



UNIVERSITI PUTRA MALAYSIA

***INTERACTION PATTERNS, KNOWLEDGE SHARING, VIEWS AND
READINESS IN USING WIKI AND SKYPE IN COLLABORATIVE
WRITING
AMONG ESL UNDERGRADUATES IN MALAYSIA***

YOLANDA HIEW LEE LEE

FBMK 2016 29



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By

YOLANDA HIEW LEE LEE

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

January 2016

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DEDICATION

This thesis is dedicated to my daughter, Jade Alexandra Jimayol.

The important thing is to not stop questioning. Curiosity has its own reason for existing.
-Albert Einstein-



Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

INTERACTION PATTERNS, KNOWLEDGE SHARING, VIEWS AND READINESS IN USING WIKI AND SKYPE IN COLLABORATIVE WRITING AMONG ESL UNDERGRADUATES IN MALAYSIA

By

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January 2016

Chair: Associate Professor Tan Bee Hoon, PhD

Faculty: Modern Languages and Communication

This study investigated the use of computer-mediated communication (CMC) tools, Wiki and Skype, for interaction and collaborative writing among ESL undergraduates in a Malaysian context. A substantial number of studies have emphasised the factors that support wikis as interaction tools in language learning, while some have overtly focused on the use of wikis for group assignments. However, the use of Skype in tertiary setting appears less explored in the literature. Thus, the study investigated how these asynchronous (Wiki) and synchronous (Skype) systems facilitate collaborative writing among ESL undergraduates. The theory of constructivism, social presence theory, and writing theories were employed in this study. In order to contribute to knowledge and understanding about students collaborative activities in a constructivist learning environment, Wang's Generic Model that covers the framework of pedagogy, social interaction and technology aspects was used. The objectives of the study were to examine the process using Wiki and Skype for collaborative writing and to evaluate the products as a result of using the CMC tools.

The research design of this study is primarily qualitative. The quantitative responses served as a supplement for enriching the qualitative part of the study; thus, a mixed-method research design is applied. This study examined the efficiency of Wiki and Skype for two different collaborative writing tasks. Twenty-five ESL undergraduates pursuing a degree in English Language at a public university in Malaysia participated in the study. The students formed a group of four to five members to complete two collaborative writing tasks using Wiki and Skype for discussion. The written documents were evaluated using the ESL Composition Profile. Knowledge sharing, usefulness and satisfaction questionnaires were administered following the completion

of tasks, and a focus-group interview was conducted at the end of the semester with the same participants. Text-conversations from Wiki and Skype were observed for interaction patterns using the coding scheme for online interactions. Content analysis and descriptive statistics were used to analyse the data.

The key findings of the study show the differences and similarities between Wiki and Skype in the patterns of interaction, where students informed and gave suggestions. The students had points that are more argumentative in the Wiki discussion forum. Students were satisfied with the group tasks using Wiki and Skype, where Wiki developed writing skills and Skype fostered social interaction. Social presence and team leadership contributed significantly to knowledge sharing in students' collaboration on Wiki and Skype. The study also shows that language proficiency and technology skills determined student readiness to participate in online collaboration on Wiki and Skype. The written products confirm that students had fulfilled the tasks requirement and they had efficiently completed their collaborative writing through both Wiki and Skype. This study suggests that the use of Wiki should be supplemented by Skype to wholly enhance interaction in the collaborative writing process among ESL undergraduates in a Malaysian context.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

**POLA INTERAKSI, PERKONGSIAN ILMU, PANDANGAN DAN KESEDIAAN
DENGAN MENGGUNAKAN WIKI DAN SKYPE DALAM PENULISAN
KERJASAMA ANTARA PELAJAR PRASISWAZAH ESL DI MALAYSIA**

Oleh

YOLANDA HIEW LEE LEE

Januari 2016

Pengerusi: Prof. Madya Tan Bee Hoon, PhD

Fakulti: Bahasa Moden dan Komunikasi

Kajian ini menyiasat penggunaan alat komunikasi komputer-pengantara (CMC), Wiki dan Skype, untuk berinteraksi dan penulisan kerjasama dalam kalangan pelajar prasiswazah ESL dalam konteks Malaysia. Sebilangan besar kajian telah menekankan faktor-faktor yang menyokong Wiki sebagai alat interaksi dalam pembelajaran bahasa manakala ada yang memberi tumpuan kepada penggunaan Wiki untuk menyiapkan tugas kumpulan. Walau bagaimanapun, penggunaan Skype dalam suasana pengajian tinggi nampaknya kurang mendapat sambutan dalam kesusasteraan. Oleh itu, kajian ini menyiasat bagaimana alat interaksi tak segerak (Wiki) dan segerak (Skype) mungkin memudahkan penulisan kerjasama dalam kalangan pelajar ESL. Teori konstruktivisme, teori kehadiran sosial, dan teori-teori penulisan telah digunakan dalam kajian ini. Dalam usaha menyumbang kepada pengetahuan dan kefahaman tentang pelajar aktiviti kerjasama dalam persekitaran pembelajaran konstruktivis, Model Generic yang meliputi aspek-aspek rangka kerja pedagogi, interaksi sosial dan teknologi telah digunakan dalam kajian ini. Objektif kajian ini adalah untuk mengkaji proses penggunaan Wiki dan Skype dan hasil penulisan kerjasama dengan menggunakan CMC.

Reka bentuk penyelidikan kajian ini adalah kualitatif. Jawapan kuantitatif adalah tambahan untuk memperkayakan sebahagian kualitatif kajian. Oleh itu, reka bentuk penyelidikan bercampur kaedah telah digunakan. Kajian ini meneliti kecekapan Wiki dan Skype untuk dua tugas penulisan kerjasama yang berbeza. Dua puluh lima pelajar ESL yang mengikuti kursus Ijazah Bahasa Inggeris di sebuah universiti awam di Malaysia telah mengambil bahagian dalam kajian ini. Pelajar-pelajar membentuk satu kumpulan empat hingga lima ahli untuk melengkapkan dua tugas penulisan dengan menggunakan Wiki dan Skype bagi interaksi dan kerjasama. Hasil penulisan telah dinilai menggunakan Profil Komposisi ESL. Perkongsian ilmu, kegunaan dan kepuasan

soal selidik telah ditadbir selepas selesainya tugas dan temu bual kumpulan telah dijalankan pada akhir semester dengan pelajar yang sama. Teks perbualan dari Wiki dan Skype telah diperhatikan untuk pola interaksi dengan menggunakan skim pengkodan untuk interaksi. Analisis kandungan dan statistik deskriptif telah digunakan untuk menganalisis data.

Hasil kajian menunjukkan perbezaan dan persamaan antara Wiki dan Skype dari segi pola interaksi pelajar. Pelajar memberitahu, memberi cadangan, dan juga bertengkar dalam forum perbincangan Wiki, manakala mesej segera dengan Skype terdiri daripada interaksi sosial yang membayangkan hubungan rapat. Pelajar berpuas hati dengan Wiki dan Skype iaitu Wiki membangunkan kemahiran menulis manakala Skype meningkatkan interaksi sosial. Kajian ini dikemukakan bahawa kehadiran sosial dan kepimpinan pasukan telah banyak menyumbang kepada perkongsian pengetahuan dalam kerjasama pelajar. Penguasaan bahasa dan kemahiran teknologi kekal penting dalam menentukan kesediaan pelajar untuk mengambil bahagian apabila bekerjasama dengan menggunakan Wiki dan Skype. Hasil penulisan mengesahkan bahawa pelajar telah memenuhi keperluan tugas penulisan dan cekap untuk menyelesaikan penulisan daripada usaha kerjasama mereka melalui Wiki dan Skype. Kajian ini menunjukkan bahawa penggunaan Wiki perlu disertakan dengan Skype untuk meningkatkan penuh interaksi dalam proses penulisan kerjasama antara pelajar ESL dalam konteks Malaysia.

ACKNOWLEDGEMENTS

Thank you, Lord, for blessing, protection, and guidance throughout my journey of life!

I would like to express my genuine gratitude to the individuals who have contributed and assisted me in this PhD study over the years. Their assistance was invaluable.

Firstly, I wish to extend my deepest gratitude to my main supervisor Associate Professor Dr. Tan Bee Hoon for the continuous support of my research and publications, for her infinite understanding, patience, motivation and immense knowledge. She had inspired me to continue the struggles throughout the journey of writing the thesis. Thank you, Dr. Tan! I could not have made it without your constant encouragement, endeavour and invaluable supervision.

My heartfelt gratitude also goes to my co-supervisors: Associate Professor Dr. Yap Ngee Thai, and Dr. Zalina Binti Mohd Kasim for their insightful comments and constructive suggestions for the improvement of the thesis, and also for the tough and thought-provoking questions which incentivised me to widen my research in various perspectives.

My appreciation and sincere thanks to: Professor Dr. Ong Puay Liu (UKM) who commented on every chapter of my thesis despite her tight schedule; my former UTAR colleagues – Associate Professor Dr. Lim Yet Mee who gave me the most constructive criticisms on the framework of my study; Associate Professor Dr. Teh Chee Seng who supported my proposal to start the journey of my study; and Assistant Professor Dr. Tan Luen Peng for his helpful comments in my research and being a good listener when I was distressed.

I am also indebted to: Dr. Mahmoud Danaee for assisting my quantitative data analysis; Soon Lii Chyi for advice and proofreading the abstract in Malay version; Anantha Kannan for supporting my application to MyBrain15 scholarship; Wong Kin Tat for being compassionate when I needed help at the campus; Chen Yoke Leen for spiritual and moral support; staff at FBMK and all the students who had willingly participated in the study. Thank you all for your selflessness!

Last but not least, a big thank you to my father, mother and brother, Patrick, for their love and courage; your constant support has made it possible for me to walk through and complete this long journey of study. I am grateful to my independent 12-year-old daughter, who has been so patient and thoughtful during my critical time writing the chapters that I had spent most of my time on the laptop than spending time with her. I missed part of her growing up years. Thank you, Jade, this thesis is especially dedicated to you.

APPROVAL

I certify that a Thesis Examination Committee has met on 22 January 2016 to conduct the final examination of Yolanda Hiew Lee Lee on her thesis entitled “Interaction Patterns, Knowledge Sharing, Views and Readiness in using Wiki and Skype in Collaborative Writing among ESL Undergraduates in Malaysia” in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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LIST OF ABBREVIATIONS

ALN	Asynchronous Learning Network
CA	Content Analysis
CLE	Constructivist Learning Environment
CMC	Computer-Mediated Communication
CMDA	Computer-Mediated Discourse Analysis
CMS	Content Management Systems
CSCL	Computer-Supported Collaborative Learning
DA	Discourse Analysis
ESL	English as a Second Language
ESP	English for Specific Purposes
HEIs	Higher Education Institutions
ICT	Information and Communication Technology
LMS	Learning Management System
MOHE	Ministry of Higher Education
RQ	Research Question
SPSS	Statistical Package for the Social Sciences
VLE	Virtual Learning Environment

CHAPTER 1

INTRODUCTION

This study aims to understand whether undergraduates' interactions using online tools enhance or inhibit the process in completion of their collaborative writing tasks. This chapter presents the background of the study, followed by the statement of the problem. Next, the purposes of study and research questions are specified. The chapter also discusses the theoretical and conceptual frameworks, and the significance of the study. The definition of key terms used in this study is provided at the end of this chapter.

1.1 Background of the Study

The Internet has expedited the growth of education economically and socially which proves to be crucial in the development of knowledge (McGreal & Elliott, 2008). The move from traditional face-to-face classroom learning to the use of Information and Communication Technology (ICT) has been implemented by universities in Malaysia and abroad vigorously with computer-mediated communication (CMC) systems (Embi, 2011; Goi & Ng, 2009). These technologies promote interaction among tertiary level students in collaboration where they can have discussions with peers to complete written assignments by means of posting messages (asynchronous) and instant messaging (synchronous). Despite the environments where learning occurs, the most important aspects to the process of learning are "the interactions among students themselves, the interactions between faculty and students, and the collaboration in learning that results from these interactions" (Palloff & Pratt, 1999, p.5). In order to work or learn together, students collaborate and share knowledge in completing assignments through face-to-face and/or electronic communications. Face-to-face interaction is commonly practised in university classrooms where students have to be acquainted with how, what and with whom they need to work.

In addition, studying at the university involves collaborative learning and knowledge sharing between students which are important teamwork practices. Students have to share knowledge and construct knowledge through critical thinking, explaining, clarifying, and reflecting from various viewpoints. Thus, it is recognised that collaboration has the advantages in conventional classroom conditions (Lea, Rogers, & Postmes, 2002). However, the time allocated for collaboration in the classroom at the university is limited and it is required that students collaborate outside class, particularly when attempting a group task. Hence, a number of universities in Malaysia and other countries are actively implementing online learning, through Learning Management System (LMS) or Virtual Learning Environment (VLE) at undergraduate and postgraduate level (Embi, 2011; Goi & Ng, 2009; Kirkwood, 2009; Hussain, 2004).

From this perspective, online technology such as Web-based learning or e-Learning has been going on at universities for more than three decades in developed countries (e.g. Chickering & Gamson, 1987; Gomez, et al., 2010; Hiltz, 1997; Hiltz & Turoff, 1978; Johnson, Aragon, Shaik, & Palma-Rivas, 2000; Murphy, Walker, & Webb, 2013). As

tertiary education in Malaysia is currently emphasising on e-Learning, its visions of transformation are part of the government initiatives. A study was carried out to discover the position of e-Learning and to put emphasis on the leanings and challenges of implementing e-Learning in Malaysian Higher Education Institutions (HEIs) in terms of policy, learning management systems (LMS), e-Content development, and future e-Learning planning (Embi, 2011). According to Embi, the study was conducted because there was no comprehensive study on the implementation of e-Learning in Malaysian HEIs though e-Learning has been utilised in tertiary education since year 2000. A total of 26 e-Learning administrators from various universities, 1,635 lecturers, and 6,301 students from 30 HEIs took part in the study as respondents. The findings show that e-Learning policies existed in their respective institutions, and the academic staff were aware and knew about such policy (Embi, 2011). Nearly 90% of HEIs with e-Learning policies had implemented their plans, and out of this figure, 70% make the use of e-Learning necessary among their instructors and students. However, supports from top management, faculty, school, department, and students towards the e-Learning policy in Malaysian HEIs were higher in percentage (above 76%) than the supports from the lecturers (25-50%). Such results imply that it is necessary for the HEIs to take specific measures to ensure the commitment and involvement of the lecturers or instructors, which are at least as high as the commitment given by the students.

With the advent of CMC, students are no longer isolated learners at the university (Palloff & Pratt, 2005). Their communication and learning through electronic resources and social networking are becoming more dominant in educational contexts (Mason & Rennie, 2008). Indeed, many students have experienced social networking activities before entering the tertiary classroom (Mason & Rennie, 2008), and these students often grow up with technology in a world that requires them to be vastly connected. Thus, these new breeds of university students are called the *Net Generation* or *Millennial* (Howe & Strauss, 2000). They usually opt to learn through active participation, work as a team with peers, and search information online (Oblinger & Oblinger, 2005). Hence, online collaboration, where learning, sharing and building knowledge are through active participation, interaction and collaboration, possibly suits the net generation in this 21st century. These students may adopt online interaction as an alternative or supplement to traditional tertiary classroom learning (Harasim, 2012; Tu, 2004). They can be the experts in manipulating the functions of the Internet for entertainment, exploring information and social communication. Their spoken and written communications are mainly assisted by CMC available at hand that can be used anywhere and anytime.

To date, studies reveal that online technology ought to move towards a form of student-centred learning in which social collaboration among students is encouraged (Garrison & Anderson, 2003; Harasim, 2006; Mason & Rennie, 2008). While it is being addressed in this manner, the CMC technologies come to light with asynchronous and synchronous systems that support students' interaction in online collaboration. These systems contribute to an active learning process (rather than a passive process of knowledge acquisition) of which knowledge is cultivated through interactions and collaborations (Connell, 2006; Palloff & Pratt, 2005; Wenger, White, & Smith, 2009). As a result, students who lack the language and communication skills or incompetent in CMC technologies may find it difficult in participating in online interaction and collaboration in their course (Dekker, Pechenizkiy, & Vleeshouwers, 2009). Apart

from financial hardship, poor academic performance was one of the causes that students quit their course (Bennett, 2003; Medway & Penney, 1994; Palmer, 2001). Moreover, the unsatisfactory academic results seem to be associated with student having difficulties in English language and writing skills.

The motivation in conducting this study was due to the lacking in research studies on how and what students discuss online by means of asynchronous and synchronous interactions in English medium, and which systems are more useful and satisfied for completing collaborative writing tasks. The intention to identify the patterns in the process of interaction, knowledge sharing, and the type of CMC tools which assist students' interaction becomes central to the study in completing online collaborative writing. Thus, understanding the students' perceived usefulness of the CMC tools and their satisfaction in using these tools for their collaborative writing tasks is essential. It is hoped that from the findings of this study, academics can obtain some insights of how online interaction takes place with the use of CMC tools, and able to offer some important guidelines to the students to support their study goals. Moreover, students' knowledge on how to use the online tools for interaction to complete their writing tasks in the collaborative environment can accelerate participation in the online discussions. They also need to know how to interact online with their group members, and certainly the amount to which their interaction contributes to their learning and understanding will differ according to their competencies. Despite that, it is inappropriate to simply provide students with online access to learning materials or posting messages in the discussion forum without proper guidance (Garrison & Anderson, 2003; Harasim, 2006; Mason & Rennie, 2008). The consequences of lacking such guidance in online interaction would generate lurkers who make no contribution to the task and discourage student participation in the group discussion. Furthermore, academic writing in tertiary education is deemed compulsory and students who lack this skill encounter more difficulties in accomplishing their written assignments (Silva, 2001; Tan, 2006).

1.2 Statement of the Problem

The research problem of the current study is framed in three aspects: pedagogy, social and technology. In tertiary education, the importance of writing, particularly academic writing in English can be a challenge for many ESL undergraduates as it is cognitively demanding, and invokes meaningful and powerful kind of learning (Berman & Cheng, 2010; Elton, 2010; Hood, 2004). It is commonly known that ESL students encounter problems in developing their writing proficiency at the university (Bacha, 2002). The setbacks can be more accentuated in mandatory English courses among Malaysian students who mostly learn English as a second language (L2). Indeed, Malaysian undergraduates usually find it difficult to write a piece of academic essay coherently in English in their assignments. In this case, students have to improve their writing skills in English medium so that they are able to cope with their university coursework. All undergraduates need to write according to the academic standards, where essays are articulately written with correct syntax, grammar, and vocabulary. These students are expected to show critical understanding of the topic of study and consistency of logical argument in their writing. They are also required to support their arguments by citing and referencing precisely from the literature. Many ESL students in Malaysia enter into tertiary education unprepared for academic writing in English,

and some find the task of individual writing in academic style to be difficult, frustrating and confusing (Tan, 2011). Thus, it is deemed essential for this study to investigate the effectiveness of different approaches to support undergraduates' academic writing skills, particularly for ESL students in a Malaysian context.

In relation to effective approaches to writing, universities in western countries are incorporating collaborative learning and writing vigorously. Malaysian students, however, are generally weak in communication when it comes to group work. These students are incapable of collaborating with others in a team due to their low proficiency of English language and collaborative skills, causing inability of sharing knowledge or producing effective arguments in a group discussion (Maesin, Mansor, Shafie, & Nayan, 2009). This situation leads to another problem where Malaysian graduates are unable to work effectively as part of a team and communicate properly in English, and this problem has been constantly emphasised in the national newspapers (e.g. Maesin et al., 2009). It is probably that Malaysian students are not used to group interaction from a young age. Therefore, they do not have the necessary social and collaborative skills for group work, and lack of confidence in using English openly although they have gone through years of learning English (Fauzi, 2005). Studies have found that the use of online technology such as CMC increases the opportunities for students to collaborate (Cole, 2009; Garrison, 2011; Gomez, Wu, & Passerini, 2010). However, the integration of new technology into traditional learning may incur additional problems to some ESL students who lack necessary skills to interact and collaborate via CMC systems in English medium. Although collaborative learning has been practiced in traditional classrooms and found to be useful in the west (Sotillo, 2002), rarely do the interactions among ESL undergraduates in the process of producing collaborative writing using CMC are being explored in Malaysian public universities. Therefore, there is a need to conduct this study and observe how online technology may assist undergraduates in their interaction and collaboration for writing in Malaysian public universities.

In relation to the use of CMC, researchers have used email, wikis, and the LMS to facilitate asynchronous interaction (e.g. Hussain, 2004; Ruskin, 2001; Zorko, 2009) but real-time discussion in group work has not been commonly utilised. The existing literatures specify that the absence of social interaction may hinder online collaboration (Curtis & Lawson, 2001; Hrastinski, 2008b; Martin, Parker, & Deale, 2012). For synchronous interaction, social software such as Skype remains unexplored at tertiary level in CMC studies, though it is popularly employed in private and business organisations. Therefore, to what extent ESL students are familiar with the social network and software applications; their views towards online tools for collaboration; and whether studies on CMC correspond to the current situation in Malaysian universities is not known. Thus, this study contributes to filling in the gap by exploring Skype among undergraduates' social interaction and collaboration to complete academic tasks. In spite of the previous studies on CMC that compared online and face-to-face interactions, there may not be any study to compare the asynchronous and synchronous modes of interaction, collaboration and completion of writing tasks through Wiki and Skype. Moreover, a number of online writing tools have been widely used in higher education for collaborative writing in more developed countries, but they probably have not been investigated for its usefulness in Malaysian public universities. The integration of technology may be beneficial to some students, but it may cause

challenges to others, such as their readiness for online learning (Smith, 2005). Indeed, research in the area of online learning is very limited in Malaysia (Pramela & Wong, 2009). Due to the importance of supporting the ESL undergraduates' academic writing as a required skill at the universities in Malaysia, collaborative writing by other means, such as the use of CMC tools, demands further studies. Therefore, the need to carry out the present study is not only timely but imperative.

1.3 Purpose and Research Questions of the Study

The purpose of this study was to observe the ESL undergraduates' online interaction on using Wiki and Skype for completing their collaborative writing tasks. This study has the prospective to understand the process of students' interaction through their text-conversations on two different systems, asynchronous and synchronous. This understanding can be extended not by focusing on technology but by sustaining the attention on students who are involved (White, 2007). Thus, the knowledge and awareness gain from this study can be used to update our practices as instructors and researchers. Along these lines, the interaction patterns among the undergraduates using Wiki and Skype were sought. In addition, factors that may contribute to knowledge sharing and participation for group writing tasks ought to be identified. Besides, the study intends to investigate the students' views of whether Wiki and Skype are useful and satisfactory for interaction and collaboration. With this knowledge and understanding, instructors can obtain an insight to support ESL undergraduates in their online interaction and collaborative writing. It is important that studies are conducted to determine how the online tools available can be used to supplement and/or improve existing strategies in completing writing tasks collaboratively. Hence, the written products could be evaluated.

In order to achieve this goal, the following research questions were formulated:

- RQ1. What are the interaction patterns observed in ESL undergraduates' text-conversations on Wiki and Skype?
- RQ2. What are the factors that contribute the most to knowledge sharing among ESL undergraduates' interaction on Wiki and Skype?
- RQ3. How do the ESL undergraduates view the use of Wiki and Skype in completing their collaborative writing tasks?
- RQ4. To what extent do Wiki and Skype influence the ESL undergraduates' readiness to participate in the online interaction?
- RQ5. How do the ESL undergraduates approach collaborative writing through Wiki and Skype interaction in completing the e-textbook and review paper based on qualitative analysis of the written product?

1.4 Theoretical Framework of the Study

Collaborative environments using technology become visible where students participate in activities, exchange information and ideas, solve problems, and come to an agreement via online systems (De Wever, Keer, Schellens, & Valcke, 2010; Oztok, Zingaro, Brett, & Hewitt, 2012). According to the cognitive constructivist theory, students are vibrant in information processing rather than submissive contributors in the learning process. Indeed, learning should be an active process where people understand what they learn, rather than merely a transfer of knowledge from the teacher. Furthermore, social constructivist points of view have given more attention into how the social aspects of learning are restructured and developed by the use of technological tools in supporting instructional processes (Elola & Oskoz, 2010; Koschmann, 1996; Stacey, 2002a). This study employs the Generic Model developed by Wang (2008a) and focuses on the social constructivist theory to examine students' asynchronous and synchronous online interactions in completing collaborative writing tasks. Besides the social constructivist theory, this study also applies the theory of social presence and writing theories. The next section elaborates further on these theories. Figure 1.1 presents the theoretical framework of the study.

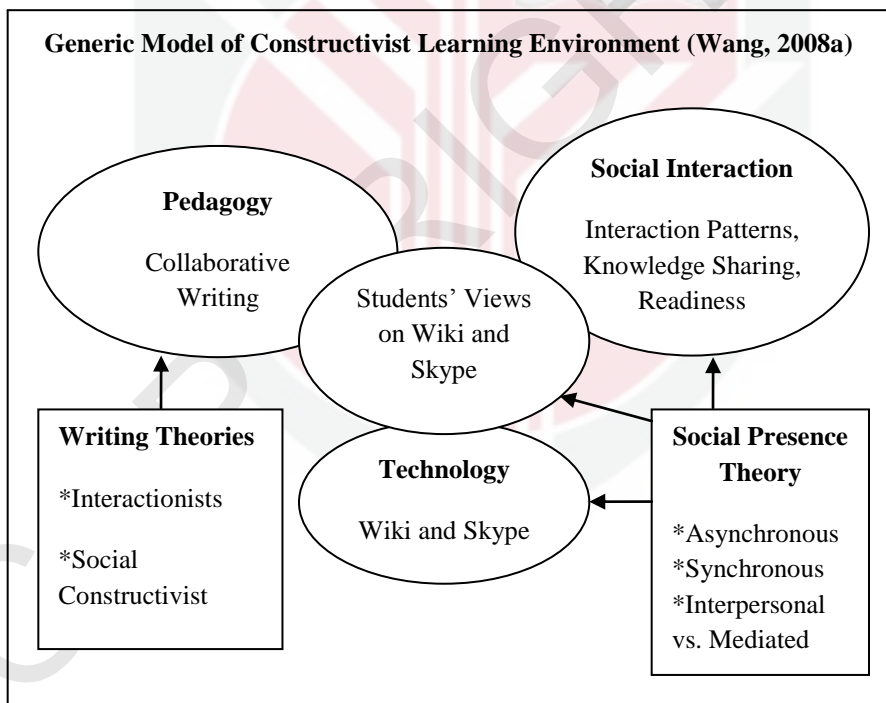


Figure 1.1 Theoretical Framework of the Study

1.4.1 Constructivism and Social Constructivist Theory

In tertiary education, there is a change from traditional classroom learning to social constructivist environments where students have the opportunity to learn or work collaboratively in solving problems and to settle contentious matters (Ruey, 2010; Tsai, 2010). Collaborative learning has been extensively explored and supported by academic literature. The pedagogy of collaborative learning moves from a one direction knowledge transmission to constructivist approaches where learning is considered as a social practice (Hiltz, Coppola, Rotter, & Turoff, 2000). When students work on a collaborative writing task, they work jointly as a group to achieve a shared objective in producing a piece of writing. Therefore, the success of the group depends on the effort, responsibility and contribution of the team members. Nevertheless, assigning a team of 3 or 4 students work together is not necessarily collaborative.

Thus, in the theory of constructivism, two important aspects have been considered: cognitive constructivism and social constructivism (Liaw, 2004). One important aspect within cognitive development of learners is the interactions that occur among students (Doise & Mugny, 1984). In Piaget's theory, the social-cognitive conflict is seen from different angles. Student opinions in a collaborative environment may create cognitive discrepancy, which subsequently promotes cognitive enhancement (Piaget, 1965). In view of this, the learning experience can be improved as various aspects are considered within the disagreement, and thus the process of students' interaction and cooperation lead to the construction of knowledge (Vygotsky, 1978). However, conflict occurred as team members may have different ideas, understandings, and solutions for problem when they collaborate in an online environment. Kahn (2008) emphasised that conflict is a key element which is not easy to prevent in student teamwork. Moreover, conflict among students in group work may happen in different situations, such as selecting the type of technology for communication and how and when group members need to discuss their task. These discrepancies create more explanations from the compromising of various opinions (Bossche, Seger, & Kirschner, 2006).

Furthermore, Vygotsky (1978) claimed that social interaction is the key element of the development of cognition; hence social constructivism is vastly applied to this study. Social constructivism promotes the social process of group interaction rather than individual context in an active knowledge construction. This theory concentrates on the relationship between the students' cognitive process and their social activities in completing collaborative writing tasks. The core of social constructivism is the social context of human evolution and learning in contrast to the individual development context as suggested in cognitive constructivism (Harasim, 2012).

The primary concept of social constructivism as proposed by Vygotsky (1978) is the Zone of Proximal Development (ZPD). According to ZPD, learning occurs when learners solve problems outside their existing developmental level but within their level of fundamental development under supervision or in collaboration with competent peers. In ZPD, a learner's learning is examined in terms of what a learner can do without assistance and what he or she can do with assistance. Consequently, the term 'scaffolding' is known as a metaphor to reflect supported learning, where the teacher or peer supports the learner in constructing meaning. In the classroom environment, a

scaffold is a set of activities proposed by the teacher to support the student's progress in achieving difficult tasks such as writing an essay collaboratively.

In a constructivist learning environment, the teacher's role shift from being the *sage on the stage* to being the learning facilitator. Moreover, the social aspect of constructivist theory emphasises that learning does not process only internally, but it happens in the form of interaction among learners (Huang, 2002; Newby, Stepich, Lehman, & Russell, 2000). In the course of collaboration, students construct their own understanding of knowledge by combining new information into their own experience (Weller, 2002; Wilson, Teslow, & Osman-Jouchoux, 1995). The constructivist technologies are often related to learning environments such as Microworlds, Scaffolded Intentional Learning Environment, Learning Network and Learning Management Systems (LMS) such as BlackBoard, WebCT or Moodle with various characteristics (Harasim, 2012). The characteristics include representing the natural complexity of the real world; providing environments such as case-based learning instead of a predetermined sequence of instruction; fostering reflection on learning experiences; and supporting collaborative construction of knowledge through social negotiation and not through competition among learners for recognition (Harasim, 2012). In addition, online collaboration based on a constructivist approach should be an active process, where learners should construct their own knowledge and make use of the collaborative or cooperative learning. Learners should be given control of the learning process and there should be an opportunity for reflection. On top of that, learning should be meaningful and interactive in order to enhance knowledge based on the constructivist approaches (Moore, 2002).

This study employs the social constructivist theory because the theory implies that learning is extra efficient when students are keen to share their viewpoints with each other in collaborative activities. In other words, knowledge sharing and knowledge construction can be facilitated by active involvement, interaction, and exchange of ideas through collaboration (Jonassen, Davison, Collins, Campbell, & Bannan Haag, 1995). Moreover, communicating and writing in English are important skills at tertiary level, particularly for ESL undergraduates. These students must learn academic writing and produce a written work collaboratively, either on paper or online platform. Such collaboration where students participate and communicate with each other leads to successful teamwork. Hence, the social constructivist theory fits well in this study as it addresses the requirement for interaction among students to complete their collaborative writing tasks, where students develop their skills through negotiation and problem-solving in collaboration with more competent peers.

Classroom collaboration has been recognised to be beneficial to students based on social constructivist theory, but whether such benefit can genuinely be transferred to an online environment and improve team effectiveness is still vague. In a study, Tallent-Runnels, Tomoas, Lan, Cooper, Ahern, Shaw, & Liu (2006) found that online interaction or discussion is not comparable to traditional face-to-face interaction. Furthermore, assigning students in a group project does not mean that they will work collaboratively (So & Brush, 2008), let alone work online. This is because learners differ in terms of their capabilities and readiness to work together in the online environment though they share a common goal in collaborative tasks.

There are numerous effects on teaching and learning from the theories of cognitive, behavioural, and social psychology in the past decades. Cognitive models imply that the learner is the key player in the process of learning and such individual has powerful mind to process information (Bruning, 1994; Winn & Snyder, 1996). However, the constructivist perspective on learning takes on a more learner-centered direction and instructors may facilitate this process by providing interactive and collaborative situations in which students are able to construct new knowledge and understanding of the learning materials. By interacting with more competent peers, students can gain new ideas that they may not be able to attain on their own and hence constructivist encourages group learning activities or collaboration.

Indeed, learning does not only involve the transmission of knowledge but it also involves a dynamic process in making sense of the human race. Thus, this theoretical foundation supports a model suggested by Wang (2008a) which relates to students' collaborative activities in a constructivist learning environment (CLE). Wang described the CLE as technology-based where students interact and learn from their experiences using online tools. The author proposed a framework that covers the pedagogy, social interaction and technology elements called the *Generic Model of Constructivist Learning Environment*.

1.4.1.1 Generic Model of Constructivist Learning Environment

A constructivist approach to application of ICT in language learning still prevails in academic papers and such an approach generally involves three aspects: *pedagogical*, *social* and *technological* (Valtonen, Dillon, Hacklin, & Väisänen, 2010). The relationship of the three aspects varies according to the significance and focus of the contribution in the process of collaborative learning (Hubackova, 2009). Wang (2008a) emphasised that the integration of technology into tertiary educational level depends exclusively on the design of a CLE, which has the advantage of exploration among students working as a group in CLE. Figure 1.2 presents the key components of the Generic Model.

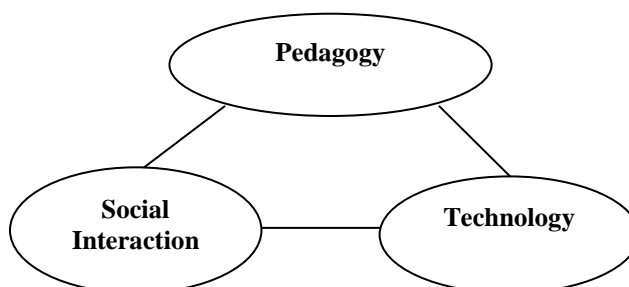


Figure 1.2 Key Components of the Generic Model (Wang, 2008a)

1.4.1.2 Pedagogical Aspect

The pedagogical aspect reflects on educational purposes of a learning environment which can be conducted in face-to-face and online settings. Thus, online collaboration involves learning resources and activities that support active learning (Chen, 2003), which enables students to construct knowledge and attain their learning goals. Based on the constructivist theory, learners learn best when they construct knowledge through interactions, experiences and new information (Wang, 2009a), and work as a team. With online collaboration, students can perform collaborative writing through interaction among group members using CMC tools.

1.4.1.3 Social Aspect

Students may turn to their peers for assistance when they come across problems in various area throughout their study (Wilson & Lowry, 2000), thus the social dimension of learning has become an integral part of the existing online environment (Moallem, 2003). Some students feel less intimidated to interact online in a small group compared to face-to-face for collaborative tasks as they can work collaboratively through planning, contributing, sharing, seeking help, negotiating, and motivating each other. Constant social interaction may also encourage students' readiness to participate in online collaboration.

1.4.1.4 Technological Aspect

An online collaborative environment involves the use of technology such as CMC in the modes of asynchronous and synchronous interaction (Wang, 2009a). Constructivist learning occurs in traditional classroom settings; however, the fast growing phase of ICT has offered a feasible platform that promotes constructivist learning with various useful tools (e.g. Wiki and Skype) to connect to the community (Aldridge, Fraser, Taylor, & Chen, 2000). Besides, distance learning has been taking place using various technologies for at least three generations of pedagogy (Anderson & Dron, 2012), but no particular generation has ever presented the important answers and all have extended or built on the basis offered by its antecedents rather than replacing the previous model (Ireland, 2007).

1.4.2 Social Presence Theory

Social presence theory predicts the effect of medium choice in the communication of information (Daft & Lengel, 1986). Thus, the underlying principle in this theory is that a proper match between the characteristics of a medium, such as high in social presence, and the individual's communication activities, like getting to know someone or decision making, will lead to more effective and satisfying outcome (Rice, 1993).

Social presence has two dimensions that relates to intimacy and immediacy, which are described by interpersonal versus mediated, and asynchronous versus synchronous (Rice, 1993). Moreover, social presence theory foresees that different media create different levels of perceived intimacy and immediacy by users. Users who participate in communication can evaluate how much they feel that the intimacy and immediacy

are present in an actual setting. In addition, social presence is commonly believed to have an escalating effect on media users, such as increasing enjoyment, involvement, influence, task performance, memory/socio-emotion, and para-social interaction (Lombard & Ditton, 1997).

Interpersonal and mediated communication channels complement and may substitute for each other. Studies have indicated that people select between interpersonal and mediated channels to accomplish interactive and informational needs, depending on accessibility and individual perceptions of a medium. Perceptions of social presence may affect CMC activities and outcomes. For instance, Perse, Burton, Kovner, Lears and Sen (1992) discovered that college students who rated computers as more socially present, tended to use them more often and to find them more useful in learning. Hence, social presence seems to be related to convenience, and interpersonal uses as opposed to informational seeking uses. It appears that people who were more mobile, financially secure, satisfied with life, and who felt valued in their interpersonal encounters preferred the more instrumental Internet uses, such as information seeking. Those who were less satisfied and who felt less valued in their face-to-face communication used the Internet as an alternative to interpersonal communication (Papacharissi & Rubin, 2000). However, the social presence ranking depends on the interactive ability of the medium and the task at hand and is based upon the subjective evaluation of the users. This study applies social presence theory to determine students' perceptions using CMC and development of group interaction from initial exploration to substantive teamwork.

1.4.3 Writing Theories

Writing is important in students' academic since nearly all essays, reports, and examinations are based on it (Bacha, 2002). In the process and product writing approaches, Bacha (2002) asserts four main theories which were significant in second language (L2) writing. First, the expressive school of thought (e.g. Moffet, 1968) is a model for expressionists where students learn through free-writing, brainstorming and discovering their own ideas (Kroll, 1990). Moffet's (1968) model emphasised on the author, audience and various types of texts and was mostly prominent in the American elementary and secondary schools.

Second, the cognitive school of thought (e.g. Britton, 1975; Kinneavy, 1980) refers to the cognitivist model (Flower & Hayes, 1981) which focused more on the rhetorical means of communication as end results and demonstrated the connection between syntax, semantics and pragmatics. In view of this, more weight has been put on both the process and the product in writing and this approach was more prominent at the secondary and tertiary levels of writing.

Third, the interactionists (e.g. Swales, 1990) focused on the schemata in the reader's mind to make sense of the world; hence writing was focused more on certain audience. Fourth, the social constructivists (e.g. Halliday & Martin, 1993) focused on community discourse where the writer must consider the rules and requirements of the tasks, thus a writing model was essential. For instance, in an academic setting, the writer's targeted audience would be the faculty members who examine essays, research papers and

reports that were written based on standard criteria within the context of the scholarly community.

In view of the four main theories, Bacha (2002) proposed four instructional methods which have been prominent in EFL writing: controlled, rhetorical, process, and English for Specific Purposes (ESP) emphasising on English for Academic Purposes (EAP). Controlled writing focused on pattern and grammar (Fries, 1949, cited in Kroll, 1990). The rhetorical method focused on models of writing using various rhetorical modes of argumentation, comparison-contrast, cause-effect, narration, and so on, considering the linguistic and cultural background of the writer. However, some researchers disputed the rhetorical method. They support the process type of writing where students undergo preliminary writing (e.g. brainstorming), drafting (e.g. revising) and post-writing (e.g. editing) before finalising the writing product (Kroll, 1990). The rise in the process method in the last two decades has been queried (e.g. Robinson, 1988), particularly by the ESP approach (Halliday & Martin, 1993; Swales, 1990) where the advocates see the requirement to focus on typical writing tasks in a diverse community.

Hence, the ongoing research in academic writing at most Malaysian public universities has implied a demand for more collaborative writing tasks in relation to research and report writing. Despite the disagreement on what level the English faculty ought to teach the content-based writing of the disciplines (Braine, 1988; Horowitz, 1986; Spack, 1988), the roles of skillful writing that encourage critical thinking and educational achievement should not be taken too lightly (Jordan, 1997; Reid, 1993; Robinson, 1988; Vygotsky, 1962).

1.5 Conceptual Framework of the Study

The conceptual framework of this study was developed through the topic of asynchronous and synchronous interaction using CMC tools for collaborative task. A review of the literature was conducted to gain some knowledge and understand the historical background about accessing the Internet, up to the current technology such as the use of social media for communication. The first variable identified was the availability of two different modes of interaction, asynchronous and synchronous, focusing on interaction patterns in group work. Subsequent variables emerged, such as the factors that affect online interaction and collaboration among ESL undergraduates such as the views relating to the usefulness and satisfaction of using the CMC tools. Moreover, online interaction for collaborative task involves students' participation in the discussion group, and knowing about their readiness to joining the group interaction is important. Also, the students' language proficiency and ICT skills may impact their contribution towards the tasks at hand. Indeed, students' contribution to the task is related to knowledge sharing among the group members, thus a review on what factors affect knowledge sharing was conducted. The output that results from the interaction and collaboration process is the completion of the writing products which need to be evaluated. This study attempts to answer the questions that other studies have not explained yet, particularly composing the various factors and it is crucial that the current research addresses the knowledge gap.

Based on the problem statement that identified the research gaps and needs (see p.3), this study aims to investigate students' online interaction in completing two collaborative writing tasks based on the social constructivist theory, social presence theory, and writing theories. In addition, the Generic Model of CLE (Wang, 2009a) that consists of pedagogical, social interaction and technological aspects was applied. This study investigates both content (what) and process (how) of ESL undergraduates online interaction. The process of online interaction, such as postings in the discussion forum and real-time chat, takes place for the purpose of collaborative writing. The content refers to two components: 1) the text-conversations on Wiki and Skype were archived, retrieved and observed for the interaction patterns and analyse using the coding scheme adapted from Curtis and Lawson (2001); 2) the writing products were evaluated based on a popular rubric called the ESL Composition Profile adopted from Jacob et al., (1981). Figure 1.3 shows the conceptual framework of the study.

The coded behaviours in the coding scheme for online interaction (Curtis & Lawson, 2001) were used to analyse interaction patterns and grouped under the categories of Planning, Contribution, Seeking Input, Reflection/Monitoring, and Social Interaction. To find out how students contribute in their collaborative interaction, it was necessary to look into their tendency of sharing knowledge among group members on providing information and helping each other to solve problems for the tasks (Cummings, 2004). Nevertheless, there are various factors that may affect student willingness in sharing knowledge and this study reviewed and examined the social affective and cognitive factors: social presence (Tu, 2002); mutual trust (Jarvenpaa & Leidner, 1999); team conflict (Jehn, 1999); mutual influence (Lipponen et al., 2003); team cohesion (Chang & Bordia, 2001); team leadership (Parker, 1998). Thus, the students' responses in the Questionnaire for Knowledge Sharing in Online Collaboration were analysed to determine the factors that contribute to knowledge sharing.

The students' views on usefulness of Wiki and Skype for interaction and satisfaction using Wiki and Skype for collaborative tasks were examined through three aspects: pedagogical, social and technological. Besides, the influence on students' readiness to participate in Wiki and Skype interaction was investigated through focus-group interviews. This study looks into how students interact in different online systems for their collaborative writing tasks. Wiki is used for interaction and as a platform to write texts while Skype only used for interaction, thus the written task was conducted on Microsoft Word document. Each group was required to discuss and write an e-textbook collaboratively on Wiki, and through Skype discussion to produce a review paper using Microsoft Word.

This study compares two different CMC systems, that is Wiki and Skype that were used to complete the group tasks. The study does not directly compare the tasks. Indeed, comparison between the performances of the written products resulting from the collaboration may be difficult due to the different nature of the tasks. Therefore, the student's grade was not the focus of the study. However, comparison between the interaction patterns in Wiki and Skype was possible based on the asynchronous and synchronous systems in order to understand what and how students discussed online using these modes, and also which system enhances student interaction. Thus, this study compared the interaction patterns, usefulness, and level of satisfaction of Wiki and Skype for collaborative writing tasks rather than the performance. The written

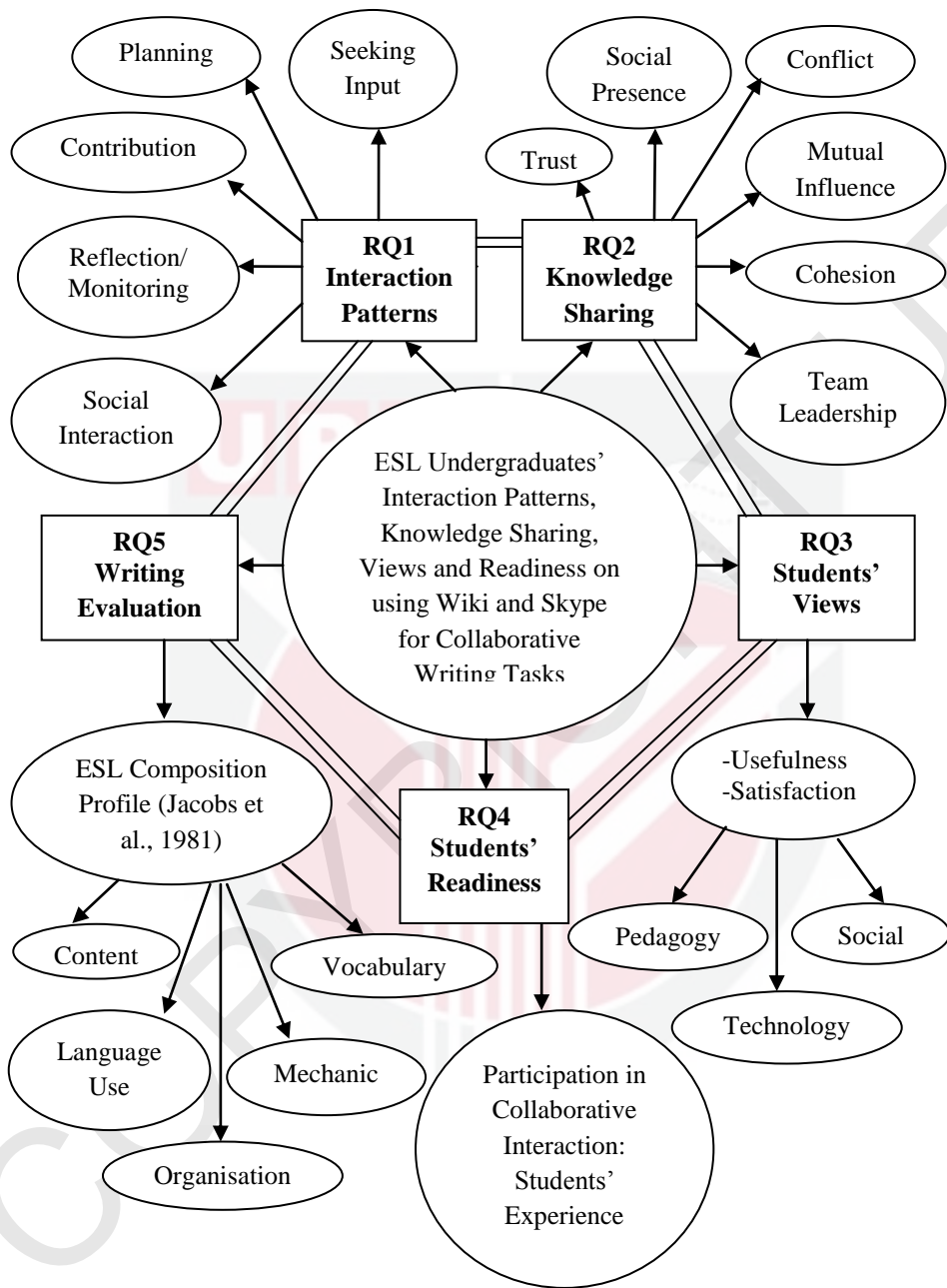


Figure 1.3 Conceptual Framework of the Study

products of each group were analysed based on the criteria adopted from Jacobs et al. (1981) ESL Composition Profile as a rubric for the e-textbook and review paper (see Appendix H). The e-textbook and review paper were evaluated for the content, organisation, vocabulary, language use and mechanics and the focus was the outcome of students' collaborative writing and whether the task was done adequately based on the course specification.

1.6 Significance of the Study

Most public and private universities in Malaysia are going through transformation to provide the demands of the workforce and stakeholders, and to keep up its global competitiveness. The utilisation of online learning in tertiary education has increased immensely in Malaysian education institutions and particularly in public universities. The implementation of the e-Learning policy in Malaysian higher education encourages instructors to utilise online learning in their classes and students are encouraged to participate in online learning activities. These activities, which can be a topic for open discussion or a group assignment, promote collaborative learning and foster increased knowledge and confidence among students working in groups. Thus, this study is deemed significant in theory, where it has the potential to help improve tertiary classroom practices in Malaysia by addressing the existing online collaborative learning from social constructivist perspectives. The integration of CMC systems into traditional classroom lecture-based learning has been observed and hence the findings from this study may contribute to existing literature in online learning practices through the use of different modes of online interaction, aka asynchronous and synchronous systems.

In addition, it is significant to conduct this study because the online interaction processes among ESL undergraduates in Malaysia in completing collaborative writing are not fully understood in various perspectives. The more familiar with the problems in the use of online tools the better for instructors and students to be able to solve problems when attempting collaborative writing tasks. This study offers to fill the research gap by looking into ESL undergraduates' online interaction using different CMC systems and tools for collaborative writing in a Malaysian context. Studies in written communication have highlighted the necessity for tertiary students to produce certain kinds of texts or genres of which various disciplines in the academic sector are required such as essays, which the ESL students find it hard to produce. However, with proper teaching and learning methods, these students can overcome their difficulties in English writing through different techniques. Thus, this study explains the use of technology such as CMC tools for interaction and collaborative writing.

This study is also considered important as it informs instructors in making decisions that promote learning which prepares graduates for the careers that increasingly call for teamwork and group efforts in solving day to day problems. In addition, it offers a better understanding of what occurs in online interaction which provides instructors and instructional designers priceless information. This is essential for planning and developing courses that can integrate finest practices and most successful instructional strategies for providing students with exceptional online interaction and collaborative experience. Furthermore, it provides information that is useful to practitioners in the

field as they decide, or are permitted, to integrate these technologies and methodologies into their teachings, asynchronous or synchronously.

The online interaction processes that take place in collaborative learning are complex and the more familiar with them the better instructors and students will be equipped to face problems and issues when attempting assignments in a tertiary context. Significantly, the results of this study may contribute to the general teachings and collaborative learning among ESL students and the use of different CMC tools (Wiki and Skype) as a medium for facilitating this process. A better understanding of the asynchronous and synchronous interactions that occur in an online learning environment and that are collaborative in nature contributes to the body of knowledge.

Finally, the study is strategically important for extending ICT education and online learning into advance collaborative contexts with the consideration of diverse stakeholders, not merely for tertiary institutions but also for the larger community. Thus, the results from this study may suggest the type of CMC tools that are more suitable and useful in tertiary education, industries and schools, and offers improvement for online interaction for the benefits of administrators, policy makers, syllabus developers, instructors, students, as well as ICT enthusiasts. It is hoped that the knowledge and insights developed in this study may provide an alternative method for instructors who have opportunities to introduce the network technologies into their classrooms. Hence, the findings from this study may contribute to existing literature in the field of CMC.

1.7 Definition of Key Terms

This study incurred several key terms that needed to be defined.

Collaborative Learning: Dillenbourg (1999) defined collaborative learning as ‘a situation in which two or more people learn or attempt to learn something together’ (p.1), but according to the author, these features can be interpreted in different ways. Alongside, Hathorn and Ingram (2002) defined collaboration as “the interdependence of the group participants as they share unique ideas and experiences” (p.33). Thus, it is a structure of learner-learner interaction, which is an instructional approach where a small number of learners interact with each other and share knowledge and skills to achieve a learning goal (So & Brush, 2008). This study emphasised on collaborative learning that involves a group of students with different ability levels work together at different places to achieve a common goal and a shared purpose using online technology (e.g. Lipnack & Stamps, 2000). Students form a group of four to five members and discuss their tasks using Wiki and Skype for collaborative writing. The essence of collaborative learning is that team members need a shared understanding of content, process and each other (Mulder, 1999).

Collaborative Writing: Collaborative writing can be defined as a group writing assignment that is completed collaboratively in pairs or small groups (Noël & Robert, 2004). The collaborative writing task in this study referred to group assignment where students were required to write an e-textbook and a review paper collaboratively by means of reading, searching information, and group discussion via Wiki and Skype.

The contents of the e-textbook consist of four main sections which are the introduction, topics section (ESP related topics), conclusion and references. The review paper consists of the introduction, methodology/themes/discussion, conclusion and references. The written products were evaluated using the ESL Composition Profile (Jacobs et al., 1981) with five components – content, organisation, vocabulary, language use and mechanics. Each component has four rating levels – very poor, poor to fair, average to good, and very good to excellent (Bacha, 2001). The textual analysis focused on how each group coordinates its writing and contributes in the written documents, while the evaluation was based on the students' writing skills.

CMC Systems: Computer-mediated communication (CMC) systems are technologies developed to facilitate the online communication between individuals in an asynchronous or synchronous environment. In addition, educational technologies such as WebCT, Moodle or Blackboard are widely used in collaborative learning (Alavi, Yoo & Vogel, 1997; Williams, Duray & Reddy, 2006). For this study, the online interaction involves two modes of CMC, which include asynchronous and synchronous interaction using Wiki and Skype. Thus, ESL students used Wiki for interaction and discussion for their first collaborative writing task which involved writing an e-textbook on the Wiki webpage. Skype was used for instant discussion among group members for the second collaborative writing task which is a review paper, and the students used Microsoft Word for the paper.

Interaction Patterns: Interaction patterns are the different ways that students and their peers can interact or discuss in the class or online. Interaction can be defined as a reciprocal communication process between human and human or human and non-human, such as human-computer interaction (So & Brush, 2008). Interaction in a collaborative environment is a primary process and crucial not only for knowledge sharing and acquisition, but for cognitive development as well. Students can participate in social interaction by reading and responding to peers' messages in discussion forum and real-time chat (Gallini & Barron, 2002). Thus, student-student interactions in this study referred to text-conversations through CMC tools (Wiki and Skype) for collaborative task discussion. The text-conversations from Wiki discussion forum and Skype instant messaging were collected and archived for interaction patterns analysis. The Coding Scheme for Online Interaction adapted from Curtis and Lawson (2001) that consists of planning, contributing, seeking input, reflection/monitoring, and social interaction was employed for the analysis.

Asynchronous Interaction: An Asynchronous Learning Network (ALN) is defined as environments where students use computers to communicate and work with their peers and instructors (Mayadas, 1999). One of the advantages of asynchronous interaction is that the participants have more time to think and reflect on the course content and produce their contributions (Biesenbach-Lucas, 2003). In this study, asynchronous interaction was available through a Wiki discussion forum in a private group area where students discuss their writing task collaboratively.

Synchronous Interaction: Synchronous interaction using CMC tool involves real-time participation among students, such as live chat using text, audio and video conference (Martin, Parker, & Deale, 2012). Providing synchronous elements to online courses can enhance meaningful interactions (Repman, Zinskie, & Carlson, 2005). For the purposes

of this study, this mode of communication was available through Skype instant messaging.

Knowledge Sharing: Knowledge sharing is defined as a voluntary action (Davenport, 1997). In particular, knowledge sharing refers to one who is willing to share knowledge with another (Gilbert & Krause, 2002). The activities in knowledge sharing online include group members reading postings online, answering inquiries, and explaining and elaborating meanings. Students are required to participate and interact with each other to incorporate, brainstorm, and share information. Thus, exchanging opinions and negotiation of disagreement facilitates knowledge sharing and knowledge construction (Rosen, Furst & Blackburn, 2007). In this study, students share their knowledge among group members in the process of online collaborative interaction. The study intends to find out what factors contribute the most to knowledge sharing looking at social presence, trust, conflict, mutual influence, cohesion, and team leadership.

Readiness: Readiness for online learning can be defined by three characteristics: (1) students' preferences for the structure of delivery against face-to-face classroom teaching; (2) student competence and confidence in using technology for communication, typically in the use of CMC; and (3) ability to engage in self-directed learning (Warner, Christie, & Choy, 1998). Nevertheless, E-readiness is defined as the capacity to obtain benefits from the use of ICT (Choucri et al. 2003). In this study, students' *readiness* refers to the mental or physical preparedness for some experience or action (Borotis & Poulymenakou, 2004) of undergraduates' interaction using Wiki and Skype in completing collaborative writing task. Therefore, an e-learning readiness assessment measures the ability of an organisation to take advantage of e-learning.

1.8 Summary

The main focus of this study is to look into how ESL undergraduates utilise CMC tools in online interaction to complete their collaborative writing tasks; whether online interaction facilitates collaboration, and to what extent collaboration and contribution occurs in the interaction. With the objectives in mind, other factors related to the use of technology for interaction and collaboration were taken into consideration to fill the gap and to understand deeply the process in completing collaborative writing tasks among ESL undergraduates in a Malaysian public university. In this manner, the integration of CMC into tertiary level needed to be reviewed; the factors that contribute to knowledge sharing in collaboration needed to be emphasised; the preferences of online tools needed to be highlighted; the students' views on Wiki and Skype and their writing products needed to be discussed. Thus, the next chapter extends the review of literature for the study.

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