and global areas)

---

Theme	Subcategory	Definition
	Clarification	Comments asking others to clarify confusing points in drafts (both local and global areas)

---

Note: Examples are presented in Chapter Six.

### Appendix W: Summary of methodology

Research objective: To examine and investigate the effectiveness and perceptions of CMC technologies in collaborative foreign language learning in a Vietnamese sociocultural EFL context.

Research question	Data collection	Data analysis	Research tool
1) What is the nature and contribution of online synchronous discussion in comparison with traditional face-to-face discussion in collaborative learning in the EFL classroom?	Pre-project questionnaire	Quantitative	SPSS 17
	Chat scripts	Quantitative/qualitative Unit of analysis: episodes	CLAN Gini coefficients NVivo 8.0
	After-chat interviews	Qualitative	NVivo 8.0
2) What is the nature and contribution of online asynchronous peer review in comparison with traditional pen-and-paper peer review in collaborative learning in the EFL classroom?	Pre-project questionnaire	Quantitative	SPSS 17
	Peer review comments	Quantitative/qualitative Unit of analysis: sentences	SPSS 17 NVivo 8.0
	Post-project interviews	Qualitative	NVivo 8.0
3) To what extent, and in what ways, do online exchange processes lead to improved English language achievement?	Final collaborative products (essays)	Quantitative/qualitative	SPSS 17 Wordsmith Word Perfect's Grammatik Marking
	Observations	Qualitative	NVivo 8.0
4) What are students'	Post-project	Quantitative/qualitative	SPSS 17

---

Research question	Data collection	Data analysis	Research tool
reflections on and perceptions of the application of CMC collaboration in the EFL classroom?	questionnaire Post-project interviews Observations	Qualitative Qualitative	NVivo 8.0 NVivo 8.0

---

**Appendix X: Quantitative analysis of the final essays by group**

Group	Total words	Total sentences	Sentence length	Diversity: Standardised TTR	Density: Standardised TTR	Errors/sentences	Types of errors/sentences
0101	379	13	29	64.67	64.67	0.15	0.15
0102	500	31	16	70.60	70.60	0.19	0.13
0103	417	29	14	67.25	67.25	0.03	0.03
0104	575	31	19	67.40	67.80	0.32	0.23
0105	533	33	16	66.80	67.00	0.48	0.12
0106	465	37	13	67.00	67.00	0.00	0.00
0107	747	40	19	66.71	66.71	0.25	0.10
0108	446	30	15	67.75	68.00	0.40	0.20
0109	342	21	16	64.33	65.33	0.57	0.14
0112	472	16	18	70.25	70.50	0.75	0.31
0201	932	53	18	68.33	68.89	0.30	0.09
0202	507	28	18	67.60	67.60	0.29	0.11
0203	583	39	15	67.40	67.80	0.36	0.13
0204	619	32	19	65.67	65.67	0.34	0.19
0205	921	49	19	70.11	70.11	0.45	0.12
0206	422	25	17	67.00	67.25	0.52	0.16
0207	441	29	15	65.75	66.00	0.17	0.10
0208	541	34	16	66.40	67.20	0.47	0.15
0209	550	29	19	65.40	67.60	0.59	0.17
0210	478	28	17	66.00	66.00	0.25	0.11

---

**Appendix Y: Students' responses to the post-project questionnaire**

	Strongly disagree		Disagree		Agree		Strongly agree	
	N	%	N	%	N	%	N	%
1. I like learning English with computers.					23	76.7	7	23.3
2. I enjoyed the chat discussion with my group members.			3	10.0	23	76.7	4	13.3
3. The chat discussion generated plenty of ideas.			7	23.3	19	63.3	4	13.3
4. I felt more confident in sharing my ideas in the chat group.			3	10.0	14	46.7	13	43.3
5. Members' contributions during the chat discussion are equal.			8	26.7	17	56.7	5	16.7
6. I enjoyed the wiki peer exchanges.			2	6.7	16	53.3	12	40.0
7. It is easy to work on the Wiki.			4	13.3	17	56.7	9	30.0
8. The wiki peer comments helped me revise my draft.			2	6.7	19	63.6	9	30.0
9. I learned much from my classmates' comments.					24	80.0	6	20.0
10. Wiki helped me write more than traditional class.			8	26.7	16	53.3	6	20.0
11. I enjoyed the collaborative learning opportunities.					24	80.0	6	20.0
12. I am satisfied with the final collaborative product.	1	3.3	6	20.0	20	66.7	3	10.0
13. I gained new ways of learning from the collaborative work.			2	6.7	23	76.7	5	16.7

	Strongly disagree		Disagree		Agree		Strongly agree	
	N	%	N	%	N	%	N	%
	14. Everyone in the group contributed equally to the final work.			10	33.3	15	50.0	5
15. I had a lot of interaction with my classmates via the computers.			8	26.7	16	53.3	6	20.0
16. This course helped improve my computer skills.			2	6.7	14	46.7	14	46.7
17. My English improves as a result of CMC collaboration.			4	13.3	24	80.0	2	6.7
18. My grammar improves as a result of CMC collaboration.			8	26.7	21	70.0	1	3.3
19. My writing improves as a result of CMC collaboration.			3	10.0	25	83.3	2	6.7
20. My vocabulary improves as a result of CMC collaboration.			4	13.3	23	76.7	3	10.0
21. I felt more involved in learning during this course.			4	13.3	22	73.3	4	13.3
22. I enjoy learning English more after this class.			1	3.3	23	76.7	6	20.0
23. I enjoy collaborative learning more after this class.			3	10.0	23	76.7	4	13.3
24. I will recommend this way of learning to my friends.					17	56.7	13	43.3

**Appendix Z: Publications and presentations presenting material from this research****Articles in refereed journals:**

Nguyen, L. V., & White, C. (in press). The nature of 'talk' in synchronous computer-mediated communication in a Vietnamese tertiary EFL context. *International Journal of Computer Assisted Language Learning and Teaching*.

Nguyen, L. V. (2010). Computer mediated collaborative learning within a communicative language teaching approach: A sociocultural perspective. *Asian EFL Journal*, 12(1), 202-233.

Nguyen, L. V. (2009). Thuận lợi, khó khăn và giải pháp trong việc ứng dụng công nghệ vào giảng dạy ngoại ngữ [ICT in language education: Benefits, challenges and solutions]. *The University of Danang Journal of Science and Technology*, 30(1), 128-142.

Nguyen, L. V. (2008). Computer mediated communication and foreign language education: Pedagogical features. *International Journal of Instructional Technology and Distance Learning*, 5(12), 23-44.

**Articles under review:**

Nguyen, L. V. (under review). A study of learners' attitudes towards a technology-enhanced language classroom. *Australasian Journal of Educational Technology*.

Nguyen, L. V. (under review). Wiki-mediated peer review process: Participation and interaction. *Canadian Modern Language Review/La Revue Canadienne des Langues Vivantes*.

**Refereed conference presentations:**

Nguyen, L. V. (2010). *EFL collaborative opportunities in a Wiki environment*. Paper presented at the 27th CALICO Annual Conference on Enhancing Language Learning: Research, Innovation, and Evaluation in CALL, 8-12 June, Amherst, MA.

White, C., Walker, U., & Nguyen, L. V. (2009). *Participation and interaction in synchronous computer-mediated communication*. Paper presented at the 1st Combined ALANZ and ALAA Conference on Participation and Acquisition, 2-4 December, Auckland, New Zealand.

Nguyen, L. V. (2009). *Synchronous computer-mediated communication: A sociocultural analysis*. Paper presented at the Massey University's School of Language Studies Conference, 12 November, Palmerston North, New Zealand.

Nguyen, L. V. (2008). *Authentic online collaborative learning in the EFL classroom environment: A need for a comprehensive study*. Paper presented at the CLESOL Conference on Language and Identity, 5-10 October, Auckland, New Zealand.