



Faculty of Cognitive Sciences and Human Development

**FACE-TO-FACE CLASSROOM DISCUSSION VERSUS  
ASYNCHRONOUS ONLINE DISCUSSION:  
TESL PRE-SERVICE TEACHERS' LEARNING EXPERIENCES**

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**Kota Samarahan  
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ASYNCHRONOUS ONLINE DISCUSSION:  
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This project is submitted in partial fulfilment of the requirements for a  
Bachelor of Education with Honours  
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Faculty of Cognitive Sciences and Human Development  
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The project entitled **Face-To-Face Classroom Discussion Versus Asynchronous Online Discussion: TESL Pre-Service Teachers' Learning Experiences** was prepared by *Jessica Lau Choon Hee* and submitted to the Faculty of Cognitive Sciences and Human Development in partial fulfilment of the requirements for a Bachelor of Education with Honours (Teaching English as a Second Language).

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## ABSTRACT

### **FACE-TO-FACE CLASSROOM DISCUSSION VERSUS ASYNCHRONOUS ONLINE DISCUSSION: TESL PRE-SERVICE TEACHERS' LEARNING EXPERIENCES**

Jessica Lau Choon Hee

This comparative study was carried out to explore the participants' learning experiences in terms of patterns of participation and interaction in face-to-face (FTF) classroom discussion and text-based asynchronous online discussion (AOD). The grounded framework used is Heckman and Annabi's (2005) content analytical framework to assess learners' discourse, social, cognitive and teaching process in both FTF and AOD settings. The objectives of this study were: (1) to investigate the similarities and/or differences between students' interaction patterns in FTF and asynchronous discussion from the aspects of the discourse, social, cognitive and teaching process; (2) to investigate students' responses to FTF and asynchronous discussion. In this case study, the four learning processes were investigated using content analysis by examining one transcript from each mode of discussion among 20 pre-service teachers in University Malaysia Sarawak. The study further investigated the participants' perceived learning experiences in both modes of learning by using survey questionnaire and semi-structured interviews.

The findings from content analysis demonstrated a whole picture of the four interdependent learning processes. In terms of discourse process, the participants produced informal spoken discourse in classroom discussion and in contrast, more formal written discourse in AOD mode. In terms of social process, the social events were more dominant in AOD mode if compared to its FTF counterpart. In terms of cognitive process, the number of cognitive events identified from both mediums of learning was equivalent. In terms of teaching process, teaching events were predominant in FTF mode and rather minimal in AOD mode. The survey results substantiated the findings from content analysis and thus, it adds credit to the practicality of Heckman and Annabi's (2005) framework in studying learning outcomes of an academic community in both classroom and online settings. Based on the findings from the semi-structured interviews, this study identified the pedagogical issues as well as the learner's personality characteristics and motivation as the underlying predominant variables that may affect the learning outcomes in each medium. These identified variables set the platform for further research by taking into account these factors as single variables to investigate their effects on FTF and online interactions.

## **ABSTRAK**

### **PERBANDINGAN ANTARA PERBINCANGAN BERSEMUKA DALAM KELAS DENGAN PERBINCANGAN ASINGKRONI DALAM TALIAN: PENGALAMAN PEMBELAJARAN GURU-GURU PRA-KHIDMAT TESL**

*Jessica Lau Choon Hee*

*Kajian perbandingan ini telah dijalankan untuk mengkaji pengalaman pembelajaran guru-guru pra-khidmat kumpulan TESL dari segi cara penglibatan and interaksi semasa perbincangan bersemuka dalam kelas dan perbincangan asingkroni dalam talian. Untuk kajian ini, Heckman and Annabi Model (2005) digunakan sebagai kerangka konseptual untuk menganalisa empat proses, iaitu, wacana, sosial, kognitif dan pengajaran. Objektif kajian ini adalah untuk (1) mengkaji persamaan dan/atau perbezaan antara interaksi semasa perbincangan bersemuka dalam kelas and perbincangan asingkroni dalam talian dari segi proses wacana, sosial, kognitif and pengajaran; (2) mengkaji respons pelajar terhadap perbincangan bersemuka dalam kelas and perbincangan asingkroni dalam talian. Sampel kajian ini terdiri daripada 20 guru pra-khidmat kumpulan TESL dari Universiti Malaysia Sarawak. Dalam kajian kes ini, empat pembelajaran proses itu telah dikaji dengan menganalisa satu transkrip perbincangan bersemuka dalam kelas and satu transkrip perbincangan asingkroni dalam talian. Seterusnya, kajian ini mengkaji pengalaman pembelajaran guru-guru ini semasa kedua-dua jenis perbincangan itu dengan soal-selidik kajian dan separa berstruktur temu bual.*

*Hasil kajian memberikan gambar keseluruhan tentang empat pembelajaran proses itu. Dari segi wacana, guru-guru ini menghasilkan wacana lisan secara tidak formal dalam perbincangan bersemuka dalam kelas. Mereka menghasilkan wacana bertulis yang formal semasa perbincangan asingkroni dalam talian. Dari segi sosial proses, kewujudan sosial lebih dominan semasa perbincangan asingkroni dalam talian. Dari segi kognitif proses, bilangan hasil kognitif dalam kedua-dua jenis perbincangan kira-kira sama. Dari segi pengajaran proses, aktiviti pengajaran lebih dominan semasa perbincangan bersemuka dalam kelas dan amat minimal semasa perbincangan asingkroni dalam talian. Selain itu, hasil pemeriksaan daripada soal-selidik membuktikan dapatan dari analisis kandungan. Berdasarkan penemuan daripada temu bual, kajian mendapati faktor pengajaran pensyarah, personaliti and motivasi pelajar adalah penting dalam menentukan kualiti perbincangan. Faktor-faktor ini perlu dikaji untuk mengetahui pengaruh mereka terhadap interaksi semasa kedua-dua perbincangan itu kemudian hari.*

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## **LIST OF ABBREVIATIONS**

ALN	Asynchronous Learning Networks
AOD	Asynchronous Online Discussion
CALL	Computer-Assisted Language Learning
CMC	Computer-Mediated Communication
FTF	Face-to-face
ICT	Information and communication technology
RJ	Reflective Judgment
SOLO	Structure of Observed Learning Outcomes
TESL	Teaching English as a Second Language
UNIMAS	Universiti Malaysia Sarawak

## **CHAPTER ONE**

### **INTRODUCTION**

#### **1.0 Chapter Overview**

This chapter describes the background and the research problem. It also explains the aim and objectives of the study, significance of study, operational definitions of terms and scope of the study.

#### **1.1 Background of the Research**

In traditional classroom, from schools to higher institutions, different teaching methods, such as direct instruction, drills and practices, classroom discussion, problem-based learning and discovery learning, are practised based on certain instructional goals (Arends, 2004; Burden & Dyrd, 2003; Lasley, Matczynski, & Rowley, 2002). From these choices of instructional strategies, classroom discussion is an effective method that gives students the opportunity to interact with each other and encourage learning (Moore, 2001). This approach is suitable for all grade levels, especially adult learners in higher institutions who have more experience and wide range of perceptions in a particular subject matter to share (Gunter, Estes & Schwab, 2003). Through discussion, students are more likely to be involved in active learning and critical evaluation of own knowledge, skills and attitudes towards collaborative and cooperative learning (Burden & Dyrd, 2003). However, classroom discussion may face several challenges such as limited instructional time, over dominance by instructor and/or vocal students,

cognitive blocking and limited time for reflection (Berge, 1998; Bonk & King, 1998). By taking these classroom constraints into concern, some teachers resort to the use of online interaction partly due to the emergence of the Internet and the World Wide Web in present days in order to accomplish some of the classroom goals held for classroom discussion and to enrich in-class discussion through Internet.

As alternatives or supplements to traditional face-to-face (FTF) discussion, Computer-Mediated Communication (CMC) tools, which include synchronous and asynchronous CMC tools, are widely employed in order to promote greater opportunities for collaborative learning in which meaningful learning experiences or knowledge are often co-constructed among students or among teacher and students (Arnold & Ducate, 2006; Pawan, Paulus, Yalcon, & Chang, 2003). By providing different modes of discussion outside the classroom, teachers can create an environment where teaching-learning interactions are enhanced, where students take an active role in their learning, and where the learners' learning experiences continue to be enriched outside the classroom (Greenlaw & DeLoach, 2003; Scarce, 1997).

Of the two main CMC tools, asynchronous CMC widely predominates in educational contexts and lends itself to a more interactive learning environment than a real-time environment as in the traditional, lecture-based setting or synchronous environment (Arnold & Ducate, 2006; Ellis, 2001; Wang & Woo, 2007). A great deal of research studies have been carried out to look into the benefits of integrating asynchronous components into traditional classes, such as openness, learner control, more thoughtful classroom interaction, heightened cognitive and social skills, and the potential for a learner-centred environment that encourages more balanced participation among students (Anderson & Kanuka, 1998; Garrison, Cleveland-Innes & Fung, 2004; McKenzie & Murphy, 2000; Meyer, 2003). Despite of these potentials that are offered by asynchronous CMC, there are studies that compare asynchronous communication tools to FTF classroom discussion highlight the limitations of asynchronous CMC, for



examples, technical complexities, language difficulties, delays, absence of social contextual clues and social insecurities (Chong, 1998; Ellis, 2001; Mastrian & McGonigle, 2000; Meyer, 2003; Wang & Woo, 2007) and, at the same time, draw our attention to the conduct of classroom discussion which is preferred because of its authenticity and immediacy (Chan & Rapman, 1999; Wang & Woo, 2007; Wegerif, 1998).

The nature of both classroom discussion and online discussion that promote learning provide room for researchers to analyse the discussion threads in order to determine whether real learning is facilitated in both learning mediums (Meyer, 2003). However, there are little research studies that evaluate the actual learning and students' participation in these two mediums of discussion. Therefore, there is a need for in-depth research that examines the discourse, social, cognitive and teaching process that take place in both learning mediums to capture picture on the students' learning.

## **1.2 Statement of the problem**

Over the past decades, educational institutions have been spending large amounts of finances and resources to integrate educational technology to facilitate collaboration among students as well as teachers and students and to extend learning beyond the confinements of classroom. In line with the innovation in language education, that is Computer-Assisted Language Learning (CALL), teacher training programmes of several universities, including Universiti Malaysia Sarawak (UNIMAS) expose teacher trainees to the use of asynchronous technologies to prepare them for the use of technology in their future teaching career. However, these CMC tools can both serve as an aid or conversely, a burden (Chong, 1998). There are studies that revealed that the students' participation in the traditional classroom is distinct from online discussions in various aspects in other educational or non-educational settings especially in the US and UK (An & Frick, 2006; Heckman & Annabi, 2005; Johnson, Sutton & Poon, 2000; Meyer, 2003). Nevertheless, there are limited studies which offer comparisons between FTF discussions and online discussions in such educational

setting as in Malaysia, especially in language teacher education programme. This is relevant as many initiatives have been taken to incorporate CMC as supplements to classroom instruction in language education programme to equip the teacher trainees with theoretical knowledge and experiences of using technologies with the hope that they can apply the technology in their future classroom practice. With this blend of classroom discussions and new asynchronous technologies of teaching and learning in higher institution, it becomes relevant to research the classroom discussion method and its applications in CMC with the aim of learning how to improve either or both, especially in teacher education programme.

Despite the growth of evaluative research frameworks or models in assessing online discussion, there are few frameworks that have been employed in assessing both FTF classroom discussion and online discussion for comparison and assessment of learning that takes place in two distinct learning environments. Furthermore, in assessing learning experiences in academic learning community, most research models are used to analyse the discourse, social, cognitive or teaching process in isolation rather than looking into all the elements which are interdependent and interrelated in producing intended learning outcomes in educational setting. In most circumstances, the essential elements cannot be analysed in isolation (Garrison et al., 2001).

In analysing FTF and online discussion, a wide range of research has been conducted using different quantitative and/or qualitative methodology. For example, quasi-experimental (Benbunan-Fich, Hiltz & Turoff, 2001), ethnographic study (Meyer, 2003), survey (Garrison, Cleveland-Innes and Fung, 2004; An & Frick, 2006), content analysis (Heckman & Annabi, 2005), interview (Ellis, 2001), etc. The empirical studies, which are statistics-based, lack of inductive, in-depth analysis on how the individuals arrived at their preferences of the modes of learning. In contrast, ethnographic studies requires for certain amount of statistical data to check for its reliability. In some studies, content analyses of discussion transcripts may not offer thoroughly informative data to

study students' collaborative interactions in discussions. Thus, more research studies are required with the combination of qualitative and quantitative data needed to cross check for reliability of the information in analysis students' learning experiences in classroom and online discussion.

Therefore, the present study seeks to investigate the different gains and limitations from both classroom and online learning mediums to look into student teachers' learning experiences and participations in four interdependent processes like discourse, social, cognitive and teaching process. The study was based on a unified framework as proposed by Heckman and Annabi (2005) that integrates schemes used by many researchers and represents the most current integration of previous works, which include Garrison et al.'s Practical Inquiry Model (2001) and Aviv's (2000) ALN model. The study also investigated the factors that encourage or inhibit students' participation in both learning environments and their perceptions on their learning experiences in both settings.

### **1.3 Research objectives**

This study aims to evaluate students' learning experiences in terms of the patterns of participation and interaction in different settings that include traditional classroom setting and the online forum. The grounded framework used is Heckman and Annabi's (2005) content analytic framework to evaluate learner's cognitive, social, teaching and discourse process. The study also intends to highlight the factors that influence learners' level of participation in class and online learning as well as their response to the potentials and challenges of classroom discussion and asynchronous online discussion. The levels of student participations in two modes are being compared: FTF discussion and electronic discussion. The specific research objectives are:

1. to investigate the similarities and/or differences between students' interaction patterns in FTF and asynchronous discussion from the aspects of the discourse, social, cognitive and teaching process
2. to investigate students' responses to FTF and asynchronous discussion

#### **1.4 Research questions**

1. To what extent is the interaction pattern in face-to-face oral classroom discussion similar to and/or different from the text-based online discussion?
2. How do the participants perceive their learning experiences in face-to-face classroom discussion and online discussion in this course?

#### **1.5 Significance of the study**

Many questions have surfaced concerning transferability of approaches in previous studies of comparison between FTF and online discussion to other settings. Many of the case studies or surveys are set in the context of initial teacher education in western countries, especially in the US and UK (Beatty, 2003). However, limited studies directly address transferability from the findings of the studies to other contexts especially in developing countries like Malaysia in which implementation of CMC is still at its stage of infancy. Therefore, this study seeks to provide valuable contributions to the existing research studies on evaluating the quality of learning in both face-to-face and online learning environments, specifically in teacher training programme in Malaysia. This study is relatively significant because it provides a new source of data from different setting in eastern country by employing detailed comparative content analysis of FTF and online discussions as well as insightful data from Malaysian student teachers' perspectives regarding to their learning experiences in both FTF and online environment through questionnaires and interview.

Furthermore, the study would shed some light for those educationalists who are trying to maximise the learning potential among students in both modes of discussion. It may provide valuable implications for the teaching and learning process which is facilitated in different learning environments to support collaborative learning community. Ultimately, this study is hoped to benefit educators in adjusting their instructional methods in these two distinct mediums of learning in relation to their intended learning outcomes based on the benefits and challenges of these two modes of discussion.

As recommended by Heckman and Annabi (2005), further research in this area is required to provide richer evidences to the reliability of their framework across multiple studies. The content analytic method used in their study is still needed to be triangulated with other methods of measurement of learning. Thus, this study, which is based on the same framework, but coupled with triangulation of different method, may provide notable contribution to future development of Heckman & Annabi's (2005) content analytic framework.

## **1.6 Operational definition of terms**

### **1.6.1 Face-to-face (FTF) classroom discussion**

Face-to-face classroom discussion is a method of instruction in traditional classroom which enables immediate, instantaneous, multidirectional interaction among students or between students and teacher. If it is carefully structured, it facilitates exchange and evaluation of opinions directed towards educational goals and affective needs among students (Moore, 2001). In the context of this study, FTF classroom discussion covers whole class discussion and tutorial discussion which physically take place.

### **1.6.2 Computer mediated communications (CMC)**

Computer mediated communication refers to communication between human beings via telecommunication technologies and computer networks used in a variety forms (Wang, 2004). It permits one-to-one communication and one-to-many communication and includes both synchronous (simultaneous, in real time) and asynchronous (delayed) communication (Warchauer & Kern, 2000). Synchronous communication tools can be in forms of text-based or audio chat and videoconferencing; while, asynchronous communication tools can include e-mail, bulletin board, and online forum. In the context of this study, CMC refers to asynchronous communication, specifically bulletin board through a text-based online forum which involves one-to-many communication.

### **1.6.3 Asynchronous online discussion (AOD)**

Online dialog which is text-based with a series of linked messages under certain topics. It develops over time and space for participants to ponder, compose, or reply to messages (Swan, 2001). In the context of this study, asynchronous online discussion involves one-to-many communication in online forum over delayed time.

### **1.6.4 Interaction**

The types of interaction in this study are learner-instructor and learner-learner based on Moore's (1989) classic definition of interaction. A definition is made for this study based on modification of Muirhead and Juwah's (2004) description of interaction: "A dialog or discourse or event between two or more participants and objects which occurs in face-to-face and/or asynchronous situation mediated by response or feedback with(out) being interfaced by technology" (p. 13). In the context of this study, two situations that involve interaction include classroom discussion and asynchronous online discussion through an online forum.

## **1.7 Scope of the Study**

The scope of this study is confined to the interaction patterns and learning experiences among teacher trainees in (T)ESL programme in UNIMAS in FTF and online learning environments. Thus, this study does not examine their development of literacy or mastery of language in two learning mediums.

## **1.8 Chapter Review**

This chapter introduces the need to investigate the similarities and differences of teacher trainees' interaction patterns in face-to-face (FTF) and asynchronous discussion in teacher training programme in the Malaysian context with its underlying research objectives and research questions. Through this further investigation of blending learning with traditional discussion method and applications of CMC, it may give insights on how to improve either modes of

learning or both in educational settings. Furthermore, it functions as a valuable assessment of the implementation of asynchronous CMC tools in teacher training programme based on Heckman and Annabi's (2005) content analytic framework.

The following chapter will further discuss the related concepts of the study especially on the two modes of discussion (FTF classroom discussion and online discussion) with their distinct potentials and challenges. Reviews of relatively significant frameworks of online discussion as well as major related studies of comparison between FTF and online discussion are also presented.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.0 Chapter Overview**

This chapter will further discuss the related issues concerning face-to-face (FTF) discussion and asynchronous online discussion (AOD), the research frameworks for analysis and a review from major related studies.

#### **2.1 Introduction**

With the rapid development of Information and communication technology (ICT), most teacher training institutions are undergoing a change in terms of delivery methods of their courses (Jung, 2005) in which technology can be used as supplement in traditional classroom or as a form of web-supported instruction and online distance instruction. CMC has been widely included in teacher training programme to prepare the teacher trainees for effective use of CMC tools in classroom (Kassen & Higgins, 1997). Experiences of using CMC tools in teacher training course not only enable student teachers to be familiar with pedagogical understanding of the implementation of technology, but also, to discover or evaluate the use of technology through hands-on practices (Jonassen, 2000; Warchauer & Healey, 1998). CMC can promote collaboration in education and professional development, improve teacher training, and connect teachers to the worldwide teacher community (Arnold & Ducate, 2006; Pawan et al., 2003). With these significant potentials of CMC tools, the implementations of ICT are