The Student Experience of a Blended Learning Accounting Course: A Case Study in Hong Kong

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ABSTRACT

The research is an inquiry into students' learning experiences within a blended learning Accounting course in a sub-degree programme at a university in Hong Kong. In this course, the students were required to attend face-to-face classes and to participate in learning activities in the online platform. A case study research approach was adopted that involved 2 classes of 2 teachers and 80 students. Qualitative data were generated through classroom observations, online participation observations, student learning logs and reflections, student focus group interviews, student individual interviews, individual teacher interviews and an individual interview with the course leader. Thematic data analysis was used and a Community of Inquiry (CoI) model was used as a theoretical framework. The analysis showed that the students engaged in learning by integrating traditional and online learning activities and many of these were located within the social, cognitive and teaching presences within the CoI model. However, the students were found to be involved actively in non-prescribed activities that included the use of social network applications. The active learning exploration driven by students' intrinsic motivation and the consequent collaborative learning among students using social media tools were not reflected in the CoI model. Hence, a new element of autonomy is proposed as an addition to the framework, to reveal the link of autonomous learning to the learning community. By extending the CoI framework, the contribution of this research is to provide a holistic model for the successful design and implementation of blended learning in higher education institutions.

PUBLISHED PAPERS FROM THIS RESEARCH

<u>Journal Articles</u>

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<u>Book Chapters</u>

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In loving memory of my mother who passed away in 15 Jan 2016, this thesis is dedicated to her. I love and miss her very much.

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LIST OF ABBREVIATIONS

AT   Assessment Task

CMC   Computer-Mediated Communication

CoI   Community of Inquiry

CSCL   Computer-Supported Collaborative Learning

ECoI   Extended Community of Inquiry

EDB   Education Bureau

HKSARG   Hong Kong Special Administrative Region Government

HKU   The University of Hong Kong

HKU SPACE   School of Professional and Continuing Education,
                The University of Hong Kong

HPCC   HKU SPACE Po-Leung-Kuk Community College

ICT   Information and Communications Technologies

ILO   Intended Learning Outcome

LMS   Learning Management System

MA   Management Accounting

OAD   Online Asynchronous Discussion

QEGS   Quality Enhancement Grant Scheme

RQ   Research Question

SOLO   Structure of the Observed Learning Outcome

SOUL   SPACE Online Universal Learning

SRQ   Research Sub-Question

TLA   Teaching and Learning Activity

1 THE CONTEXT OF THE RESEARCH

1.1 Introduction

Education in Hong Kong has been undergoing a rapid reform since the end of the last century. The policy to develop biliteracy and trilingualism in secondary schools, the ten-year progressive increase in the numbers of students participating in post-secondary education, the establishment of the Continuing Education Fund, the seven-level Qualification Framework, and the change of the academic structure from 5-2-3 (5 years of secondary school education, 2 of senior secondary and 3 of tertiary) to 3-3-4 were implemented in 1997, 2000, 2002, 2008 and 2012 respectively. One of these reforms, the implementation of the ten-year progressive increase in post-secondary education, has had a great impact on the education system as it has doubled the number of students in ten years (UGC, 2010). This expansion was largely through the proliferating development of self-financing full-time sub-degree programmes (FSTE, 2013). The total number of enrolments in sub-degree programmes in 2013 was 92700 (HKSARG - EDB, 2014a).

Parallel with these reforms, the Hong Kong Special Administrative Region Government (HKSARG) also pledged to enhance the effectiveness of teaching and learning so that students will be equipped with the knowledge, skills and attitudes they need to meet the challenges of the information age (HKSARG-EMB, 1998). The government issued three strategic documents on using information technology for learning in 1998, 2004 and 2007 respectively (HKSARG - EDB, 2014b). In these documents, the government showed its direction in equipping students with skills in information technology in order to grow

with the globalizing world in the information and knowledge age. In line with the government's strategy, the use of information and communicative technologies (ICT) in higher education in Hong Kong has increased rapidly. Recently, the higher education institutions have provided blended learning, which was defined as an appropriate mix of online learning supplementary or complementary to traditional face-to-face learning (HKU SPACE, 2011a).

Blended learning is defined as an integration of traditional and online learning experiences, while traditional and online learning are also commonly referred to as face-to-face and e-learning respectively (Bates, 2005; Derwin, 2008; Garrison and Vaughan, 2008). The research on blended learning in higher education is mainly focused on degree level and is limited in relation to sub-degree level (Chan and Chan, 2010). It is very important to understand the learning experiences provided for sub-degree students because they can reflect learning quality and may lead to an indication of directions for professional development (Chan and Chan, 2010).

Hence, it is important to fill this research gap and understand the learning experiences of Hong Kong sub-degree undergraduates in the blended learning environment, where learning is taking place in both traditional and online learning. This research study was carried out in the School of Professional and Continuing Education of The University of Hong Kong (HKU SPACE). A case study was conducted in the Management Accounting (MA) course of the sub-degree programme named Higher Diploma in Business (Accounting). The course was selected because I was involved in this blended learning course development project. Therefore, I could communicate easily with the course

leader to obtain the consent to conduct the research. As well, I have sufficient knowledge about the Accounting subject context with my academic background, which allows me to communicate effectively with the course leader, teachers and students in related topics.

In this introductory chapter, the research problem is outlined, the research statement is stated and research questions are listed. The research context, which covers my studies, my research interest, the selected research project and the research approach taken, are described. Finally, the structure of the thesis is introduced.

1.2   Research Problem

Researchers have started working on students' learning experiences in the blended learning environment. Recent research results have shown that, for effective blended learning development, the whole course should be redesigned in order to integrate classroom learning and online learning (Heinze and Procter, 2004; Jolliffe, 2001; Smythe, 2011; Webster and Murphy, 2008). Researchers have advocated that a blended learning instructional design with a user-centric pedagogical approach should be adopted (Naidu, 2003). It was also believed that the learning needs of students in the blended learning environment were different from a pure mode of learning (Cai and Yao, 2010).

The University of Hong Kong (HKU) decided to adopt an outcome-based approach in the design of the new four-year curriculum (Chu, 2012). In the sub-degree sector, the Federation for Self-financing Tertiary Education (2013) suggested using constructive alignment (Biggs and Tang, 2007) to align intended learning outcomes (ILOs), teaching and learning activities (TLAs) and assessment tasks (ATs) as good practices in course

design. HKU SPACE employed the constructive alignment approach to design the blended learning course in 2009 to 2011. The blended course was launched in 2011 and this course has been offered to the students until now.

Although many studies have been conducted on blended learning for degree-level education (Keppell 2007; Lee and Chong, 2008; Leung, 2012; Tsui, Chan, Tian, Li and Ho, 2013; Wang, 2010; Yeh, 2013), the research on students' learning experiences at sub-degree level is very limited (Chan and Chan, 2010). Therefore, it is important to research this area. The research problem of this study was to investigate the learning experiences of the sub-degree students in the blended learning environment. Furthermore, it was also expected to identify new issues in blended learning. Besides serving for a doctoral degree study, the research results will also be presented to HKU SPACE for the future development of blended learning for learning experience enhancement.

1.3   Research Statement

The research was an inquiry into students' learning experiences within a blended learning Accounting course in a sub-degree programme at a university in Hong Kong. The aims of this research were to understand the students' learning experiences and to explore new issues in a blended learning environment. With an understanding of these learning experiences, lifelong education providers can adopt blended learning in the most appropriate way so that teaching and learning effectiveness can be enhanced. Besides, by examining the theoretical framework of blended learning, the contribution of this research was to provide a holistic model for the successful design and implementation of blended learning in higher education institutions.

1.4   Research Questions

The following research questions (RQs) were a guide to addressing the issues in the research statement.

> 1. How do students learn in a blended learning environment?
>
> 2. Why do students engage in a blended learning course?
>
> 3. How do external factors influence student engagement in blended learning?

The following research sub-questions (SRQs) provided a framework for answering the research questions.

> 1. How do students learn through the learning activities?
>
> 2. How are traditional learning and online learning linked?
>
> 3. What form does engagement take within the blended study?
>
> 4. How does collaboration facilitate students' study in blended learning?
>
> 5. How does teacher engagement affect students in blended learning?
>
> 6. What are the barriers for students in blended learning?
>
> 7. How do other factors influence the form of student engagement in blended learning?

These questions were generated from the review of literature described in Chapter 2 and they led the research design described in Chapter 3. Since the study is case specific, 'students' in the RQs and SRQs refer to 'sub-degree students' and 'blended learning' refers to the 'blended learning of the sub-degree Accounting course'.

1.5   Research Project Context

A blended learning development project was conducted during 2009 and 2011 in HKU SPACE to make use of blended learning more effectively for enhancing teaching and learning effectiveness. In the project, two blended learning courses were developed in a new online learning platform, SPACE Online Universal Learning (SOUL). The project was targeted at constructing a blended learning course development model for institutions.

I have been working in the online learning team of HKU SPACE since 2000. During these years, I have been involved in many blended learning projects. In this project, I have been involved from planning to delivery. This project planned to conduct research on understanding students' learning experiences. However, with budget limitations, the project could not support researchers to perform an in-depth student learning experience study during the development period. Therefore, I decided to conduct an in-depth learning experience research study of this project for the research phase of my professional doctorate with the University of Nottingham. The main study was performed in 2013-2015. The MA course, with 160 students, was chosen to be the group for the research. Being a Bachelor's degree graduate of Information Systems and Master's degree graduate of Business Administration, I have studied Accounting courses including Management Accounting course and therefore have knowledge of the course context.

1.5.1   The Blended Learning Project

In line with the government's policy direction to promote the quality enhancement of self-financing post-secondary programmes, the Education Bureau (EDB) proposed to

launch a Quality Enhancement Grant Scheme (QEGS) to fund worthwhile projects that could help enhance the quality of teaching and learning of sub-degree programmes (HKSARG - EDB, 2008). HKU SPACE successfully obtained two years' funding from the HKSARG in 2009 to work on the project 'Development of a blended learning model for improving teaching effectiveness in sub-degree Accounting courses'. Through the development of two blended learning Accounting courses, the project team aimed to construct a blended learning course development model as a guideline for the programme team to develop blended learning courses. It was expected that the project would contribute significantly to the advancement of post-secondary teaching and learning by serving as an exemplar of effective blended learning practices. It was also expected that teaching and learning effectiveness could be enhanced maximally through an optional mix of online learning and traditional learning.

A project board and a project team were formed to manage and develop the blended learning course project. The project board included four key personnel, the Head and Chief Researcher of the Centre for Research in Continuing Education and Lifelong Learning, the Vice Principal of the Community College, the Associate Head of Business and Finance, and myself, the Associate Head of the Centre for Cyber Learning. The project board was responsible for making high-level decisions, securing funding, approving the work in all the development stages and managing the project team. I was also assigned as the project manager of the project team. Based on the developed project, a Blended Learning Model was constructed. The project was defined in nine stages. The project board and project team had defined roles and responsibilities in different stages of the project, as shown in the blended learning course development model in Figure 1.

Blended Learning Course Development Model

Monitoring and Control Processes

Stage 0 Project Initiation → Stage 1 Project Planning → Stage 2 Instructional Design → Stage 3 Course Development → Stage 4 Technical Development → Stage 5 Blended Learning Setup → Stage 6 Blended Learning Delivery → Stage 7 Blended Learning Review → Stage 8 Project Production

Project Board	Project Team		
	e-Learning Team	Programme Team	Teaching Team
•Funding & Approval Seeking •Project Team Formation			
•Detailed Project Implementation Plan Development	•Resources Acquisition	•Target Courses Selection & Students Identification	
•ID Approval	•ID Template Development •Requirements Collection		•Course Redesign •Teaching Plan Development
•Course Content Approval	•Online System Setup & Materials Sourcing •Technical Feasibility Assessment	•Evaluation Methodology Development	•Course Content Development •Online Assessment & Forum Topics Development
•Technical Development Approval	•Online Materials Development •Teacher Training	•Evaluation Planning	•Online Content Review
•Course Launch Approval	•Online System Setup & Launching •Student Training	•Evaluation Conducting	•System Familiarisation •Forum Questions Posting
•Course Delivery Monitoring	•Online System Access Monitoring	•Evaluation Analysis	•Blended Learning Delivery •Learning Progress Monitoring
•Improvement Iteration Approval	•System Access Log Analysis •Blended Learning Improvement	•Evaluation Conducting & Analysis •Focus Group Meeting	•Blended Learning Improvement
•Project Completion •Project Production	•Reusable Content Preparation •Maintenance & Improvement	•Maintenance & Improvement	•Course Delivery •Updating & Improvement

Figure 1 Blended Learning Course Development Model (adapted from Lam, Hung, Chan, Zhang, Yan and Woo, 2011)

The Blended Learning Course Development Model was published in August 2011 and a one-day seminar with workshops for the public was conducted on 11 August 2011 (HKU SPACE, 2011b). The published paper title was 'Blended learning course development model'. With the aim of sharing the project management methodology employed in carrying out the project and to highlight the teachers' and students' experiences in blended learning to more participants, the event was attached to the International Conference on Hybrid Learning 2011. I was the first author of this published paper and was one of the key speakers in the seminar.

1.5.2   The Course for Research: Management Accounting (MA)

The MA course of the Higher Diploma in Business (Accounting) programme was selected for the research. This course aimed to develop students' knowledge and understanding of the latest MA practice and theories and to develop students' knowledge of how MA can meet the internal information required by companies in order to perform their essential functions. The course lasts for 12 weeks, including 10 normal teaching weeks and 2 revision weeks. The compulsory learning hours of the course was 42 and total compulsory and optional learning hours was 108 hours. In the normal teaching weeks, the students were required to attend 3 compulsory hours in-class time. For online learning, as decided by the course leader, students were required to participate in one assigned online learning activity. They could also participate in 9 types of optional online activities. The teachers had the flexibility to turn any optional activities to compulsory ones in their classes according to their teaching design. The weekly course plan is shown in Table 1 and the detail descriptions of weekly topics can be found in Appendix A.

Table 1 Weekly Course Plan with Learning Hours

Week	Topic	Pre-Class Activities (Optional)	Class Lecture (Compulsory)	After-Class Online Activities (1 compulsory)	After-Class Online Activities (9 optional)	Compulsory Learning Hour	Total Learning Hour (Compulsory and optional)
1	Introduction to Managerial Accounting and Cost Concepts	2	3	0.5	3.5	3.5	9
2	System Design: Job-Order Costing	2	3	0.5	3.5	3.5	9
3	System Design: Activity-Based Costing	2	3	0.5	3.5	3.5	9
4	System Design: Process Costing	2	3	0.5	3.5	3.5	9
5	Revision of Chapters 1-4	2	3	0.5	3.5	3.5	9
6	Cost Behaviour: Analysis and Use	2	3	0.5	3.5	3.5	9
7	Cost-Volume-Profit Relationships	2	3	0.5	3.5	3.5	9
8	Profit Planning	2	3	0.5	3.5	3.5	9
9	Standard Costs	2	3	0.5	3.5	3.5	9
10	Relevant costs for Decision Making	2	3	0.5	3.5	3.5	9
11	Capital Budgeting Decisions	2	3	0.5	3.5	3.5	9
12	Revision for Final Examination	2	3	0.5	3.5	3.5	9
Total Learning Hours:		24	36	6	42	42	108

The course design was based on the constructive alignment and Structure of the Observed Learning Outcome (SOLO) taxonomy (Biggs 2003, Biggs and Collis, 1982; Biggs and Tang 2007). Biggs (2003) defined the constructive aspect of constructive alignment as what the learner does, which was to construct meaning through relevant learning activities and the alignment aspect as what the teacher does, which was to set up a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. Biggs and Tang (2007) further differentiated the level of engagement of academic students and non-academic students under the learning environment with different teaching methods, as shown in Figure 2. Only academic students can achieve high-level engagement with passive student activities, but all students can become engaged with active student activities. Constructive alignment allows the design of teaching to encourage deep engagement.

High-level engagment

theorizing

applying

relating

explaining

describing

note-taking

memorizing

Academic student

Non-academic student

Low-level engagment

Passive ———————— student activity required ———————— **Active**
(e.g. standard lecture)   (e.g. probem-based learning)
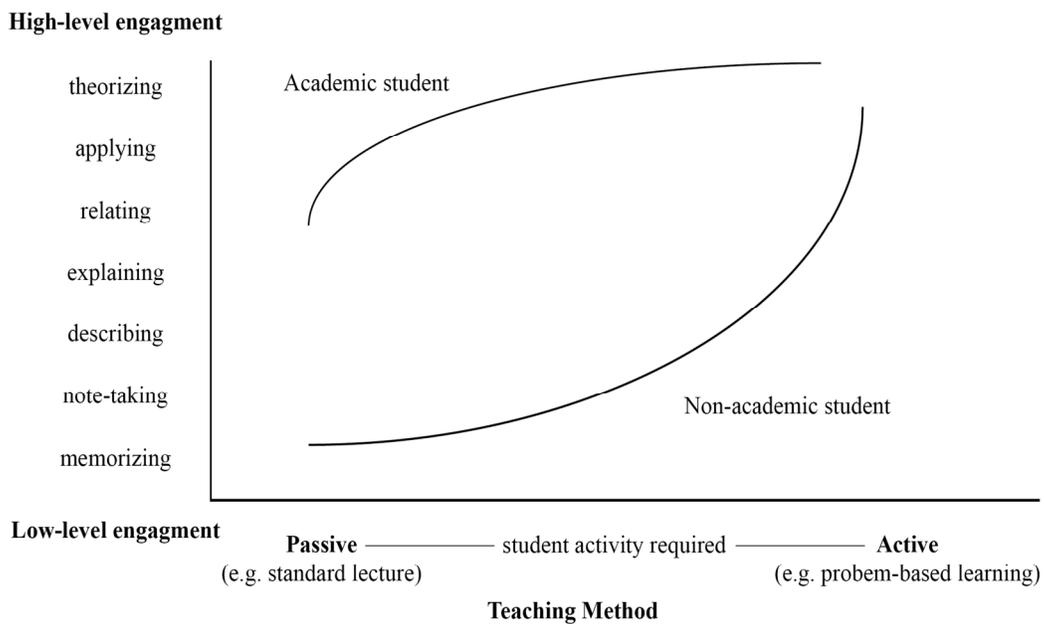
Teaching Method

Figure 2 Teaching Method and Level of Engagement (adapted from Biggs and Tang, 2007)

SOLO was the framework to assess students' understanding; it makes use of verbs to describe the level of understanding. The overall course objective was set to achieve the SOLO level. In each lesson, the teachers defined the intended learning outcomes (ILOs) using verbs as suggested in the SOLO taxonomy. In each of the weekly topics, the teachers also defined the ILOs. The teachers prepared the ILOs, which they discussed with other teachers and the instructional designer in the teacher meetings. After the ILO definition, teaching and learning activities (TLAs) were designed and assessment tasks (ATs) were linked to the objectives. An example of a lesson plan is shown in Table 2.

Table 2 Example of Lesson Plan for Chapter 1 – Intended Learning Outcomes, Teaching and Learning Activities and Assessment Tasks

Topics	Intended Learning Outcomes (ILOs)	Teaching and Learning Activities (TLAs)	Assessment Tasks (ATs)
Financial and Managerial Accounting Schedule of cost of goods manufactured Manufacturing cost flows	Compare the difference between financial and Managerial Accounting (Relational) Describe schedule of cost of goods manufactured (Multi-structural)	Read textbook (Objective 1, 2, 3 & 4; Pre-class; self-reading) Attend lecture (Objective 1, 2, 3; In-class) Level quiz (Objective 4. Post-class; online)	Achieve 80% of correct answer in level quiz

Based on the defined objectives using the SOLO taxonomy, the School developed online learning and collaborative learning activities with different degrees of 'activeness' as defined in constructive alignment. These learning activities were provided to students before class (pre-class), in the class (in-class) and after class (post-class). Online learning activities allow students to learn through interacting with the course content before and after class. Figure 3 shows the online learning activities of the MA course.

Weekly Assignment (Optional)	Chapter Preview (Optional)
Warm-up Quiz (Optional)	Matching Game (Optional)
Chapter Exercise (Optional)	Chapter Quiz (Optional)
Level Quiz (Compulsory)	Chapter Review (Optional)
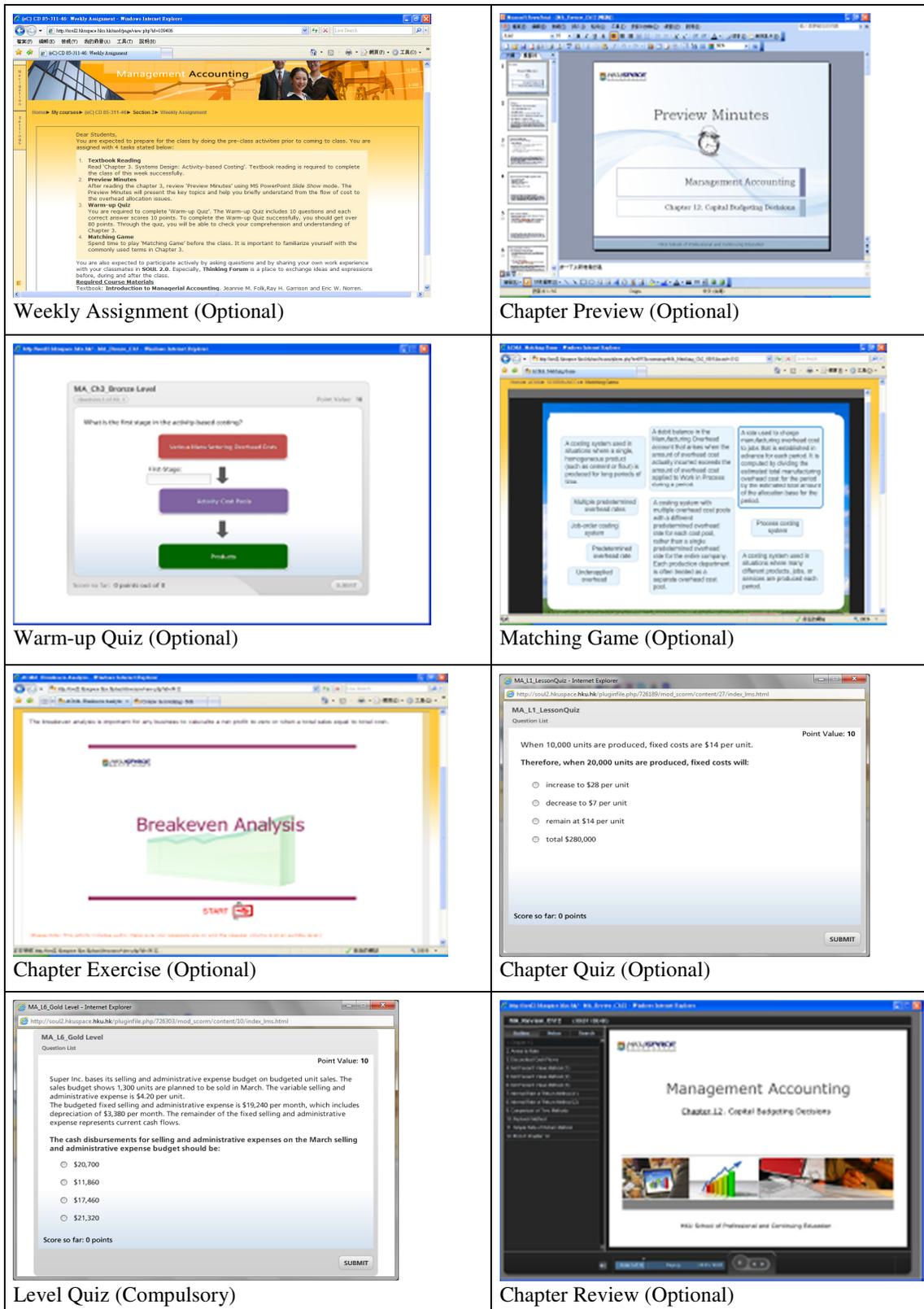
Figure 3 Self-Paced Online Learning Activities

To help the students learn more effectively in an online environment, the 'Weekly Assignment' was designed. In addition, the School prepared the 'Chapter Preview' in point-form summary format to allow students to read through the main points which would be covered in the coming face-to-face lesson. In the MA course, students needed to learn new accounting terms and understand the concepts of these professional terms. The online flash card 'Matching Game' was designed for students to become familiar with the definitions of the terms before the class so that the amount of time for teachers to explain the terms could be reduced to provide more teacher-student interaction in the class. The 'Warm-up Quiz' was designed for students to test their knowledge after self-paced reading and completing the flash card matching game. These optional activities were designed for the pre-class activities which were aimed to give the students an overview of the topic to be taught in order to get them prepared for the coming class.

In the post-class activities, online learning activities were also provided for reinforcing and applying what the students had learned in the face-to-face lecture class. Interactivity and responsiveness were emphasized in the post-class exercises. The students were provided with the correct answers and instant feedback upon submitting their answers. 'Chapter Exercise' was designed to provide more drill-and-practice exercises for the students to practice what they had learned. 'Chapter Quiz' contained multiple-choice questions with topics form a specific chapter of the textbook. 'Level Quiz' was designed with multiple-choice questions with 3 levels of difficulty. 'Bronze Level' questions were basic questions the students should understand to obtain a pass level. 'Silver Level' questions contained more difficult questions that they should able to complete in order to achieve a credit level. 'Gold Level' questions were very difficult for those students who

would like to achieve a distinction. Besides doing exercises and quizzes, 'Chapter Review' was designed as a review of the learning content. This was intended to give students a summary of the taught topics for concept consolidation and revision in a 5-minute presentation file with animation and narration. Of all the activities, only the 'Level Quiz' was a compulsory activity, and this was designed by the course leader.

Collaborative learning activities facilitated student discussion, sharing and the co-construction of knowledge. These collaborative activities could be used for in-class and post-class provision based on the teaching plan and lesson plans of the weeks. Figure 4 shows the tools designed to support online collaboration. In the optional activity 'Thinking Forum', students were provided with real-life cases for them to read, think about and discuss. The questions for facilitating discussion were designed by the project teams. The students were asked to give justification, to provide reasoning and to argue on controversial issues so that they could learn at the SOLO relational level via collaboration.

Thinking Forum (Optional)

Thinking Forum: Scenario-based Discussion

Figure 4 Collaborative Learning Activity – Thinking Forum

Other learning activities were included to provide additional knowledge. The programme team designed these activities to help students connect to the industry instead of just learning from the existing learning materials. As shown in Figure 5, 'Recorded Interview' video clips with professionals in the Accounting Industry were also provided for the students since it was not possible to invite these famous professionals to meet and share with the students in the lectures in every in-take. In order to let the students learn more about the Accounting market, the project team interviewed the professionals and the recorded videos were placed online for students to view. Besides the in-house production of videos, the project team identified online resources like videos as multimedia learning resources for the students. The project team handled the copyright issue with the multimedia providers and provided the online resources for the students.
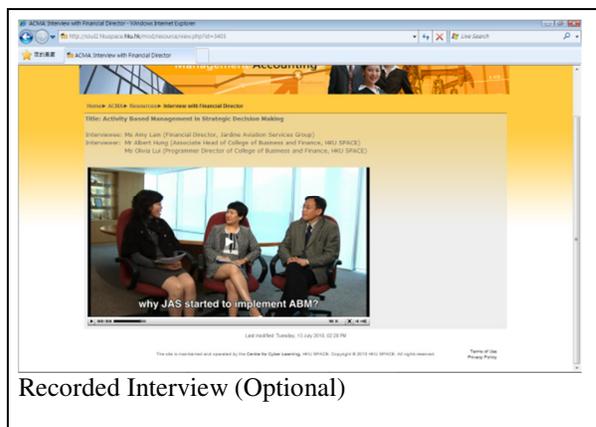
Figure 5 Other Learning Activities – Recorded Interview

Several studies were conducted during the project development stage (Hung, Yuen, Lam, Lau, Kwok, Wong, Leung, Wong, Chiu and Pang, 2011; Lam, Hung, Chan, Zhang, Yan and Woo, 2011; Shim, Lam, Lau, Hung, Yuen and Tsang, 2011; Yuen, Hung, Lam, Lau and Duan, 2011). These studies included constructing a model for managing blended

learning development, the experiences of academics in designing and implementing a blended learning project, the role of instructional design in the blended courses and the learning experiences in the blended learning project. However, there were limitations to the studies. First, they were conducted during the development stage and some of the online learning activities had not yet been developed. The results of the studies of the learning experiences were only interim results of the blended learning project. Second, the online activities were not yet associated with the course assessment, because of administrative concerns. The online activities assessment was approved by the School management in the academic year 2012/2013. Furthermore, the project could not support the team to perform an in-depth student learning experience study due to budget limitations. Hence, the research reported in this thesis is the first in-depth study of the student experiences of the MA course.

1.6 Research Approach

A brief overview of the research is provided here and a full discussion is included in Chapter 3. This research was conducted based on Stake's (1995) method of case study. The primary data sources were in-depth interviews with students. The main study was conducted in the Spring semester of 2013. The MA course had 4 classes of 160 students. In the course, there were 2 teachers and each of them taught 2 classes. The unit of analysis of the case study was 2 classes of 2 teachers and 80 students. At the beginning of the semester, the first round of teacher interviews was conducted and the 2 course teachers were interviewed. During the semester, 2 classroom observations were conducted for each of the classes of the 2 teachers. An additional classroom observation

was carried out with an invitation from one teacher. From this cohort, 25 students were selected from the 2 classes to further explore their learning experiences. The students' learning reflections and logs were obtained during the week right after the scheduled classroom observations. Online participation observations were also conducted during these weeks. After the examination, focus group interviews were conducted with 24 students from the 2 classes in 4 groups. The online participation observations were also conducted at the end of the semester. The individual student interviews were conducted with 8 students from the 2 classes and in-depth questions designed for answering the RQs were asked. The interview data were then coded and analysed. The second round of teacher interviews and course leader interview were then conducted. Thematic data analysis was used and a Community of Inquiry (CoI) model was used as a theoretical framework.

1.7 Thesis Structure

This thesis documents the research process and results. It is divided into six main chapters. The first chapter has given an overview of the research context. The chapter has provided with the background of education in Hong Kong. The research problem, research statement and research questions were then stated. The context of the MA blended learning course was described in detail, with the introduction of the project and the online learning activities. The case study research approach was also introduced briefly.

Chapter 2, the literature review chapter, comprehensively reviews issues in blended learning and its related theories. The history of blended learning is overviewed by

studying the evolution of educational technology. The definitions of blended learning are reviewed critically. In order to understand the research on students' experiences in blended learning, an extensive review of studies related to learning experiences, collaborative learning, online collaborative learning, autonomous learning, motivation, instruction and difficulties in blended learning is included. Theories associated with blended learning are identified. The theoretical framework used in this research, the CoI, is introduced.

Chapter 3, the methodology chapter, describes the research design and research methods. The purpose of the research is explained. A pilot study was conducted to trial the data-generation process to be used in the main study and is described in this chapter. The methods described include classroom observations, student study logs with reflections, student focus group interviews, online participation observations, individual student interviews, individual teacher interviews and course leader interview. After that, the participant selection, data sources, data collection and data analysis in the case study are described in detail. During the study, the research questions were refined and the reasons for the changes are explained. Finally, the issues of validity and reliability, researcher's role, limitations, ethical considerations and the timetable of the research are addressed.

Chapter 4 reports the research findings and discussion. With the use of thematic analysis, 12 themes were found. This chapter describes a blended learning MA course model that was constructed to guide the reporting of findings and the discussion. The findings are discussed using the categories of traditional and online activities, engagement, collaborative learning, instruction, barriers and other influential factors. By answering the

research questions, the students' experience in the blended learning environment is understood, discussed and explored.

Chapter 5 highlights and discusses the new issues identified in the research. It further explores the findings presented in chapter 4 using a CoI framework. The discussion considers whether social presence, cognitive presence and teaching presence existed in the course. As learning autonomy cannot be categorised according to the CoI elements, the limitations of CoI are discussed. It is asserted the new element, autonomy presence, should be included in the model. An Extended Community of Inquiry model (ECoI) with the additional element, autonomy presence, is proposed.

The final chapter concludes the research. This summarizes the contribution to knowledge and considers implications for practice. Limitations of the study and suggestions for further studies are discussed. Further research on autonomy presence in blended learning in the ECoI framework is needed in order to be able to generalise the findings of this study. As well, the engagement of students in autonomous learning in blended learning is recommended as an avenue for future research.

2 LITERATURE REVIEW

2.1 Introduction

This chapter reviews the literature on blended learning and students' experiences in the blended learning environment. The purposes of this literature review are to study how researchers have defined blended learning, to find out what the students' experiences are, and to explore how it is associated with learning theories. Reviewing the literature of blended learning is significant for locating the research gap and identifying the theoretical framework of this research.

Search strategy was used to identify the reviewed literature. Key books and journals related with the keywords of 'blended learning', 'online learning', 'e-learning' and 'learning experience' were firstly reviewed. Then, I searched the bibliographic databases to identify related articles to read. I accessed the electronic resources through the e-library of the University of Hong Kong. For examples, I searched the articles from NetLibrary, ProQuest, JSTOR and Springerlink. I mainly searched for the recent articles published after 2000 but also read some earlier articles if they were cited by more than one authors in my read articles. Sometimes, I did forward citation search of seminal articles for further readings. To access most recent studies, I read the conference papers. When doing searching, I add the new terms and concepts found in my search list, for example, 'hybrid learning' and 'online collaborative learning', to ensure my searching scope was not limited. With such search strategy, the literature was reviewed extensively and intensively.

This chapter starts with a section on the historical overview of blended learning in higher education. This supports an understanding of the background in which the students experience learning. The student experience of blended learning in higher education is reviewed in the second section. Students' experiences of blended learning are influenced by interaction, autonomous learning, motivation, instruction and barriers. The theoretical framework and model associated with blended learning are reviewed in the third section. The Community of Inquiry (CoI) model (Garrison, Anderson and Archer, 2001) was selected from the reviewed frameworks and models to frame the study of learning experiences of blended learning. The final section addresses the research gap and importance of researching Hong Kong learners and sub-degree learners is explained. Other than the issues reviewed in the literature, the specific issues in Hong Kong, like the growth of the sub-degree sector, the Chinese learner, collaborative learning experiences of Hong Kong learners, intrinsic motivation and barriers like language problems are reviewed.

2.2   Historical Overview

2.2.1   The Evolution of Educational Technology

Educational technology is 'the study of and ethical practice of facilitating learning and improving performance by creating, using and managing appropriate technological processes and resources' (Januszewski and Molenda, 2008, p.1). The use of educational technology in lifelong education began in the 1960s and 1970s (Bach, Haynes and Smith, 2007; Sharma, 2000). The growth of using educational technology has been most evident in the higher education sector (Peterson, 2013) and incorporating the use of technological

platforms and forums has radically altered the way adult learners are engaging with their educational environment (Collopy and Arnold, 2009; Kaufman, 1999; Taylor, 1999).

One of the most popular applications of educational technology is e-learning. Before the mid-1990s, e-learning was commonly referred to as computer-assisted instruction or computer-based instruction (Gibbons and Fairweather, 1998). With the advent of the Internet in the late 1990s, the focus of e-learning changed to web-based and internet-based learning (Campbell, 2004). The definitions of the term 'e-learning' can be confusing as there are 'currently multiple terms that describe the employment of the new technologies in learning/teaching settings, such as Internet-mediated teaching, web-based education, online education, computer-mediated communication, computer assisted learning, e-learning, virtual classrooms, information and communication technologies, open and distance learning, distributed learning, web-based learning, technology-enhanced learning, instructional technologies and virtual learning' (Guri-Rosenblit and Gros, 2011, p.1). Bates (2005) even framed e-learning as 'any form of telecommunications and computer-based learning' and distinguished online learning from this as 'using specifically the Internet and the Web' (2005, p.8). Despite the differences in meanings, both e-learning and online learning still 'provide implications internationally for the referencing, sharing, and the collaboration of results detailed in varying research studies' (Moore, Dickson-Deane and Galyen, 2011, p.134).

With the connection of e-learning to the Internet, it is usually referred to as online learning and the terms 'e-learning' and 'online learning' have begun to be used interchangeably (Bates, 2005). The most contemporary definition of online learning is

associated with learning in the technological environment of Web 2.0, which was originally coined by O'Reilly Media in 2004 and refers to the observed new forms of application, interaction, communities, aggregation and participation in the Web (Duffy, 2008; Flew, 2008). Online learning in Web 2.0 is learner-centred, for content access and with collaborative and interactive learning (Chow and Cheung, 2008; Downes, 2005). Online learning has been developed from the provision of information dissemination to offering all-round learning solutions to students (Zhang, 2011).

With the advent of mobile devices, online learning has been delivered in the mode of mobile learning (Lam, Yau and Cheung, 2010). Mobile learning is considered as a form of flexible and portable online learning which can take place anytime, anywhere, with mobile communication devices (Kadirire, 2009; Park, 2011). However, mobile learning as a species of online learning is controversial. It has been argued that it is not an extension of online learning, as it cannot be promoted as a value-added service for the current online learning based framework and it is only the use of another device with mobility features (Hewagamage, Wickramasinghe and Jayatilaka, 2012). Nevertheless, the use of mobile learning has been increasing rapidly and the development of mobile applications is important to increase students' learning experiences (Lam, Hung, Wong and Chan; 2015).

Online learning has been used widely in higher education sectors as a supplement to traditional classroom learning environments and in non-traditional learning (Tetiwat and Igbaria, 2000). Online learning has become one of the most popular solutions to meet the changing demand for learning, especially in post-secondary education (Shilwant and

Haggarty, 2005). The benefit of online learning to enhance teaching and learning has been recognized widely, in that online learning allows learners to learn across contexts and minimise restrictions on the learning location (Macdonald, 2006; Naidu, 2003). In a study by the US Education Department, a systematic search of the research literature from 1996 to 2008, with more than 1000 empirical studies of online learning, showed that, on average, students in online learning conditions performed better than in face-to-face conditions (Means, Toyama, Murphy, Bakia, and Jones, 2010).

However, the results of adopting online learning are still debatable. One study identified that students in higher education tended to be less satisfied with fully online learning modes when compared to traditional classes (Sikora and Carroll; 2002). As well, it has been found that learners' loneliness, low motivation and doubts about the effectiveness of their education are the main problems of online learning (Cai and Yao, 2010). Despite the arguments against online learning, there is still growth and more students are learning in online modes. Online universities have shown the growth of online learning; in one example, 20% of students completed at least one module and 4% completed an entire degree online (Gainey and Dukes, 2013).

It has been suggested that the limitations of using a purely online learning mode can be minimised by the adoption of a blended learning mode because the blended approach is a more holistic approach in providing an overall learning environment (Bu and Bu, 2012; Cai and Yao, 2010). Blended learning connects learning in the classroom and beyond (Bentley, 1998). Moreover, combining online learning with traditional face-to-face learning techniques can incorporate the benefits of both learning systems (Dias and Diniz,

2014) and therefore researchers have advocated the adoption of blended learning. Furthermore, blended learning can help to overcome a major limitation of traditional face-to-face classroom teaching, that learners are passive recipients of information with teacher-led instruction (Dabbagh and Bannan-Ritland, 2005). Other benefits of blended learning are recognized as improving pedagogy and focusing on learner-centred strategy, allowing learners to participate in their studies actively, to construct knowledge socially and collaboratively and to increase flexibility and cost effectiveness (Ruberg, Moore and Taylor, 1996; Warschauer, 1997). Blended learning has made a significant impact on recent teaching and learning models because it allows students to access material from different media and different perspectives and therefore caters for students' different needs (Ngan, 2011).

2.2.2 Definition of Blended Learning

The term 'blended learning' has been used increasingly in academic conferences and publications in higher education (Graham, 2006). The concept of blended learning emerged in the late 20th century and its terminology was established in the early 21st century (Martyn, 2003; Graham, 2006). In the first published book about blended learning, the term was defined as 'a combination of instruction from two educational models historically separated, traditional face-to-face education and e-learning education' (Graham, 2006:5). Face-to-face teaching instruction is a traditional way for students to learn (Lam and Cheng, 2011; Zhang, Zhou and Nunamaker, 2004). E-learning, or online learning, as defined in Section 2.2.1, is a form of telecommunications and computer-based learning (Bates, 2005), which allows learners to learn across contexts and minimise

restrictions in the learning location (Macdonald, 2006; Naidu, 2003). Another different term used for blended learning is hybrid learning (McNaught, 2011).

Although the typical mixture of blended learning is online and traditional classroom learning (Kim, Bonk and Zeng, 2009), some researchers have criticized that the vague nature of blended learning is confusing, ill-defined and inconsistently used as if it only means utilizing more than one method of providing information to the learner (Oliver and Trigwell, 2005; Shroff, 2010). To be more specific, the term 'blended learning' means any form of teaching containing two or more different kinds of things that can then be mixed (Oliver and Trigwell, 2005). Furthermore, it is believed that the understanding of blended learning should be viewed from a more general perspective in which blended learning is the effective combination of different modes of delivery, models of teaching and styles of learning (Bates and Poole; 2003; Heinze and Procter, 2004). Despite the criticism, substantial literature still refers to blended learning as the blend of two components, traditional face-to-face classroom learning and online learning (Graham, Allen and Ure, 2003; Dias and Diniz, 2014; Kim, Bonk and Zeng, 2009).

The level of integration of traditional and online components in blended learning has been defined in the literature. For example, Garrison and Vaughan (2008) quantified the definition of blended learning with the percentage of use of online learning in a traditional course. However, blended learning should not be simplified as a ratio of delivery modalities, but rather should be associated with pedagogy in which teachers can pursue their pedagogical goals by mixing both beneficial components (Delialioglu and Yildirim, 2007; Dziuban, Hartman and Moskal, 2004). Blended learning should be

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viewed as 'a pedagogical approach that combines the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment' (Dziuban, Hartman and Moskal, 2004, p.3).

The best practices for the implementation of blended learning in higher education should make use of the pedagogies underpinning the blended framework (Garrison and Vaughan, 2008). Blended learning integrates pedagogy and technology with teaching and learning and 'results in improvement of learning outcome and greater student satisfaction which attribute to students' engagement in their learning' (Smythe, 2011:3). The choice of adopting appropriate online technologies when implementing blended learning can facilitate students' learning (Lam and Cheung, 2008). An effective redesign of the teaching and learning environment needs to be supported by pedagogical approaches (Webster and Murphy, 2008). With the appropriate pedagogy, learning can be fostered and students can benefit in terms of engagement and learning outcomes (Lim and Morris, 2009). Blended learning with pedagogical design and intended educational purpose leads students to learn by engaging in their learning experiences (Garrison and Vaughan, 2008). Pedagogy is therefore important in enhancing students' learning experiences of blended learning.

Among the definitions, Garrison and Vaughan (2008) perhaps gave the best definition of blended learning, as they not only defined it as the blend of learning modes but also related it to learning experiences. They said,

> Blended learning is the thoughtful fusion of face-to-face and online learning experiences. The basic principle is that face-to-face oral communication and

online written communication are optimally integrated such that the strengths of each are blended into a unique learning experience congruent with the context and intended educational purpose (2008, p.5).

Traditional learning refers to face-to-face contact and other traditional learning arises from face-to-face instruction (Derwin, 2008). To prevent the misunderstanding that face-to-face learning only involves face-to-face contact, the term 'traditional learning' is used in this study to include both face-to-face contact and traditional learning taking place after class.

Garrison and Vaughan (2008) described the blend in blended learning as 'thoughtful fusion'. In their definition of blended learning, the blend was further incorporating the term 'optimally integrated'. However, 'thoughtful' and 'optimally' were idealised terms and therefore were not suitable to be in the definition of blended learning in this study. Researchers commonly describe the blend as 'integration' (Heinze and Procter, 2004; Jolliffe, 2001; Puentedura, 2013; Saliba, Rankine and Cortex, 2013; Smythe, 2011; Webster and Murphy, 2008). To unify the terms in the definition of blended learning, the blend in this study is described as the integration of traditional and online learning. Integrated blended learning entails more than supplementing an online course with face-to-face meeting (Kelly, 2013). To differentiate the level of integration of blended learning in this study, supplementary blended learning, or non-integrated blended learning, is defined as using online learning to supplement face-to-face learning without pedagogical design. Integrated blended learning is referred to as the blend of online and face-to-face learning with pedagogical design, which the teachers pursue their pedagogical goals

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through the teaching approach to 'combine the effectiveness and socialization opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment' (Dziuban, Hartman and Moskal, 2004:3). Through pedagogical design, students can learn by engaging in their learning experiences (Garrison and Vaughan, 2008).

As learning experiences are the core of this definition of blended learning, it has been used in this study of the student experience in a blended learning course. In Section 2.3, students' experience in blended learning is reviewed in depth.

2.2.3   Theories Associated with Blended Learning

Constructivism suggests that learners 'create knowledge as they attempt to understand their experiences' (Driscoll, 2000, p.376). Constructivist theoretical models have been used as frameworks for online learning study in order to state the transformation of an individual's experience into the individual's knowledge through the knowledge construction process (Tavangarian, Leypold, Nolting, Roser and Voigt, 2004). In a study that used a constructivist approach to build a learning system, the system improved the students' learning (Huang, Hwang and Yang, 2010).

As an extension of constructivist theories, social learning theories advocate the construction of knowledge via social interaction, whereby students can learn through interacting and communicating with peers, teachers and other experts (Vygotsky, 1962). We learn from culture, which is a primary determining factor for knowledge construction, using learning communities, collaborative learning, group work and discussion-based learning (Vygotsky, 1962). Vygotsky's theory asserts the themes of social interaction,

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'more knowledgeable others' and the 'zone of proximal development' (Moll, 2014). The zone of proximal development concept shows that humans learn by achieving difficult goals under guidance and the zone refers to the 'distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more knowledgeable others' (Vygotsky, 1978, p.86). Although the zone of proximal development concept was developed through observing children, it provides an underlying framework for social learning in adult education (Stacey, 1999). Learning is related to and affected by the world, and individuals modify the received knowledge via social interaction (Jarvis, 1987). Drawing on contributions from the constructivists, social theories have provided the fundamentals for the development of later collaborative practices in modern society (Johnson, Johnson and Holubec, 1998; Choi, Johnson and Johnson, 2011). Social theories can be used to provide a theoretical base from which to understand collaborative learning (Doolittle, 1997).

Social constructivist theories underpin much of the theoretical work on blended learning, and these theories focus on how the tools are used in on-line environments to support inquiry and discovery learning in settings where students have opportunity to engage with their teacher and other students (Al-Ani, 2013). With the rise of social constructivist theories, online learning has shifted to a collaborative online learning environment (Nicholson, 2007). In the context of online collaborative learning, social constructivism is also considered as a theoretical foundation for technology and social studies integration, in which learning occurs in the networked environment, the mediation of technology facilitates learner-to-learner interaction (Garrison and Anderson, 1998) and online

learning provides an environment for social constructivist learning (Bonk and Cunningham, 1998). An example is Moodle, an online platform based on a socio-constructivist learning approach (Klemm, 2010). In a study examining the effects of social constructivist approaches on learning and understanding in computer-supported collaborative learning, a positive relationship was found between social constructivist approaches and effective learning, and effective teachers developed different ways of adapting constructivist approaches during their teaching (Chan, 1996). Learning is viewed as the modelling of the processes of interpreting and constructing meaning and such models of knowledge acquisition can be created in the form of computer programmes (Newell, 1990). Computer tutor systems can be developed based on the view that learning is achieving understanding through the constructivist perspective (Mayers and De Freitas, 2004).

Other than social constructivist theories, blended learning has been associated with other theories, although not very frequently. It has been associated with behaviourism since computer-aided learning is the presentation of a problem (stimulus) followed by the learner's contribution of the solution (response), and feedback from the system providing the reinforcement (Naismith, Lonsdale, Vavoula, and Sharples, 2005). As well, computer adaptive testing can help to test students' ability levels and direct them to the appropriate course content for study (Kandan, 2011). Interactive quizzes in online environments can help students to practise repeatedly with instant feedback and their observable behaviours have been found to have been changed by an online learning environment (Yuen et al., 2011). As well as behaviourism, experiential learning theory is also related to blended learning (Baasanjav, 2013; Beard, Wilson and McCarter, 2007). For example, the

development of learning platforms needs to be informed both by an understanding of how adults learn through experiential learning and also how they interact with new technology (Bach, Haynes and Smith, 2007).

Of all the theories reviewed, social constructivist theories play the core role in blended learning. Therefore, a theoretical framework from a socio-constructivist viewpoint was used to guide this research. The review and decisions about the use of the theoretical framework are described in Section 2.3.9.

2.3 Students' Experiences in Blended Learning in Higher Education

2.3.1 Learning Experiences in Blended Learning

Learning is the 'learner's experience and interaction with the world' (Driscoll, 2000, p.11). Actively engaged learners are best supported by deep and meaningful learning experiences (Kuh, Kinzie, Schuh, Whitt and Associates, 2005). According to Garrison and Vaughan (2008), the core of the interest in blended learning is to provide more engaged learning experiences. Integrated blended learning, rather than an assembly of unrelated, disconnected, and fragmented learning activities, can ensure good learning experiences (Tu and Corry, 2003). Besides face-to-face classroom learning, the online content derived outside the formal classroom and the online environment allows students to have new experience in learning (Huang and Shi, 2008). Student experiences of blended learning are influenced by collaborative learning, interaction, autonomous learning, motivation, instruction and barriers (Huang and Shi, 2008; Klemm and Snell, 1996; Najjar, 2011; Sikora and Carroll, 2002; Sitzmann, Ely, Bell and Bauer, 2010; Ting

and Chao, 2013). How these issues affect and influence the blended learning experience is reviewed in Section 2.3.2 to 2.3.7.

2.3.2   Collaborative Learning in Blended Learning

Collaboration is not a new concept in blended learning, as it is grounded in social constructivist theories supporting the idea that students can perform at higher intellectual levels in collaborative situations (Vygotsky, 1978). Collaborative learning experiences help higher-order learning outcomes to be achieved (Palloff and Pratt, 2005).

In higher education, collaborative learning has a role at both undergraduate and postgraduate levels (Elgort, Smith and Toland, 2008). The basis of collaborative learning is that knowledge is constructed and transformed by students (Dooly, 2008). Collaborative learning is the way in which individuals work closely together towards a common goal, adopting expertise and experiences and emphasising co-creation and contributions from each member of the group (Gokhale, 1995). Collaboration enhances and promotes learning, which is an important factor in academic achievement, personal development and student satisfaction (Barkley, Cross and Major, 2005). Collaborative learning occurs when small groups of students help each other to learn (Klemm, 1994). Under these circumstances, the collaboration is carried out in a coordinated and synchronous way through mutual efforts in problem solving, value creation and skill set leverage by all participants (Douglas, 1991; Roschelle and Teasley, 1995). In this research, collaborative learning is one of the focuses, as students have the opportunity to interact sometimes without the teacher's instruction in the online learning environment.

2.3.3 Online Collaborative Learning in Blended Learning

As reviewed in Section 2.2.3, social constructivist theories play the core role in blended learning. In the context of online collaborative learning, social constructivism is also considered as a theoretical foundation for technology and social studies integration; learning occurs in the networked environment, the mediation of technology facilitates learner-to-learner interaction (Garrison and Anderson, 1998) and online learning provides an environment for social constructivist learning (Bonk and Cunningham, 1998). A study using computer-mediated communication (CMC) as a means of small-group and large-group communication in a distance learning programme found that Vygotsky's theory was applicable in online communication (Stacey, 1999). Stacey described the way that CMC provides an environment for the social construction of knowledge through collaborative learning, and explicitly stated that 'the notion of construction of knowledge in a group context, which is derived from the work of Vygotsky (1978) and neo-Vygotskian researchers, could provide a framework for understanding how the study's participants learned' (Stacey, 1999, p.31). Computer-Supported Collaborative Learning (CSCL) facilitates the sharing and construction of knowledge using technology or through the Internet (Stahl, Koschmann and Suthers, 2006). It uses technology to control and monitor interactions, regulate tasks, rules and roles, and mediate new knowledge acquisition (Pozzi and Persico, 2011).

In a blended learning environment, it is important to coordinate traditional and online modes of communication to support collaboration (So and Bonk, 2010). In some social constructivists' viewpoints, online learning is about using technology to communicate

ideas and to encourage learning and sharing (Pop, 2012) and online tools have increased the communication and interaction between students and students, and students and teachers (Cheung, Lam and Yau, 2009; Kim, Bonk and Zeng, 2005). For example, Moodle is an online platform based on a socio-constructivist learning approach and offers a number of interactions and tools for collaboration and exploration learning (Klemm, 2010). The synchronous and asynchronous features in the online platform and online classroom play an important role in teaching and learning as they enhance the flexibility and convenience of the courses (Chuah, 2007; Mason and Rennie, 2006; Valenzeno, Alibali and Klatzky, 2003; Valuisky, 2005; Wilson, Ludwig-Hardman, Thornam and Dunlap, 2004; Winegarden, 2005). In a study of classroom innovation, a collaborative knowledge forum was built for students' implementation of social learning (Chan, 2009). The research showed that through learning and sharing with each other, the students could build knowledge by learning from others. In a study of the use of mobile tools for students' learning, social learning spaces were set up in both in-class formal learning and out-of-class informal settings (Wong and Looi, 2010). Group learning is a powerful educational experience and computer-mediated group learning was noted to be enhanced by coupling constructivism with collaborative learning (Palloff and Pratt, 2005). Teachers were found to also use media forums to assess students' work and also set tasks that specifically measure students' interactions and co-operative skills (Agosto, Copeland and Zach, 2013).

Online learning via social media tools has received attention from researchers recently and the new concept of online learning 2.0 is defined as the adoption of social media in learning or education (Safran, Helic and Gutl, 2007). Students are encouraged to learn

together in different ways in the blended learning environment using social networking tools (Shiu, Fong and Lam, 2010). With social media, people create and exchange information and ideas on the Web (Kaplan and Haenlein, 2010). In an adoption of the social networking tool in a blended learning course, students have been found to learn from others and gain insights into their own learning curves (Lee, Fong and Chan, 2011). A study of collaborative learning using social media showed that more introverted students perceived social media as more helpful for increasing their collaborative learning performances and self-confidence (Voorn and Kommers, 2013). Another study on the use of WhatsApp mobile social learning with structural teacher-guidance showed positive impacts on students' achievements and attitudes when compared to students learning in face-to-face modes (Amry, 2014). Mobile-assisted classroom-based tools are used to facilitate the students' online social learning in-class and out-of-class, and social learning activities supported by the mobile devices can facilitate students' learning; these devices can be the students' personal 'learning hubs' to enhance formal and informal learning spaces (Agosto, Copeland and Zach, 2013).

However, it has been found that higher education institutions are still primarily relying on the traditional Learning Management System (LMS) and do not capitalise fully on the potential of social media for enabling participation in global learning networks, collaboration and social networking (Li, Helou and Gillet, 2012). Social media places the control of learning into the learners' hands (Li, Ullrich, Helou and Gillet, 2010; McLoughlin and Lee, 2010). With the control of learning shifted to the learners' hands, the use of social media extends the social dimension of learner autonomy. In Section

2.3.4, autonomous learning in blended learning and its relationship to the social dimension are reviewed.

2.3.4   Autonomous Learning in Blended Learning

Blended learning has increased the potential of self-learning (Rager, 2003) and online learning moves the roles from teachers to students so that learning is controlled by the learners (Chow and Cheung, 2008). Blended learning, which focuses on active learning in which the learner acts as both a knowledge consumer and a knowledge creator, is applied for promoting greater autonomy for learners (Grigoriadou, Papanikolaou, Magoulas and Kornilakis, 2001). Active roles of online learners can contribute to knowledge construction in blended learning environments (Shea and Bidjerano, 2010).

Learner autonomy is an important factor in online education (Jung, 2001). Autonomous learning was first defined by Holec as the learners' ability to take charge of their own learning (Macaskill and Denovan, 2013; Xhaferi and Xhaferi, 2011). It has often been associated with 'independence of thought, individualised division making, and critical intelligence' (Hiemstra, 1999, p.12). In blended learning, students have high levels of autonomy (Cheung, Lam, Lau and Shim, 2010). The autonomous learners are involved actively in the learning process by setting personal goals, planning and executing tasks, and reviewing their progress (Little, 1996). In addition, an autonomous learner shows resourcefulness, initiative, and persistence in his or her self-directed learning activity (Ponton and Rhea, 2006).

Autonomous learning is a competing concept that is often interchangeable with and similar to self-directed learning (Hiemstra, 1999). Self-directed learning is a key in

enabling successful blended learning (Greener, 2008). Knowles defined self-directed learning as 'a process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material learning resources, choosing and implementing appropriate learning strategies, and evaluating learning outcomes' (Knowles, 1975, p.18). Hiemstra (1999) conducted an extensive review of the definitions of self-directed learning and defined it as 'a term recognising both external factors that facilitate a learner taking primary responsibility, and internal factors that predispose an adult accepting responsibility for learning-related thoughts and actions' (1999, p.14). The role of individual responsibility and the drive in the learning process are the key elements in self-directed learning.

In many universities which offer a range of online learning options, most of the online learning serves as learning options in which students can direct their learning (Bowen and Lack, 2013) and students can select their preferred blended options (Duhaney, 2012). Some higher education institutes use multimedia and Internet technologies to improve the traditional face-to-face teaching, and such teaching methods allow for teaching without limitations of time and space so that students can be self-directed in their learning (Wang, 2010). The use of multimedia and online technologies allows teaching without physical limitations and students to become self-directed in learning (Wang, 2010). The processes of interacting, participating and absorbing information in blended learning are linked to the enhanced development of critical thinking skills (Coles, 2009) and learning critical thinking is important for self-directed learning in adult learning (Brookfield, 1987). In self-directed learning, students exercise more control over their own time and learning

and the process of self-management not only helps their study but also helps them to develop the skills necessary for their future workplaces (Garner and Oke, 2013).

In the self-directed learning environment, the teacher's role should be as a facilitator for guiding students to learn and, sometimes, self-directed adult learners do not need teachers (Huang and Shi, 2008). Without the teacher, the student's self-knowledge is important for autonomy in self-directed learning (Merriam, 2001). If the levels of learner autonomy are low, learners may not have quality learning during communication in the online learning environment as they may not learn from others (Kop, 2011). Since there was less teacher presence in self-directed learning in the online environment, the levels of learner engagement may be related to the connections among learners (Richter, 2013).

Although the terms 'autonomous learning' and 'self-directed learning' relate to the meaning of independence, learning autonomy is not socially isolated but rather is socially mediated (Murray, 2014). However, most teachers are uncertain about the role of the social dimension in learning autonomy (Borg, 2012). As social beings, students' independence is always balanced by dependence (Little, 1991) and, therefore, learning autonomy has an individual as well as a social dimension (Sinclair, 2000). Working autonomously can include both independent and social dimensions. The social dimension of learner autonomy supports the distinction between working independently and working autonomously. The development of learning autonomy is the result of interaction between social and reflective processes from the social constructivist's view (Little, 2003). The links between autonomy, motivation and community are from the

social constructivist perspectives (Murphy, 2014). The social dimension is linked not only with learning autonomy, but also with motivation.

2.3.5 Motivation in Blended Learning

Academic motivation is the 'enjoyment of the school learning characterized by a mastery orientation; curiosity; persistence; task-endogeny; and the learning of challenging, difficult, and novel tasks' (Gottfried, 1990, p.525). Motivation is an important variable in successful distance learner autonomy (Lynch and Dembo, 2004) and it determines the specific goals toward which learners strive (Maehr and Meyer, 1997). Learning by motivation makes a learner put effort into learning activities in order to reach the learning goal (Zimmerman, 1989). It has been found that students' motivation can be increased through the use of blended learning (Gagnon, Gagnon, Desmartis, and Njoya, 2013).

Self-motivation is central to most blended learning successes (Ting and Chao, 2013). Self-driven learners have been found to have intrinsic motivation (Lee, 1996). Intrinsic motivation refers to 'doing something because it is inherently interesting or enjoyable' (Ryan and Deci, 2000, p. 55). Intrinsic motivation is the intrinsic need to build up competence in dealing with the environment. Sucaromana (2013) conducted a study to compare the intrinsic motivation of the students in learning English in traditional and blended learning environments. The comparison of pre-test and post-test intrinsic motivation showed that the students had significantly higher levels of intrinsic motivation for learning after they were taught by blended learning.

Important factors that influence learners' motivation in blended learning environments are the features and usability of the learning systems (Schober and Keller, 2012).

Motivation in blended learning relates to learning flexibility, online learning, study management, technology, online interaction, and classroom learning (Tang and Chaw, 2013). For example, online learning via games in the systems consisting of components of curiosity, imagination, adventure, challenge, competition and synchronization, which are the factors for motivating students to learn, and teaching via online games offer great learning motivation to students (Siu and Wu, 2003).

More motivated input and also engagement are required in a more student-orientated online environment (Coles, 2009). Success in engaging and retaining learners is also important (Bach, Haynes and Smith, 2007). Group learning can be effective, as knowing that one's participation is essential for the whole group can be a powerful motivational factor (Kohn, 1986). Biggs and Watkins (1995) proposed improving teaching by minimizing surface approaches and encouraging deep ones, which can be achieved by establishing a good knowledge base, ensuring intrinsic motivation with valued tasks and expectations of success, having interactions with others, and doing learning activities.

Biggs (1996) notes that students learn in the classroom of they are motivated and have high expectations. Atkinson (1974) describes achievement motivation as students knowing they will be evaluated on their performance, knowing the evaluation results, and seeing themselves as responsible for the outcome. A positive overall learning environment is associated with better learning outcomes and a higher level of satisfaction (Seng and Ling, 2013). Technology increases the ease of access to information and increased expectations of achievement in the online environment (Mlitwa, 2007).

2.3.6   Instruction in Blended Learning

Instruction in blended learning is important as learning experiences of the students are affected by the teachers' choices of course delivery and course material sharing (Duhaney, 2012). In blended learning, teaching design with the teacher's presence online can facilitate interaction with the students (Wilson and Stacey, 2003). For example, social computing applications are important for the teachers to facilitate students' learning (Li and Li, 2010) as the students can have online collaborative learning using social media tools (Voorn and Kommers, 2013).

Instructional strategies are significant in knowledge construction via leadership, coaching and independent learning (Vygotsky, 1978). By choosing tasks and managing Socratic dialogue by the instructors, students could work together on tasks and to develop across the curriculum in social learning with instruction (Vygotsky, 1962). The role of the instructor in supporting group interaction and collaboration can be either content-oriented or process-oriented; these use different approaches to aid an interaction among participants (Strijbos, 2004).

A major factor leading to unsatisfactory blended learning experiences is the ineffective use of instructional design (Sikora and Carroll, 2002), and unsuccessful task implementation can result from a lack of alignment between learning tasks and students' prior knowledge, interests and motivation (Bennett and Desforges, 1988). As a result, a pedagogy-driven approach has been proposed to replace the technology-driven approach when using the online learning environment to enhance teaching and learning effectiveness (Cheung, Lam, Im and Szeto, 2008). Pedagogy, like outcome-based

learning, is adopted in blended learning and the LMSs are used to track the learning progresses and outcomes (Mong, Chan and Chan, 2007; Najjar, 2011).

Biggs (2003) proposed constructive alignment in learning and in teaching. This means that activities are designed according to the objectives and assessments carried to measure the extent to which the objectives are fulfilled. In the constructive alignment theory, 'constructive' is derived from constructive learning theory and 'alignment' is derived from the instructional design literature (Biggs, 1996). Biggs and Tang (2007) further studied teaching for quality learning at university level and stated that the upsurge of interest in constructive alignment is paralleled by that in outcomes-based education. They used constructive alignment in outcome-based teaching and learning by aligning assessment tasks with teaching and learning activities and intended learning outcomes. The Education Bureau, Hong Kong Council for Accreditation of Academic and Vocational Qualifications and Joint Quality Review Committee advised higher education institutes to adopt outcome-based teaching and learning in providing sub-degree course (EDB, HKCAAVQ and JQRC, 2009) and HKU SPACE (2011a) adopted this in the development of blended learning courses. Constructive alignment was adopted in the blended learning course of this research to ensure that the students would have satisfactory experiences with the effective use of instructional design.

2.3.7   Difficulties in Blended Learning

Technological barriers present the risk in blended collaborative learning that the teacher and students may have difficulties to learn using technology (Koschmann, 1996). Technical difficulties influence the amount that learners learn (Sitzmann, Ely, Bell and

Bauer, 2010). In blended learning, students usually have difficulties, and the provision of effective support is a method to improve learning performance and to increase student retention (Le, Huang, Zhow and Li, 2010). As well, some teachers are reluctant to use platforms with which they are not familiar or that change the way they have traditionally been taught (Vaughan, 2007). It is difficult and time-consuming for teachers to pick up new technologies, as there is an age constraint when using blended learning with the fast-changing technology (Chew and Jones, 2010). For tracking students' online learning time, there might be inaccuracy as sometimes the students had logged in to the LMS but was not learning in the platform (Dehnavi, Sharafi and Nematbakhsh, 2011).

Learner isolation and loneliness are the major problems of independent learning. Evans and Nation (1989) criticized independent learning as it separates teachers and students. Some aspects of communication, such as body language and facial expression, cannot be read in online communication (Johnson and Marsh, 2013). The problem can be lessened by using video conferencing in virtual classrooms, as this not only satisfies learners' social needs but also promotes more naturalistic and interactive learning experiences which allow them to communicate with instructors with voice tone and facial expressions (Hara, Bonk and Angeli, 2000).

The difficulty in moving from purely traditional to blended learning involves changing the mind set and attitudes across the entire institution (Bowen and Lack, 2013). In blended learning, students expect their teachers to provide instant support to them online (O'Connor, Mortimer, and Bond, 2011) and they also expect a high level of teaching support during the entire course of study (Seng and Ling, 2013), which leads to high

teaching workloads. On the other hand, teachers expect technical support to help their online teaching (Raman and Don, 2013), which induces higher demands for technical support, and the associated cost. As a result, the teaching and technical costs may rise but, still, many institutions expect blended learning to be a cost-effective option (Tawil, Ismail, Asshaari, Othman, Zaharim and Bahaludin, 2013). But this seems to conflict with the fact that students in higher education expect to have reduced course fees as face-to-face teaching hours are reduced (Griffin, 2008).

2.3.8 Research Questions Developed from the Reviews

From the reviews of literature on blended learning experiences, it is evident that these experiences are related closely to collaborative learning, autonomous learning, motivation, instruction and difficulties. For this study, it was of interest to know if the sub-degree students had similar or different blended learning experiences as other higher education learners. To understand how these students learn in the blended learning environment, it was necessary to find out how they learn through the activities and how traditional learning and online learning are linked. As a result, the first research question and its 2 sub-questions are asked.

> RQ1. How do students learn in a blended learning environment?
>
> SRQ1. How do students learn through the learning activities?
>
> SRQ2. How are traditional learning and online learning linked?

It was established from the literature review in Section 2.3.2 and 2.3.3 that students engage in collaborative learning. This study considered the importance to know why students engage in the blended learning course. This question could be answered by

finding out what form engagement takes within the blended study and how collaboration facilitates their studies. The second research question and its 2 sub-question are asked.

RQ2. Why do students engage in a blended learning course?

SRQ3. What form does engagement take within the blended study?

SRQ4. How does collaboration facilitate students' study in blended learning?

As well, there were different views on the instruction in the blended learning environment as reviewed in Section 2.3.6. Furthermore, difficulties such as technical barriers and isolation problems reviewed in Section 2.3.7 in blended learning affected the learning experience. Hence, it was also of interest to know how these external factors influence student engagement in blended learning. In addition to asking questions about how teacher engagement affects students' learning and what their learning barriers are, this study aimed to explore other factors that influence the form of student engagement. Therefore, the third research questions and its 3 sub-questions are asked. These factors are classified as external factors because they are not always happened during learning engagement.

RQ3. How do external factors influence student engagement in blended learning?

SRQ5. How does teacher engagement affect students in blended learning?

SRQ6. What are the barriers for students in blended learning?

SRQ7. How do other factors influence the form of student engagement in blended learning?

It was important to integrate the theoretical concepts this research in order to understand the students' experiences and to answer the research questions. In Section 2.4, the

theoretical framework in this research is introduced. In the discussion in Chapter 5, a holistic model is proposed by extending the existing one for the successful design and implementation of blended learning in higher education institutions.

2.4 Theoretical Framework

In educational research, a theoretical framework is the 'integration of the theoretical concepts that apply to the problem under investigation' (Egbert and Sanden 2014, p.60). Based on the reviewed literature, the theoretical framework of this study was framed by the learning experience of blended learning, with a focus on engagement, interaction and instruction. Although blended learning itself does not have a conceptual framework (Kerres and Witt, 2003), a number of frameworks and models have been proposed in relation to blended learning. For example, Khan's the Octagonal Framework (2005), Mishra and Koehler's TPACK framework (2006), Huang, Ma and Zhang's blended learning curriculum model (2008), Picciano's multimodal model (2009) and Puentedura's SMAR model (2013). In relation to the MA blended learning course project, as introduced in Chapter 1, the project team and I proposed a blended learning course development model (Lam et al., 2011) for improving teaching and learning effectiveness. In addition, while reviewing the literature for this research, I proposed a TIPS model of blended learning (Lam, 2014) to address the blended learning context in technological, institutional, pedagogical and strategic perspectives as a guide for developers to consider blended learning issues from a holistic viewpoint.

From the review of theoretical bases in Section 2.3.3, it is known that social constructivist theories are associated closely with blended learning. The Community of Inquiry (CoI) model, based on Dewey's social constructivist theory, was evaluated by Garrison, Anderson and Archer (2001) and proposed as a framework for blended learning from a socio-constructivist perspective (Garrison and Vaughan, 2008). Dewey (1959) perceived educational inquiry as a process to investigate problems and issues by focusing on intended goals and learning outcomes. The CoI model indicates that virtual communities are dynamic with cognitive, teaching and social presence (Garth-James and Hollis, 2014). Garrison and Vaughan (2008) shaped the practice of blended learning by describing the CoI framework as a unifying process that 'integrates the essential processes of personal reflection and collaboration in order to construct meaning, confirm understanding, and achieve higher-order learning outcomes' (2008, p.29). The CoI model as shown in Figure 6 is a framework for the use of computer-mediated communication in supporting the educational experience. It is 'the ideal and heart of a higher education experience' which 'provides the roadmap for the integration of face-to-face and online learning activities' (Garrison and Vaughan, 2008, p.xi) and it was considered to be a suitable framework for my study.

Community of Inquiry

Social Presence

Supporting Discourse

Cognitive Presence

EDUCATIONAL EXPERIENCE

Setting Climate

Selecting Content

Teaching Presence (Structure/Process)

Communication medium
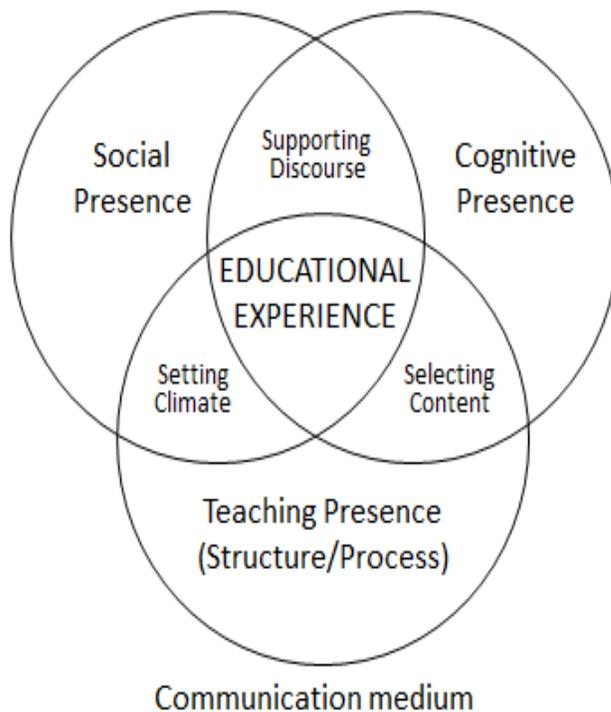
Figure 6 Community of Inquiry (adapted from Garrison, Anderson and Archer, 2001)

The CoI contains three elements, social presence, cognitive presence and teaching presence, which are required in a collaborative constructivist learning environment (Garrison, Anderson and Archer, 2001). These elements were defined in the literature and Garrison, Anderson and Archer integrated them to reflect their presence and relationships to each other in blended learning. Social presence is 'the ability of participants to identify with the community, communicate purposefully in a trusting environment, and develop inter-personal relationships by way of projecting their individual personalities' (Garrison, 2009, p.352). Teaching presence is 'the design, facilitation, and direction of cognitive and social processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes' (Anderson, Rourke, Garrison, and Archer, 2001, p.5).

Cognitive presence is 'the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse' (Garrison, Anderson, and Archer, 2001, p.5).

Garrison (2007) further elaborated on the categories and indicators of the elements of CoI. According to Garrison, social presence is 'the ability to project one's self and establish personal and purposeful relationships' (Garrison, 2007, p.63). It has three aspects, effective communication, open communication and group cohesion, which create conditions for inquiry, interaction and collaboration. Cognitive presence is 'the exploration, construction, resolution and confirmation of understanding through collaboration and reflection in a community of inquiry' (Garrison, 2007, p.65), whereby learning is an inquiry process that moves progressively through triggering events, exploration, integration and resolution. The teacher's presence is involves design and organisation, facilitating discourse, and direct instruction, which is required for shifting social presence to cognitive presence. Table 3 contains the elements, categories and indicators of CoI, as explained by Garrison.

Table 3 Elements, Categories and Indicators of CoI (Adapted from Garrison, 2007)

Elements	Categories	Indicators
Social Presence	Effective Expression Open Communication Group Cohesion	Emotions Risk-free Expression Encourage Collaboration
Cognitive Presence	Triggering Event Exploration Integration Resolution	Sense of Puzzlement Information Exchange Connecting Ideas Applying New Ideas
Teaching Presence	Design & Organization Facilitating Discourse Direct Instruction	Setting Curriculum & Methods Sharing Personal Meaning Focusing Discussion

Garrison (2007) stressed the importance of design, facilitation and direction in instruction. He stated that 'interaction and discourse play a key role in higher-order learning but not without structure (design) and leadership (facilitation and direction)' (2007, p.67). He further quoted Murphy's statement to explain the significance of explicit strategies or techniques for the collaborative processes: 'In order for the highest-level collaborative processes to occur within an OAD (online asynchronous discussion), there must be explicit strategies or techniques aimed at promoting these processes' (Murphy, 2004, p.429 cited in Garrison, 2007, p.67).

The CoI framework has been popular in blended learning. However, Shea and Bidjerano (2010) examined the framework and suggested enhancing it by articulating the role of the learner. In their study, a positive relationship between CoI elements and 'learning presence', which represents self-efficacy and online learner self-regulation, was found to exist. Annand (2011) argued that the effects of individual learner attributes are not reflected in the CoI and, therefore, 'subcategories of social and teaching presences as currently classified in the CoI framework need to be revamped and analysis adjusted to separate those processes that support explicitly group-based activities versus individual learning activities' (Annand, 2011). In responding to this critique, Garrison (2012) pointed out that independent study is an objectivist paradigm but that CoI is from a constructivist paradigm.

The debate on the new element is still continued in the literature. After the response from Garrison, Shea, Hayes, Uzuner, Vickers, Bidjerano, GozzaCohen, Jian, Pickett, Wilde and Tseng (2013) conducted a study using quantitative content analysis and social

network analysis, and found that students with better self-regulation and co-regulation (learning presence) took up more advantageous positions in the group. Richter (2013) also emphasised that the presence of the learner is important since there is less teacher presence in self-directed learning in the online environment and high levels of engagement may be related to the presence and connections among learners. Furthermore, Lam (2015) studied the use of social media tools in non-prescribed online collaboration and suggested that an element of the individual's independence or autonomy should be included in the CoI.

In the review of autonomous learning in Section 2.3.4, the social dimension of learning autonomy is described as important in blended learning. However, in the CoI framework, teaching presence is required in the learning community. The potential link of autonomous learning to the learning community would therefore be of interest to research within my research.

Starting the study with a theoretical framework encompasses the danger that 'it can lead to a false consensus - making the data fit the framework - or failing to see the unexpected' (Simons, 2009, p.33). In my study, I aimed at exploring some new issues and, therefore, this theoretical framework was only used as a guide in my study. I attempted to identify new issues beyond the framework. Guided by the CoI, I attempted to investigate the research problem and identify new issues to contribute to the literature. In completing the data analysis, I used thematic analysis to categorise the data into themes and this is reported in Chapter 4. Then, I analysed the results from the CoI perspectives and this is

reported in Chapter 5. New issues relating to the link of autonomous learning and the learning community were investigated.

2.5   Contribution to the field

This study attempted to fill the research gap by understanding the learning experiences of sub-degree undergraduate students and exploring new issues in a blended Accounting course in Hong Kong. From the literature review, the gap between the social dimension of autonomous learning and the learning community in the CoI framework, explained in Section 2.4, also had to be investigated.

Several blended learning studies have been conducted in Hong Kong, especially at degree-level education, by the higher education institutes. These studies have covered a wide range of blended learning issues in Hong Kong, including collaborative and self-study learning, the role of the instructional designer, the link between online learning and instructor-led teaching, the adoption of LMS, the use of outcome-based approaches, learning construction in the learning process, and the effectiveness of blended learning (Keppell, 2007; Lee and Chong, 2008; Leung, 2012; Tang, 1996; Tsui, Chan, Tian, Li and Ho, 2013; Wang, 2010; Yeh, 2013). For sub-degree level, only limited studies, like students' perceptions of adopting blended learning, appear in the literature (Chan and Chan, 2010; Ng and Tsoi, 2008). Learning experiences in sub-degree students are very significant, especially because the rapid increase in their numbers has generated potential difficulties. Examinations of students' learning experiences can reflect the learning quality and may lead to an indication of directions for professional development (Chan and Chan, 2010). Hence, it was considered important for this study to understand the

learning experiences of Hong Kong sub-degree undergraduates in a blended learning environment.

The issues related to Hong Kong students' experiences in a blended learning environment were explored in this research. Hong Kong learners have been found to be driven by intrinsic motivation and the mastery of goal orientation (Watkins, 2009). The main force driving Hong Kong adult learners has been noted to be intrinsic motivation for self-development rather than rewards in monetary terms (Chan and Holford, 1994). A study of the process of learning, which considered learning as both cognitive and motivational processes, found students could have deep learning with motivational context, learner activity and interaction (Biggs and Moore, 1993). In Hong Kong, a study of collaborative learning found that collaborative learning had positive effects on learning for Hong Kong students (Tang, 1996). In addition, the language barrier is a problem in some institutions which do not teach in the students' mother tongues. Hong Kong students who are not confident in their use of English typically adopt surface approaches to learning (Watkins, Biggs and Regmi, 1991). Educational difficulties are caused when many students, and even teachers, have low English language proficiency (Biggs and Watkins, 1995). The cause is that the basic components in the Hong Kong system are in a state of disequilibrium, in that the policy of using English as a medium of instruction does not match with the realities (Biggs and Watkins, 1995). All of these issues, including how and why students learn in a blended mode and the factors influencing blended learning needed to be investigated in relation to the sub-degree blended learning course.

Although this research studied all of these issues further and explored new issues in the selected case in Hong Kong, the results can also help to understand learning experiences of students from other cultures. Studies of Hong Kong students can also help to understand Chinese learners in general. Biggs and Watkins (1995) found that 'evidence from studies conducted in other Chinese cultures, such as Singapore and mainland China, confirmed their belief that our Hong Kong students indeed represent a general 'Chineseness', deriving from the Confucian heritage itself, that allows us to 'understand Chinese learners better, wherever they are in the world' (1995, p.269). Watkins and Biggs (2001) suggested that focusing on enhancing student learning is a matter of choosing a teaching practice that is culturally appropriate and driven by a student-centred theory of teaching and learning. This study aimed to develop an understanding of not only Hong Kong but also Chinese learners in a blended learning environment.

2.6 Chapter Summary

This chapter has reviewed the blended learning literature extensively. This thesis defines blended learning as an 'integration of traditional and online learning experiences'. Based on this definition, the purpose of the research was to understand the students' learning experiences and to explore new issues in blended learning. Learning experiences, in collaborative learning, self-learning, motivation, instruction and barriers aspects, were reviewed in detail. While a number of theories are related to blended learning, social constructivist theories are most commonly associated with blended learning. Using social theories as the theoretical base, collaborative learning is extended to online collaborative learning with the support of new technologies. The theoretical framework used in this

research is the Community of Inquiry (Garrison, Anderson and Archer, 2001). Guided by the CoI, this research attempted to identify new issues and contribute to the literature by exploring the blended learning experiences of Hong Kong students and proposing a holistic model by extending the CoI framework for the successful design and implementation of blended learning in higher education institutions. In Chapter 3, the research methodology is explained.

3   METHODOLOGY

3.1   Introduction

This chapter describes and explains the research approach used in this study. It starts with the research purpose and design. Before the main study, a pilot study was conducted to trial the data-generation process to be used. The design, methods and results of the pilot study are described. To give an overview of the context, the course for study is introduced. Then, the methods of participant selection are explained.

The core sections in this chapter are about the data sources and data collection using various methods, including classroom observations, reflective study logs, online participation observations, student focus group interviews, individual student interviews, individual teacher interviews and an interview with the course leader. The purposes, designs, processes, schedule, and relationship between data sources and research questions are elaborated. After that, the data analysis strategies and method are explained.

During the study, the research title and questions were refined, and the reasons for and processes of this are provided. Finally, the validity and reliability, researcher's role, limitations, and ethical considerations are addressed. The chapter ends with documenting the timetable of the research.

3.2   Purpose of the Research

The purpose of this research was to understand and explore the student experience of a blended learning Accounting course. Based on the literature review, some questions and

sub-questions were generated in relation to understanding and exploring the blended learning experiences. The following research questions (RQs) guided this study.

    1. How do students learn in a blended learning environment?

    2. Why do students engage in a blended learning course?

    3. How do external factors influence student engagement in blended learning?

In the second research question, 'engage' refers to participation and involvement with learning engagement. The question is to find out why the students take part in blended learning in the blended course with learning engagement. To answer this question, it is required to understand what forms does engagement takes within the blended study. From the literature review, it was found that learning engagement in blended learning is highly associated with collaborative learning. Therefore, this research question can also be answered by understanding how collaboration facilitates students' study in this blended learning course.

Blended learning, in the context of this research as defined in Chapter 2, refers to the integration of traditional and online learning experiences. Traditional learning in this study refers to face-to-face contact and after-class learning arises from face-to-face instruction (Derwin, 2008). To understand how students learnt in the blended environment under study, both online and traditional learning had to be explored. Besides, the effects of collaboration and the shift from teaching to learning engagement had to be understood. Furthermore, the barriers to blended learning and the influential factors had to be identified. During the study process, the attempt was made to find out new issues.

To answer the research questions, several sub-questions (SRQs) were asked. Questions 1-2, 3-4 and 5-7 were sub-questions of research questions 1, 2 and 3 respectively.

1. How do students learn through the learning activities? (RQ 1)

2. How are traditional learning and online learning linked? (RQ 1)

3. What form does engagement take within the blended study? (RQ 2)

4. How does collaboration facilitate students' study in blended learning? (RQ 2)

5. How does teacher engagement affect students in blended learning? (RQ 3)

6. What are the barriers for students in blended learning? (RQ3)

7. How do other factors influence the form of student engagement in blended learning? (RQ 3)

Since the study is case specific, 'students' in the RQs and SRQs refer to 'sub-degree students' and 'blended learning' refers to the 'blended learning of the sub-degree Accounting course'.

3.3 Research Design

The purpose of this research was to understand the student experience of a blended learning Accounting course and to explore new issues that emerged. As a key feature in research design, the philosophical stance underlying the methodology in question had to be considered (Carson, Gilmore, Perry and Gronhaug, 2001; Crotty, 1998; Ozanne and Hudson, 1989; Tekin and Kotaman, 2013). This research attempted to understand the reality of student experiences in a blended learning course. In ontology, interpretivism has the goal of 'understanding the complex world of lived experience from the point of

view of those who live it' (Schwandt, 1994, p.118) and therefore interpretivism suited my research purpose of understanding student experience (Simons, 2009).

As qualitative research can contribute to understanding the social realities of learning experiences for those experiencing them (Connole, Smith and Wiseman, 1995), this was considered to be an appropriate approach for this interpretive research. Qualitative research generally has the goal of 'eliciting understanding and meaning, the researcher as primary instrument of data collection and analysis, the use of fieldwork, and inductive orientation to analysis, and findings that are richly descriptive' (Merriam, 1998, p.11) and the deep meaning of student experience can be discovered by using it (Yuen et al., 2011). Qualitative research was, therefore, adopted in this study.

As a strategy of inquiry in qualitative research, case studies allow researchers to explore individuals or organizations (Creswell, 2003; Yin, 2003) and support the deconstruction and the subsequent reconstruction of various phenomena (Baxter and Jack, 2008). A case study is 'an empirical inquiry that investigates a contemporary phenomenon within its real life context' and 'defined by interest in individual cases' (Yin, 2003, p.13,14; Stake, 2003; p.134). Yin (2003) described case study as a preferred strategy when 'how' or 'why' questions are being posed; the investigator has little control over the events, particularly when the focus is on contemporary phenomena within some real-life context. Case study, therefore, was considered appropriate to use in this research to explore the individuals by deeply understanding their experience in a blended learning course.

Case study research can be of great value in teaching and learning (Wellington, 2000) and its use is a powerful means for understanding institutions of higher education as

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socially constructed organizations (Brown, 2008). As the research results will be reported to the School for developing blended learning courses in the future and will be presented in academic conferences, the study can also benefit higher education institutions in enhancing teaching and learning practically.

A number of researchers propose approaches that guide case studies (Baxter and Jack, 2008; Bromley, 1986; Stake 1995; Merriam, 1998; Yin, 2003). As this was an interpretivist study aiming to understand the social realities for those experiencing them, Stake's approach was chosen as he adopted an anti-positivist stance which suited the purpose of this study in flexibly exploring the blended learning experience through an inductive approach without being bounded by theories. In Stake's approach, the underpinning belief is that 'knowledge is constructed', and the constructivist view encourages providing readers with good raw material for their own generalising' (Stake, 1995, p.99, 102). This study's target was having 'generalisation' or 'particularisation' by understanding and exploring students' blended learning experiences through an inductive approach via interpretation. Stake (1995) classified cases into the categories of intrinsic, instrumental and collective. This research began with an intrinsic study at the very beginning as I was 'interested in it, not because by studying it we learn about other cases or about some general problem, but because we need to learn about that particular case' (Stake, 1995, p.3). However, after I started the study, new issues were identified and it then became a situation with 'a research question, a puzzlement, a need for general understanding, and a feeling that we may get insight into the question by studying a particular case' (Stake, 1995, p.3), which should be classified as an instrumental study.

Stake (2003) suggested that the criteria for case study should include easy accessibility, and the participants' willingness should be high. In deciding on the case to study, I considered ease of accessing the participants, and their willingness to participate. The course in this research was offered by the institute for which I have been working for 15 years. As well, I was in the project team during the blended learning development and, therefore, I was familiar with the course. Furthermore, the course leader and teachers accepted my request to meet their students in the classes, to explain and invite them to participate in the research.

To ensure the rationale for choosing the research approach were considered fully, Denscombe's (2003) checklist for the case study approach (Appendix B) was adopted. The nine questions in the checklist were answered: (1) The course was occurring naturally for the students to study; (2) The criteria for selection, as suggested by Stake, were described and justified; (3) The case was a particular instance of the learning in a course; (4) During the literature review, significant features and issues about blended learning were found. Comparisons of the findings of the study and those from the literature review were made in the discussion; (5) The course was a self-contained entity incorporating administration, course design, teaching and learning; (6) The boundary was described as the course within the institute. This implies that the case was a particular one that served for forming generalisations to other cases; (7) Issues from the literature review were listed and later referred to during the research design; (8) Methodological triangulation and data source triangulation were used; (9) The holistic view was constructed, on which the relationships and processes inside the view were focused.

In this research, a case study about the student experience of a blended learning Accounting course was conducted. The case was a single case. The qualitative instrumental single-case study research approach was used to achieve nuanced and in-depth understanding of the relationships in learning experiences of undergraduates in a blended learning course. The research was conducted using the blended learning MA course as described in Chapter 1. This course was developed during 2009 and 2011, and the complete course was provided to students in the 2011/2012 academic year. Prior to the main study, a pilot study was conducted with the 2011/2012 cohort. The main study was conducted with the 2012/2013 cohort. The course commenced on 31 January 2013 and lasted for 12 weeks. There were 4 classes of students and the total number was 160. The unit of analysis of the main study was 2 classes within the 4 classes in the 2012/2013 cohort. There were 2 teachers and 80 students in the 2 selected classes.

3.4 Pilot Study

The purpose of the pilot study was to trial the data-generation process to be used, in particular the use of a learning journal. The unit of analysis was 2 students in 1 class within the 4 classes in the 2011/2012 cohort. Before starting the study, ethical issues were considered. Section 3.13 addresses the ethical issues in detail.

Of the 40 students enrolled in the class, 2 research participants, in the first lesson of the course, were selected randomly to participate. The selected participants were invited to record learning journals weekly throughout their 12-week course. They were asked to record a 3-minute audio journal about their experiences in blended learning every week. To facilitate the recording, these students were asked to use their smart phones to record

the journal in audio format. With this method, the students could record their reflection at any time and any place and then send the file out immediately. In the 12-week course period, messages were sent to remind the students to make the recordings every week. One of the students completed 5 recordings and the other student 9 recordings. The recorded files received each week are listed in Table 4. Since the students were asked to use their mother tongue, Chinese, to take the recording, translation from Chinese to English was done after the data transcription.

Table 4 Audio Journal Recording Submission

Received Recording	1	2	3	4	5	6	7	8	9	10	11	12
From Student A	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	No	No
From Student B	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes

From the journal recordings, the students' learning processes were collected. The students described how blended learning helped their studies. They reflected on what they had learnt and their views on the online activities. The journal recordings were found to be suitable for collecting the students' learning experiences and, therefore, a useful method for data-generation in the research.

However, there were limitations to the pilot study. As this process was not guided, the students reflected that they did not have any idea of what to say during the recording. Furthermore, they found it was too time-consuming to do the audio recording, and they did not want to do it in the later weeks. Although journal recording could provide on-going reflections from the students, it was a one-way communication. I could not obtain more in-depth follow up data. Therefore, modifications were required for the main study.

A number of modifications were proposed to enhance the study. First, the reflection should be guided with questions. Interviews with the students, individually and in focus groups, were designed to collect in-depth data. A daily study log with weekly reflection in two selected weeks was needed to collect more detail about the students' learning experiences. The research design was improved by using multiple research methods. Such method triangulation enables in-depth data collection by having data sources from different methods (Flick, 1992). Part of the data collected from different methods can be used for data source triangulation to ensure the validity and reliability of the research.

3.5 Research Course Context

This research study was conducted in the MA course offered in the 2012/2013 academic year, in the spring semester of 2013, in the Higher Diploma in Business (Accounting) at the Community College, School of Professional and Continuing Education, The University of Hong Kong. The main reason the MA course was chosen was that it had been designed specifically to enhance students' engagement through merging online activities with the traditional activities in the course. Blended learning has been adopted widely in higher education and it is believed that a more positive and cumulative effect in helping students to achieve meaningful learning can be achieved by integrating outcome-based teaching and learning with collaborative web-based learning environments (Lau, Lam and Zhou, 2010). As described in Chapter 1, the programme team designed and developed course activities with different levels of activeness, as described in constructive alignment theory.

With the role on the project board and the project team in the Accounting courses blended learning project, I was involved in the project from planning to delivery. The blended learning courses were developed based on student needs and the development method was based on theories from a literature review. For these reasons, the project was planned to explore students' learning experiences. However, with budget limitations, the project could not support researchers to perform an in-depth student learning experience study. Therefore, I decided to conduct such a study for this project.

3.6 Participant Selection

The participants selected were enrolled in the spring semester of 2013. The total enrolment number was 160. They were allocated into 4 classes. There were 2 teachers (Teacher A and Teacher B) teaching the MA course and each of them taught 2 classes. A class taught by each teacher was selected randomly, and therefore 2 classes (Class A and Class B) were selected. In each of these 2 classes, 15 students were invited to join the research. Of the 30 students invited, 25 agreed to participate; 12 and 13 students were in Class A and Class B respectively. Table 5 lists the overview of the participant selection.

Table 5 Overview of Participant Selection

MA Course	Taught by Teacher A	Taught by Teacher B
Class A	• 15 students were selected randomly • 12 students agreed to join the research	
Class B		• 15 students were selected randomly • 13 students agreed to join the research
Class C	• The class was not selected	
Class D		• The class was not selected
All Classes (160 students)	30 students were selected randomly 25 students in 2 classes joined the research	

3.7 Data Sources and Data Collection

The primary data sources for this study were in-depth individual interviews with students. Field notes from classroom observations, online participation observations, student learning logs and reflections, student focus group interviews, individual teacher interviews and an interview with the course leader were also used to supplement the primary data. Figure 7 provides the data sources used for this study.
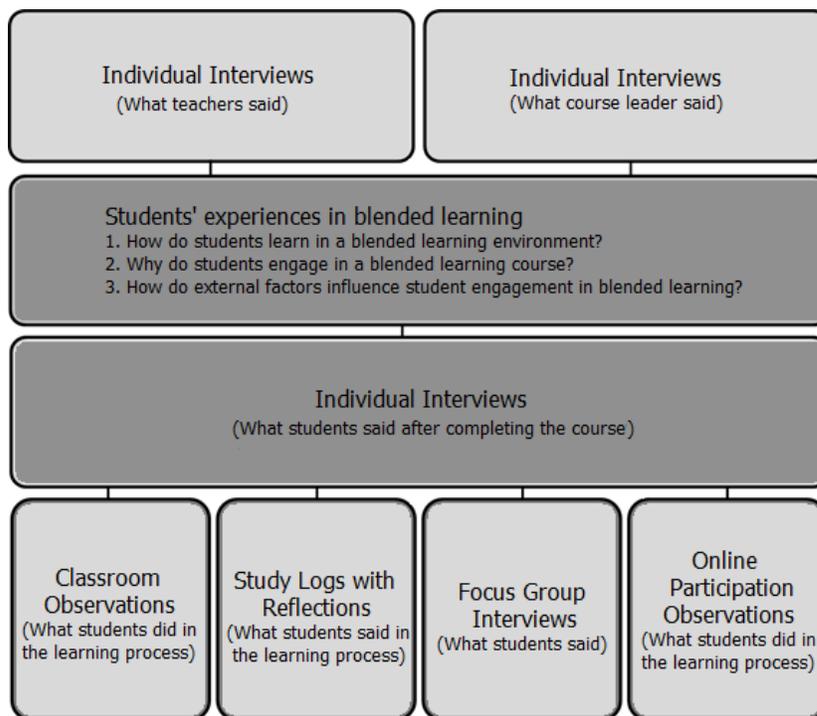
Figure 7 Data Source

For data collection, Yin (2003) suggested six sources of evidence, namely documentation, archival records, interviews, direct observations, participant observation and physical artefacts. Of these, interviews were described as 'essential sources of case study information' (Yin, 2003, p.89). The major source of data in this study was the interviews. Beside interviews, observational evidence is 'often useful in providing additional

information about the topic being studied' (Yin, 2003, p.93). In this study, the observations of the students' learning processes in the blended learning environment were designed carefully. Classroom observations and online participation observations served the purpose of providing additional information about the study. Data on the learning processes included those which happened outside the classroom and outside the online platform; the study logs, with reflections, were designed to record all kinds of learning activities in which the students participated in the selected weeks.

Triangulation can be used to validate the research; the protocols included data source triangulation, investigator triangulation, theory triangulation and method triangulation (Stake, 1995). In this research, method triangulation was used to search for alternative interpretations from different methods for obtaining complete data from different sources (Flick, 1992). For particular issues, data triangulation was used to confirm the meanings and ensure the accuracy. The individual student interviews were conducted as a primary data source. Other fieldwork, including classroom observations, online participation observations, student learning logs and reflections, student focus group interviews, individual teacher interviews and the interview with the course leader were used to supplement the primary data. The issues of triangulation are discussed in Section 3.10.

The data were collected from the commencement of the course. Before the research began, consent was received from the School and the course leader. In the first week of the course, the students' consent was obtained during the classes. The first teacher interviews were conducted in the first week in order to understand their plans and expectations for teaching the classes. In the 2nd to 6th weeks, the first-round classroom

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observations and first-round study logs with the students' reflections were carried out. In the 7th to 11th weeks, the second round observations and second round study logs with students' reflections were completed. An additional observation was conducted in Class A; I was invited by Teacher A to observe this additional class because she had designed it to have no lecture but only group activities. The focus group interviews were conducted immediately after the examination. After that, the students' online participation was observed; 8 students were selected to attend the individual interviews. Finally, the second round of teacher interviews and the course leader's interview were conducted. Table 6 shows an overview of the schedule for the data collection. The data collection processes from the different data sources are summarised in Sections 3.7.1 to 3.7.10.

Table 6 Overview of Schedule for Data Collection

Week	Data Collection	Remarks
1	Obtain consent from students 1st teacher interviews (2 teachers)	
2 - 6	1st classroom observation 1st study logs with reflections (25 students)	
7 - 11	2nd classroom observation 2nd study logs with reflections (25 students)	An additional classroom observation was conducted in Class A as I was invited by Teacher A to observe the additional class.
After examination	Student focus group interviews (24 students) Online participation observations (24 students)	One student did not join the focus group interview and withdrew from participating in the remaining research.
After Semester	Individual student interviews (8 students) 2nd teacher interviews (2 teachers) Course leader interview (1 course leader)	

During the data collection, the elements of CoI were not addressed directly since the terms 'social presence', 'cognitive presence' and 'teaching presence' were too complex to be understood by the participants. Instead, questions on these elements were asked, with a focus on the concepts of collaboration, communication, interaction, understanding,

learning, instruction, teaching support and encouragement from teachers. In order to understand the students' experiences, the questions on how the students learnt in a blended learning environment, why they engaged in a blended learning course and how the external factors influenced their engagement in blended learning' were designed as the research questions. Sub-questions relating to collaboration, learning and instruction, which incorporated the concepts of CoI elements, were also designed.

3.7.1 First Individual Teacher Interviews

As the 'essential sources of case study information' (Yin, 2003, p.89), individual interviews are important data collection methods. Individual interviews should be used if 'small numbers of people are involved, people are assessable, all interviewees are important, anonymity is not an issue, depth of meaning is central, most of the questions are open and the research aims mainly require insight and understanding' (Gillham, 2000, p.11). The individual teacher interviews were designed with the purpose of understanding the teachers' plans, expectations and concerns about teaching the blended learning course. The interviews were designed to be conducted twice. One was scheduled to be conducted at the beginning of the semester and the other one was scheduled to be conducted after completion of the course. The two teachers, Teacher A and Teacher B, who taught the selected Class A and Class B, were interviewed. A semi-structured interview was designed and an interview guide was prepared, as in Appendix C. In the interview guide, 24 open-ended questions in 5 categories were designed as basic questions.

The interviews with both Teacher A and Teacher B were conducted on 8 February 2013 and lasted 90 minutes and 30 minutes respectively. During the interviews, questions were

asked about the teachers' teaching backgrounds, blended learning course design and development, blended learning course delivery, perceptions of blended learning and perceived difficulties. They were also asked to express any ideas or give comments on the blended learning course. In the interviews, Teacher A mentioned that she planned to use blended learning with integrating online activities and face-to-face activities in her class. Conversely, Teacher B mentioned that he planned to use blended learning with online learning as a supplement to face-to-face teaching in his class. The interviews were tape-recorded and transcribed. The transcripts were then translated into English for analysis. The recordings were also listened to by a local expert in blended learning in order to confirm the reliability and validity of the interviews.

3.7.2   Classroom Observations

Observation can provide a wider descriptive framework in multi-method research; the most general use of observation in research is exploratory, as it is in real life (Gillham, 2008). After considering the pros and cons of structured and unstructured observation suggested by Gillham (2008), semi-structured observation was chosen for the classroom observations in this study as it is with 'data largely qualitative, participant observation, data requiring extended presentation, data capable of analysis of meaning in depth, embedded in social context, and behaviour viewed as part of a complex social interaction' (Gilham, 2008, p.4), which is suitable to my study.

The purpose of the classroom observations was to capture teaching and learning actions in snapshots of the MA blended learning course. I attended five 3-hour lessons of the course. During the lesson, I observed the classes and took observation records using the

observation forms designed for the purpose. Six observation forms were used. These forms were an open-ended classroom observation form, students' activities checklist, tracking calling patterns, an observation guide using Bloom's taxonomy, classroom and online learning, and instructional methods and student responses. Some were self-designed and others were those designed by Zepeda (2012) or modifications of these. Table 7 lists the forms; the actual forms can be found in Appendix D.

Table 7 Forms Used in Classroom Observations

Form	Name	Focus	Scope	Target	Source
1	Open-Ended Classroom Observation	Everything that occurs in the classroom	Wide	Teacher & students	Modification of forms from Zepeda (2012)
2	Students' Activities Checklist	Students' Action	Narrow	Students	Modification of forms from Zepeda (2012)
3	Tracking Calling Patterns	Calling and interaction patterns during a class period	Narrow	Students	Direct use of a form from Zepeda (2012)
4	Observation Guide Using Bloom's Taxonomy	Questioning strategies based on the class discussion	Narrow	Students	Direct use of a form from Zepeda (2012)
5	Classroom and Online Learning	Linking classroom and online learning	Narrow	Teacher & students	Self-designed
6	Instructional Methods and Student Responses	Instructional techniques; instructional materials used by the teacher	Narrow	Teacher & students	Modification of forms from Zepeda (2012)

The classroom observations of Class A were conducted on 27 February 2014 and 17 April 2014. In addition to the two scheduled observations, I was invited by Teacher A to observe the class on 6 March 2014 because she wished to show me the complete flow of integrating the online and traditional learning. On 27 February 2014, Teacher A taught a topic and then asked the students to participate in the learning activity 'Thinking Forum' in the online platform. The 'Thinking Forum' required them to view a case in a video and then discuss the questions set by the teacher. In the next lesson, on 6 March 2014,

Teacher A consolidated the students' discussion in the online 'Thinking Forum' and then facilitated them to have a deeper and interactive discussion during the lesson. The classroom observations of Class B were conducted on 28 February 2014 and 11 April 2014. The activities in the 5 lessons of both classes were captured in the forms. The lessons were also recorded in audio format for reference during the data analysis review. The results were used to inform the questions to be set up in the focus group interviews and individual interviews.

3.7.3 Reflective Study Log (Learning Diary)

The purpose of the reflective study logs was to capture the students' learning processes and reflections during their studies in the classroom, in the online platform and outside these two environments. Based on the evaluation of the pilot study, a daily study log and a weekly reflection, named the learning diary, were collected in two selected weeks, one during the first half of the semester and the other during the second half of the semester. Both the reflective study logs were guided with forms and questions. Appendix E shows the sample forms and reflection questions distributed to the students.

The learning diaries were distributed to the 12 students in the lessons on 27 February 2014 and 17 April 2014 for Class A and to the 13 students in the lessons on 28 February 2014 and 11 April 2014 for Class B. A 10-minute briefing was conducted in each of the lessons to introduce the learning diary to the students and answer their questions. They were asked to fill in the form on a daily basis for 7 consecutive days. They were required to fill in time spent on each of the traditional and online learning activities and to share their learning experiences of them. On the seventh day, they had to answer 10 open-

ended questions on the overall learning experience during the week. The learning diaries were collected in the next lesson after the form distribution.

To get more familiar with the students so that they would be more willing to participate in the research, I treated them to a cup of Starbucks coffee. To ensure they remembered to do the learning diary, and to keep a better relationship with them, they were reminded to complete the diaries twice via WhatsApp or Message features of their phones for every round of learning diaries. To facilitate their writing, they could choose to write in either English or Chinese. The data collected in Chinese was translated into English. NVivo 10 was used to identify recurring ideas during the analysis. Also, t-test was used for statistical analysis of the time spent on the traditional and online learning activities of the students in both classes. During the data analysis, it was found that some parts of the forms and some questions had not been answered by the students. As it cannot be assumed that non-response was a random characteristic (Youngman, 1979), the missing data were collected from the students during the session of focus group interviews.

3.7.4 Student Focus Group Interviews

The focus group is particularly useful for exploratory research when comparatively little is known about the phenomenon of interest (Stewart and Shamdasani, 1990). Unlike group interviews which emphasize the interaction between the researcher and participants, focus groups 'rely on interaction within the group based on the topics that are supplied by the researcher' (Morgan, 1997, p.12). In this research, the reason for using focus groups was to have a less directive approach to interviewing, the emphasis could be shifted to the interaction among interviewees and diversified results could be collected. It was expected

that general background information about the students' learning experiences could be collected. Factors affecting their learning in such an environment could be discovered and categorised. New ideas and concepts were identified as well.

The focus group interviews were conducted with the following steps:

Step 1: Drafting of general questions and questions based on the literature review, classroom observations and study logs with reflections.

Step 2: Formulating, refining and finalizing the questions.

Step 3: Selecting interviewees.

Step 4: Conducting focus group interviews.

Step 5: Analysing the focus group interviews.

Step 6: Setting the direction for the next phase of the research.

In the focus group interviews, 38 open-ended questions in 8 categories were asked in each of the groups. These questions related to learning activities, factors affecting students' engagement in online learning, difficulties in online learning, integrated and supplemented blended learning, collaborative learning, the teachers' roles in online learning, and other issues like preferred learning language and ideal mix of learning mode. An interview guide (Appendix F) was prepared to guide the interview process. This guide was reviewed by a local blended learning expert, who suggested that the examples to be used should be based on real study. The interview was piloted with 2 HKU SPACE Community College graduates on 21 May 2013. In the pilot interview, it was identified that the concepts of integrated and supplementary (non-integrated) blended learning, as

defined in Section 2.2.2, needed to be explained to the students. In addition, the figures in the learning diary reflection summary also needed to be explained to the students.

The purposes of the focus group interviews were to collect students' views on the blended learning course, discuss issues identified in previous studies, clarify and complete missing data, discuss students' expectations, discuss their views of integrated and supplemented blended learning, identify factors affecting students' engagement and discuss the teachers' roles. All 25 students who had completed the reflective study logs were invited to join the interviews. They were allocated into 4 groups with 5-7 students in each. The focus group interviews were scheduled during the week after the examination. Each interview was designed to last for about one hour. The students taught by the same teachers were arranged into the same groups. The focus group interviews were conducted in Chinese so that the students could express their views in exact words in their mother tongue. The interviews were tape-recorded.

Four focus group interviews were conducted on 23 May 2013 and 31 May 2013. These 4 interviews lasted for 72, 65, 71 and 46 minutes respectively. The summaries of the focus group interviews are shown in Table 8. In the interviews, one student was absent and therefore only 24 students were interviewed. Before the start of the interviews, the students and I had some informal chats as a warm-up activity. At the beginning of the interview, I welcomed the participants, stated the purpose of the focus group interview, explained that the use of data was for research purpose and that names would not be disclosed, obtained their consent to audio-record the interviews, explained there were no right or wrong answers, explained the terms 'integrated blended learning' and

'supplementary (non-integrated) blended learning' to the participants, encouraged the participants at least to respond once to all questions at the beginning, and encouraged them to express their views freely.

Table 8 Summary of Focus Group Interviews Particulars

	Interview 1 (Class A)	Interview 2 (Class B)	Interview 3 (Class A)	Interview 4 (Class B)
Date & Time	23 May 2013 2:00pm	23 May 2013 4:00pm	31 May 2013 11:30am	31 May 2013 2:30pm
Duration	72 minutes	65 minutes	71 minutes	46 minutes
No. of Interviewees	7	6	6	6

The post-interview work included transcriptions in Chinese, translations from Chinese to English, and reviews of the Chinese audio recordings with English translations. The phrases and patterns that recurred within a group or among groups were identified. The consistency of views and specificity of responses were explored. To ensure the reliability and validity of the interviews, the recordings and translation were reviewed by a local expert in blended learning. The results were used to frame the questions for the individual interviews, which were conducted at a later phase of the research.

Data analysis was carried out using the five steps suggested by Vaughn, Schumm and Sinagub (1996) for analysing focus group interviews data to find out the themes. These five steps are identifying the big ideas, unitizing the data to define categories, categorizing the units, negotiating the categories and identifying themes and using theory to assist in interpreting the categories and findings. From the analysis, some important areas were identified. For example, the students emphasized that good examination results were among the most important reasons for their studies. As well, they strongly requested online teaching support in the online learning environment. Furthermore, they

mentioned the significance of having mobile learning. These newly identified areas were included in the later stage of the research.

3.7.5 Online Participation Observations

The purpose of the online participation observations was to understand the students' participation in the online environment. Since the face-to-face lessons were compulsory and the online course part was optional, their participation online was likely to be varied. After the examination of the course, the following information was collected from the system database: (1) numbers of times individual students logged in, (2) numbers of accesses to each online activity and (3) duration of each access to online activities.

The results of the online participation showed the online learning duration of the students and the variety of learning activities in which they participated. These results were used to find out about the students' online participation in the blended learning course. In addition, the results were used to select students to attend the individual interviews and for this reason, these results are reported here. The students' activeness in online learning was measured by total online learning duration. Total learning duration was the time a student spent in online learning in the whole semester. In the course design, the students were expected to learn via the online system for half an hour every teaching week, and the average total online learning hours for a student should have been 6 hours in a semester. Therefore, active online learners and inactive online learners were defined as students who spent more than 6 hours or less than 6 hours in online learning in the semester respectively. In the online platform, there were 10 learning activities as introduced in Section 1.5.2. Accesses with 1 to 5 types of activities were defined as low

variety and those with 6 to 10 types of activities were defined as high variety. In order to obtain views from the students with different activeness and level of participation, four boundary conditions were defined as shown in Figure 8 for the selection of individual interviewees. This was boundary conditions on a sampling frame, which was not an exemplifying of specific categories.

Boundary Conditions for Sampling

Condition 1
- Willing to spend time to learn in online system
- Mainly participated in activities directed by teacher

Condition 2
- Willing to spend time to learn in online system
- Participated in many activities directed by themselves

Condition 3
- Not spent much time to learn in online system
- Mainly participated in activities directed by teacher

Condition 4
- Not spent time to learn in online system
- Tried to participate in activities but not in depth

Activeness by learning duration (Active / Inactive)

Variety of learning activities participated (Low / High)

Figure 8 Boundary Conditions for Sampling

The students in condition 1 were those who followed the teacher's guidance in participating in assigned activities and were willing to spend time to learn in these particular activities. The students in condition 2 were those who could direct their own learning. They were willing to spend time to learn in the online platform and they participated in many online learning activities. The students in condition 3 were those who did not spend much time in the online platform and just mainly participated in activities assigned by the teachers. The students in condition 4 were those who tried to

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look at different kinds of learning activities but did not spend much time in any of the activities. Table 9 contains the student list for individual interview selection.

Table 9 The 24 Students for Individual Interview Selection

Class	Student Number	Gender	Active/ Inactive	High/ Low Variety	Condition
A	1	F	Inactive	Low	3
A	2	M	Active	High	2
A	3	F	Active	High	2
A	4	M	Active	High	2
A	5	F	Inactive	Low	3
A	6	F	Inactive	Low	3
A	7	M	Active	Low	1
A	8	F	Inactive	High	4
A	9	F	Active	Low	1
A	10	M	Active	High	2
A	11	F	Active	High	2
B	12	M	Inactive	High	4
B	13	M	Inactive	High	4
B	14	F	Active	High	2
B	15	F	Inactive	Low	3
B	16	M	Inactive	Low	3
B	17	M	Inactive	Low	3
B	18	M	Active	Low	1
B	19	F	Inactive	Low	3
B	20	M	Inactive	High	4
B	21	F	Inactive	Low	3
B	22	M	Inactive	Low	3
B	23	M	Active	High	2
B	24	M	Inactive	Low	2

In the course, the weekly 3-hour face-to-face classes were compulsory and therefore the face-to-face learning hours of all the students were identical. On the other hand,

traditional learning was either integrated with or supplemented by online learning. The learning hours and types of content the students accessed were varied, depending on the level of integration of blended learning. In order to select students with a wider range of learning experiences in blended learning, those from different boundary conditions were identified for further exploration through the individual interviews.

3.7.6   Individual Student Interviews

Individual student interviews were the primary data sources for this study. The reason for using individual interviews was to have in-depth understanding of the students' views. As an 'essential source of case study information' (Yin, 2003, p.89), this interview aimed at collecting data to understand the in-depth views of the students in blended learning. The purpose of the individual interviews was to collect the students' views on the course, to understand how they learnt, to discuss issues identified in previous studies, to explore the reasons, ways, motivations, expectations, preferences and difficulties associated with studying the blended learning course, to understand the students' engagement, and to explore how the students' learning experiences could be enhanced further.

The individual were based on the following steps:

Step 1: Drafting of questions based on literature review and previous studies.

Step 2: Formulating, refining and finalizing the questions.

Step 3: Selecting interviewees.

Step 4: Conducting interviews.

Step 5: Analysing the interviews.

Step 6: Writing-up the report.

The process was started by drafting questions based on the literature review and previous results. The questions were formulated, refined and finalised in several rounds. Finally, an interview guide (Appendix G), with 20 questions in 6 categories, was prepared to guide the interview process. The question categories included how the students learnt in blended learning, their engagement in the online learning environment, the importance of the teachers' engagement and management's influence, the online communication, difficulties in blended learning and the students' expectations of blended learning. The guide was reviewed by a local blended learning expert. The interview was tested with 2 HKU SPACE Community College graduates on 13 January 2014.

Of the 24 students who had attended the focus group interview, 8 were selected for the individual interviews. Of these 8, 4 were from Class A and the other 4 were from Class B. During the interviewee selection, the students' total online learning time and the variety of learning activities in which they participated were considered. From the online participation observations, it was found that the activeness and variety in participating in the online activities were varied. In order to interview the students with a wider range of learning experiences in blended learning, which helped to answer the research questions from different angles, those with different levels of online participation were selected. As a result, 2 students were selected from each of the boundary conditions. One male student and one female student were chosen for each of these conditions. If there were more than 1 student in a condition, the selection was made randomly. Based on the selection requirement, Students 4, 5, 7, 9, 13, 14, 20 and 21 were selected. They were renamed as Students A1, A2, A3, A4, B1, B2, B3 and B4, as shown in Table 10, for the further analysis.

Table 10 Students Selected for the Individual Interviews

Class	Selected Student Number	Student Renamed As	Gender	Active/ Inactive	High/ Low Variety	Condition
A	4	Student A1	M	Active	High	2
A	5	Student A2	F	Inactive	Low	3
A	7	Student A3	M	Active	Low	1
A	9	Student A4	F	Active	Low	1
B	13	Student B1	M	Inactive	High	4
B	14	Student B2	F	Active	High	2
B	20	Student B3	M	Inactive	High	4
B	21	Student B4	F	Inactive	Low	3

The 8 interviews were conducted from 16 January 2014 to 7 March 2014. Again we began with some informal chats as a warm-up. The same procedures for introducing the research, obtaining the students' consent, collecting and audio-recording the data, use of the students' mother tongue, explaining the terms 'integrated blended learning' and 'supplementary (non-integrated) blended learning' to the students, and transcription, coding and validation of the data were followed as described in Section 3.7.4.

3.7.7 Second Individual Teacher Interviews

The teacher interviews were designed to be conducted twice: the first one was conducted at the beginning of the semester and the second one was conducted after completion of the course. The purpose of the second round of teacher interviews was to understand why the teachers used a blended learning mode, to understand how they designed, taught, delivered and facilitated their students' learning activities in the blended learning environment, to understand how they encouraged the students' engagement and interactions in the blended learning environment, to understand the advantages of blended

learning from the teachers' experiences, to understand the difficulties with blended learning from the teachers' experiences, to discuss issues identified in previous studies, and to discuss strategies for the enhancement of blended learning effectiveness.

The two teachers, Teacher A and Teacher B, who taught the Class A and Class B were interviewed. The questions were formulated after analysing the results of the individual student interviews. In the interview guide (Appendix H), 30 open-ended questions in 6 categories were designed as basic questions. The categories included the way teachers designed, taught, and facilitated their students' learning using a blended learning mode, the reasons they taught in the blended learning mode, the teachers' encouragement of students' engagement and interactions, the advantages and difficulties of blended learning, issues from previous studies, expectations of blended learning, and strategies used to enhance it.

The interviews were conducted on 6 November 2014 and 14 November 2014 respectively. In the interviews, I welcomed the teachers, stated the purposes of the interviews, explained the use of the data, gained their consent for audio-recording, explained there were no right or wrong answers, encouraged them to express their views freely and discussed the first interview record. During the interviews regarding issues from previous research, the consolidated students' views were shown to the teachers. The durations of the interviews of Teacher A and Teacher B were 90 minutes and 60 minutes respectively.

3.7.8   Course Leader Interview

The course leader interview was aimed at understanding why a blended learning mode had been adopted for the course, how it was designed and administered, how the course

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leader encouraged the teachers' and students' engagement and interactions in the blended learning environment, the advantages of blended learning from the course leader's experience, the difficulties of blended learning from the course leader's experience, and discussing issues identified in the classroom observations, diary reflection, online participation, student and teacher interviews, and strategies for the enhancement of blended learning effectiveness.

The course leader, who had been involved closely in the blended learning course since the planning stage, was selected and interviewed. The questions for this interview were formulated after analysing the results of the individual student and teacher interviews. In the interview guide (Appendix I), 29 open-ended questions in 6 categories were designed as basic questions. The categories of questions included the way the course was planned, designed and delivered, the reasons it was in blended learning mode, the course leader's encouragement of the teachers' and students' engagement and interactions, the advantages and difficulties of blended learning, issues from previous research, expectations of blended learning, and its enhancement. The interview was conducted on 23 February 2015. The consolidated teachers' views and students' views were discussed with the course leader. The duration of the interview was 45 minutes.

3.7.9   Schedule of Data Collection

The data were collected from February 2013 to December 2014. During the semester, in early 2013, the teacher interviews, classroom observations, study logs with reflections collection and student focus group interviews were conducted. After the semester, in mid-2013, the online participation data were generated through the online system. All of the

collected data were analysed and the individual student interviews were designed based on the previous results. The individual student interviews were conducted in early 2014 and the data were analysed in the following half year. Finally, the second-round teacher interviews and course leader interview were designed and conducted in late 2014 to early 2015. The schedule of data collection is shown in Table 11.

Table 11 Schedule of Data Collection

Research Method	Description	Data Collection Date	Action
1st Teacher Interviews	Interview teachers	8 Feb 13	Interviewed Teacher A & Teacher B
1st Classroom Observation	Observe Class A	27 Feb 13	Observed the 3-hour class
1st Classroom Observation	Observe Class B	28 Feb 13	Observed the 3-hour class
Additional Classroom Observation	Observe class of Teacher A (Additional observation, as invited by Teacher A)	6 Mar 13	Observed the 3-hour class
1st Study Logs with Reflections	Collect students' learning diary of Class A	27 Feb 13 - 5 Mar 13	Collected 12 student diaries
1st Study Logs with Reflections	Collect students' learning diary of Class B	28 Feb 13 - 6 Mar 13	Collected 13 student diaries
2nd Classroom Observation	Observe class of Teacher B	11 Apr 13	Observed the 3-hour class
2nd Study Logs with Reflections	Collect students' learning diary of Class B	11 Apr 13 - 17 Apr 13	Collected 13 student diaries
2nd Classroom Observation	Observe class of Teacher A	17 Apr 13	Observed the 3-hour class
2nd Study Logs with Reflections	Collect students' learning diary of Class A	11 Apr 13 - 17 Apr 13	Collected 12 student diaries
Student Focus group Interviews	Interview students	23 May 13 & 31 May 13	Conducted 4 focus group interviews with total 24 students
Online Participation observations	Online learning logs observation	1-31 July 13	Observed the learning time and activities participated in of the 24 interviewed students.
Individual Student Interviews	Interview students	16 Jan 14 - 7 Mar 14	Interviewed 8 students.
2nd Teacher Interviews	Interview teachers	6 Nov 14 & 14 Nov 14	Interviewed Teacher A & Teacher B.
Course leader Interview	Interview course leader	23 Feb 15	Interviewed the course leader

3.7.10 Relationship between Data Sources and Research Questions

The data collected from different sources aimed at answering different aspects of the research questions. The classroom observations, reflective study logs and online participation observations could help to understand how the students studied in the blended learning environment. The students' focus group interviews and individual interviews allowed me to communicate directly with the students and therefore to explore all of the research questions in depth. The teacher and course leader interviews allowed me to explore what they did to encourage their students' engagement and how the students' engagement was influenced. The summary table of the relationship between data sources and research questions is shown in Table 12.

Table 12 Data Sources and Research Questions

Research Questions	Data Sources						
	Study Logs with Reflections	Classroom Observations	Online Participation observations	Student Focus Group Interviews	Individual Student Interviews	Individual Teacher Interviews	Course leader Individual Interview
1. How do students study in a blended learning environment?	✓	✓	✓	✓	✓		
2. Why do students engage in a blended learning course?				✓	✓	✓	✓
3. How do other factors influence student engagement in blended learning?				✓	✓	✓	✓

3.8   Data Analysis

Strategies are vital in case study analysis (Yin, 2003) and there are different strategies and ways to perform data analysis of qualitative research and case study (Creswell, 2007; Stake, 1995; Wolcott, 1994). In this research, the case serves to help understand the phenomena or relationships within it and, as a result, categorical aggregation is appropriate for analysis (Stake, 1995). In categorical aggregation, the collection of instances from the data is used for identifying issues, and patterns are established to look for correspondences between categories (Crewell, 2007). The primary data sources for this study were from the in-depth interviews with students. During the data analysis, I read all of the individual student interviews records several times to become familiar with them. The recurring ideas were identified and illustrative quotations were selected.

Using a computer in qualitative research could facilitate the data management, with the potential to extend the capabilities of qualitative research, and enhance its acceptability and credibility (Fielding and Lee, 1998). Its greatest benefit is when 'the empirical study is trying to derive meaning and insight from the word usage and frequency pattern found in the texts' (Yin, 2003:110). In this research, NVivo 10 was used to facilitate the qualitative research process by enhancing its trustworthiness (Constas 1992; Sinkovics, Penz and Ghauri 2008). NVivo 10 was used for sorting segments of text into categories. Codes were generated and, during coding, the ideas were listed as notes. In this study, thematic analysis (Braun and Clarke, 2006) was used. The initial thematic map, developed thematic map and final thematic map (Braun and Wilkinson, 2003) were drawn. During the data analysis, the notes taken during the coding were referred to. The

strategy for doing the analysis was to list the points found in the sub-themes for writing the story from the listed points. The process, themes, sub-themes, description of the themes, and findings are discussed in Sections 4.1 and 4.2.

3.9 Refinement of Research Title and Questions

In order to have a thorough understanding, the initial research questions may be altered in mid-study and such progressive focusing allows researchers not to be too committed to a plan (Stake, 1995). The merit of progressive focusing, termed by Parlett and Hamilton (1976), is 'a useful concept in an open or emergent design where the most significant issues may not be known in advance' (Simons, 2009, p.33). During the processes of the research, the title and questions were amended twice.

The research was conducted from late 2011 to late 2014. In December 2011, after the preliminary literature review, the provisional title was proposed as 'Factors affecting students' learning in the blended learning environment: A case of a Management Accounting blended learning course in Hong Kong'. At this stage, 3 RQs and 10 SRQs were designed. After analysing the pilot study data and conducting a further literature review after a year in mid-2013, it was found that 'learning experiences' were more appropriate than 'factors affecting learning', hence the title was amended to 'Student experience of blended learning: A case of an Accounting blended learning course in Hong Kong' in October 2013. In addition, it was identified that some of the SRQs overlapped and the design and implementation of the blended learning course had to be studied in depth. Therefore, the RQs and SRQs were reviewed and refined into 4 RQs and 11 SRQs. The study was continued and the individual student interviews were

conducted and analysed in early to mid-2014. During the study, more understandings were explored and the research title, RQs and SRQs were further refined. The refinement process of the RQs and SRQs and the review comments made by my supervisors and me are shown in Appendix J. After the deep review, the research title was finally refined as 'The student experience of a blended learning Accounting course: A case study in Hong Kong' in October 2014. The 3 RQs and 7 SRQs in this study were finalized.

3.10 Validity and Reliability

Merriam (1998) highlighted that research validity and reliability are very important. In this research, some measures were taken to ensure the validity and reliability. The ethical need to confirm the validity of the research processes in case studies can generally be handled by triangulation (Yin, 2003). In this research, triangulation was used to search for alternative interpretations from different methods. In particular issues, data source triangulation was used to confirm the meanings and ensure the accuracy. The in-depth individual student interviews were conducted as a primary data source. Other fieldwork, including classroom observations, online environment observations, students' learning and reflections, focus group student interviews, individual teacher interviews, and the individual course leader interview were used to supplement the primary data.

In addition, all of the interview guides were reviewed by my research supervisors and then by a local expert. During the data collection, all of the interviews and classroom observations were recorded in audio formats. After transcription and translation, the interview records were sent to the interviewees to verify. For the individual course leader, teacher and student interviews, all the records were verified by the relevant interviewees.

For the focus group student interviews, the records were sent to one of the participants in each focus group to verify. Finally, all the audio files, transcription files and translation files were reviewed by a local expert. All these measures were taken to increase the trustworthiness of the study.

3.11 Researcher's Role

The role of the researcher to be the interpreter, and it was of fundamental importance for the interpreter to have a good understanding of the studied content. I have been working in the institute for 15 years in the blended learning unit. One of my major duties of me has been to provide blended learning to the teachers and students. During these years, I have been involved in many blended learning projects. In this project, I had been involved closely in the planning, design, development and delivery process. Besides, being a Bachelor degree graduate of Information Systems and Master's degree graduate of Business Administration, I had previously studied Management Accounting courses, and therefore had a good knowledge of the research course context. Therefore, I was familiar with both the blended learning and the course for the research. Furthermore, I was only involved in the design and development of the course for this research in an earlier stage. I was therefore independent with regard to the implementation of blended learning to the 2012/2013 cohort that was the focus of this research.

3.12 Limitations

The potential limitation of this study was the researcher's bias. I was very familiar with the research project and setting, but this could have brought me a set of assumptions in a

familiar setting. One of my major duties in the School was to help teachers to adopt more online learning in their traditional teaching. The nature of the work might have biased me with a relatively positive perception towards blended learning. To handle the potential limitations, all of the interview questions were reviewed by the research supervisors and a local expert to ensure a lack of bias. Also, I took a reflexive approach by being mindful of this potential for bias in throughout my research and in particular during the analysis and interpretation of the results.

Another limitation was related to the generalisation issue. Sarantakos (2005) argued that a common criticism of case study research is its limitations for generalising. However, a case study could be considered as a 'particularisation', with an emphasis on uniqueness and understanding the case; if a single case study is added to a collection of cases, generalisation claims may be made (Stake, 1995). Stake's case study approach emphasized narrative descriptions and interpretation for creating assertions, and proposed the possibility of making generalisation in so far as 'on the basis of observations and other data, researchers draw their own conclusions' (Stake, 1995:9). This research results should be considered as a 'particularisation' that can contribute to a 'generalisation'. Although this study aimed to identify themes for understanding how students experienced blended learning and to extend the CoI framework which was reviewed in Section 2.4, it was understood from the outset that further studies would be required to generalise students' blended learning experiences and the changes proposed in the CoI framework.

Another objection to the case study approach is that it is too subjective. Triangulation was incorporated into this study design to ensure that it was based on a disciplined

approach (Stake, 2003). Some researchers (Brewer and Hunter 1989; Gillham, 2000) have also emphasized multi-sourced evidence in a case study approach. Methodological triangulation involves the use of more than two methods to study the same phenomenon under investigation (Mitchell, 1986) and data source triangulation supports observations or conclusions in more than one way, in particular, comparing data collected in one way with data collected in a completely different way (Shipman, 1981) so that the findings of each method enriches and informs the others (Slavin, 1992). In this study, the reflective study logs, classroom observations, focus group interviews and individual interviews, as suggested by Yin (2003), were incorporated into the study design for the purpose of triangulating the data.

3.13 Ethical Considerations

It has already been established in this and earlier chapters that the case of this study was the MA course of the Higher Diploma in Business (Accounting) programme managed by HKU SPACE. However, the course was actually provided to the students by the HKU SPACE Po-Leung-Kuk Community College (HPCC), which is legally an independent college. In order to ensure I could obtain the right to collect and use data correctly, I consulted with both the School and the College about my research. I was asked to obtain formal approval from both the Registrar of HKU SPACE and the College Principal of HPCC. As well, since the course was managed and designed by the College of Accounting and Finance of HKU SPACE, I was asked to also obtain formal approval from the Head of the College. As a result, I prepared letters to explain my research and request approval from the School Secretary and Registrar of HKU SPACE, The College

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Principal of HPCC and the College Head of Accounting and Finance. I also met them individually to explain the research and present the letters to them. Finally, I obtained all of their approval documents. Together with the research ethics request document and the designed student's consent form, the approval documents were submitted to the University of Nottingham for approval. The School of Education of The University of Nottingham approved the research project. Since I was an employee of HKU SPACE, potential conflict of interest and research ethics issues were also declared to the School. All of these ethical issues-related documents are attached in Appendix K.

I was a colleague of the course leader and the teachers. With such a relationship, the students might have felt reluctant to tell me their negative views. To handle this, I explained to the students that I was an independent researcher who worked in a different department and even a different location from the course leader and the teachers. I also emphasized the issues of confidentiality and anonymity to them, these being important ethical considerations in case study research (Synder, 2002). In the student's consent form, the issues of confidentiality and anonymity were addressed. All the participants had read the consent forms and accepted the research invitation by signing the forms. Also, at the beginning of the classroom observations and all the interviews, I re-stated these issues. Consent for audio-taping the classes and the interviews was obtained every time.

3.14 Timetable of the Research

The research preparation was started in the first semester of the Doctor of Education (Lifelong Education) programme in September 2009. Table 13 shows the timetable of the research.

Table 13 Research Timetable

Period	Tasks
September 2009 – August 2011	● Search for the area of research ● Perform studies on blended learning
May 2011 – August 2011	● Decide the area of research ● Perform preliminary literature review ● Prepare the thesis plan
September 2011 – January 2012	● Refine the thesis plan based on supervisor's comments ● Obtain approval of the research topic and contents ● Perform literature review ● Obtain approval of the use of collected data ● Obtain approval of conducting interviews with the students
January 2012 – December 2012	● Refine literature review ● Design and conduct pilot study ● Analyse the results of the pilot study ● Review the pilot study and design the field research
January 2013 – June 2015	● Refine literature review ● Decide research methodology ● Design, conduct and analyse classroom observations ● Design, conduct and analyse study logs with reflections ● Design, conduct and analyse online participation observations ● Design, conduct and analyse student focus group interviews ● Design, conduct and analyse individual student interviews ● Design, conduct and analyse teacher interviews ● Design, conduct and analyse course leader interview ● Draw findings and conclusions ● Write the thesis ● Produce report for supervisor's review
July 2015 – September 2015	● Finalise the thesis ● Submit the thesis

In the first 2 years, I searched for the area of research and conducted preliminary studies. At the end of Year 2 of the study, the research area was decided and the thesis plan was prepared. After obtaining the approval of the research topic from the University, I met the supervisors and started the research. The research was officially started with approval obtained from the University of Nottingham, HKU SPACE and HPCC in January 2012.

The fieldwork also started in January 2012. During 2012, a pilot study was conducted to test the instrument. After analysing and evaluating the pilot study, the research study was designed in January 2013. From early 2013 to mid-2015, classroom observations, study logs with reflections, online participation observations, student focus group interviews, individual student interviews, individual teacher interviews and course leader individual interviews were designed, conducted and analysed. The thesis was written in the same period; the supervisors' review process and literature review updates were continuous throughout the process. The completed thesis was submitted for the supervisors' final review in mid-2015 and the finalised thesis was submitted to the University in September 2015.

During this process, I conducted studies continuously and published some research papers related to blended learning. The publication list is in Appendix L. I was a co-editor of 6 books, author/co-author of 7 journal articles, author/co-author of 21 book chapter papers and presenter of 7 conference papers. Among these, 4 journal articles, 3 book chapter papers and 1 conference paper were the research results of this study.

3.15 Conclusion

This chapter has described the methodology of this study. It has explained the purpose of the research and the research design, based on the research questions and sub-questions. It has outlined the research methods, schedule and approach taken to the analysis. A number of important issues relating to the research were discussed here, including refinement of the research questions, validity and reliability, the researcher's role, limitations and delimitations and ethical considerations.

Chapter 4 and 5 explore the research findings. Chapter 4 addresses the research questions and sub-questions with a blended learning MA course model constructed based on the themes found in the thematic analysis. By answering the research questions, the students' experience in the blended learning environment is understood, discussed and explored. Chapter 5 explores the findings presented in chapter 4 using a CoI framework. It highlights and discusses the new issues identified in the research.

4 FINDINGS AND DISCUSSION

4.1 Introduction

This chapter starts with describing the research findings for understanding the student experience of the blended learning course. The first section of this chapter explains the use of a thematic analysis approach outlined by Braun and Clarke (2006) for the analysis as described in the data analysis section in Section 3.8. The process of developing the thematic maps (Braun and Wilkinson, 2003) and the final thematic map are described in detail. Based on the themes, a conceptual model of the blended learning in the course was constructed and this is used to guide the presentation of the remaining sections.

The second section addresses the first research question, guided by the sub-questions on how the students learned through the activities and how traditional learning and online learning are linked. Guided by the sub-questions on what form the engagement took within the blended study and how collaboration facilitated the students' study in blended learning, the third section focuses on presenting the findings and the discussion of the second research question. The third research question is then answered by understanding how teacher engagement affected students, the barriers for students in learning and other factors that influenced the form of students engagement. Since the research questions are case specific, 'students' in the questions refer to 'sub-degree students' and 'blended learning' refers to the 'blended learning of the sub-degree Accounting course'. After describing the findings and discussing the results, it becomes possible to come to an understanding of this sub-degree blended learning Accounting course.

4.2 Thematic Data Analysis

4.2.1 Analysis Process

Recalling from Chapter 3, the case study was conducted in the MA blended learning course in the 2012/2013 cohort with 4 classes of 160 students. The unit of analysis was 2 classes of 2 teachers and 80 students. Qualitative data were generated through the individual student interviews as a primary data source. To supplement the primary data and to ensure the validity and reliability of the research, triangulation of the data and method was used. Besides the 8 individual student interviews, 5 classroom observations, 24 online participation observations, 25 student learning logs and reflections, 4 student focus group interviews with 24 students, 24 online participation observations, 2 individual teacher interviews at the beginning of the semester, 2 individual teacher interviews after the semester and 1 individual interview with the course leader were also conducted. The summary of the data collection is shown in Table 14.

Table 14 Summary of Data Collection

Research Method	Description	No. of Participants Interviews, Class Observed/ Participants Observed
First Round Teacher Interviews	Interview teachers at the beginning of the semester	2
Classroom Observations	Observe the 3-hour classes of Class A & B	5
Study Logs with Reflections	Collect students' learning diary of Class A & Class B	25
Student Focus group Interviews	Interview students	24
Online Participation Observations	Online learning logs observations	24
Student Individual Interviews	Interview students after the semester	8
Second Round Teacher Interviews	Interview teachers after the semester	2
Course leader Interview	Interview the course leader after the semester	1

Since the data analysis process was complex, the analysis had to be performed in stages (Wellington, 2000). In this study, the six-phase thematic analysis proposed by Braun and Clarke (2006) was used to categorise the data according to meaningful patterns:

Phase 1: familiarising yourself with your data.

Phase 2: generating initial codes.

Phase 3: searching for themes.

Phase 4: reviewing themes.

Phase 5: defining and naming themes.

Phase 6: producing the report.

The first phase of my data analysis was to familiarise myself with the data. After collecting data from the interviews, I transcribed them with translation in English. I immersed myself in the details of the documents, read them several times and wrote down notes to record my impressions about them. While doing this, I identified some recurring ideas and themes and selected illustrative quotations. After this, I wrote down my reflections on the documents and formulated some key ideas from my notes.

In the second phase, I generated initial codes from the data. First, the collected data were categorised. NVivo 10 was used to manage the nodes by creating nodes and sub-nodes, relating nodes and sub-nodes, reorganizing the nodes and viewing the references of the nodes. While performing coding of the interview data, the codes were revised to reflect new codes identified. Finally, a note table was generated to show the theme names, number of sources and references, as shown in Appendix M. Based on the categorised nodes and sub-nodes, the initial codes were generated.

The third phase was to search for themes. I categorised different initial codes into potential themes and collated all the relevant coded data extracts within the identified themes. The thematic maps (Braun and Wilkinson, 2003) were drawn as visual representations to help me to sort the different codes into themes (Braun and Clarke, 2006). In this phase, the initial thematic map was developed with 22 themes and 160 sub-themes. The initial thematic map was reviewed. I read all the collated extracts for each theme and considered if they appeared to form a coherent pattern. Then, I considered the validity of the individual themes in relation to the data set and reconfirmed if the themes accurately reflected the meanings evident in the data set as a whole. With some themes and sub-themes grouped and refined, the developed thematic map with 15 themes and 131 sub-themes was constructed. The thematic maps can be found in Appendix N.

The fifth phase was defining and naming themes. I defined and further refined the themes that I would present for my analysis. I collated data extracted for each theme and organised them into a coherent and internally consistent account with accompanying narrative. After further review and reorganization, the final thematic map was developed with 12 themes and 85 sub-themes, as in Figure 9.

The final phase was producing the report. This phase was to tell the story with the data within and across the themes, and to pin down what interpretative analysis actually entails (Braun and Clarke, 2006). This chapter tells the story using a conceptual model built from the themes, discusses the interpretation and relates the analysis results to the literature. During the interpretation, some issues related to inquiry learning were found

not to be reflected in the CoI model reviewed in Section 2.4. The issues beyond the CoI

model and the consequence assertion in extending the model are discussed in Chapter 5.

Figure 9 Final Thematic Map (12 Themes)

4.2.2 The 12 Themes

The 12 themes include traditional learning activity, online learning activity, learning process, engagement, learning outcome, assessment, collaborative learning, teacher's role, individual barrier, course problem, student need and preference. The detailed descriptions of the themes and their sub-themes in the final thematic map are listed in Appendix O.

4.2.2.1 Theme 1: Traditional Learning Activity

The first theme is traditional learning activity. As defined in Section 2.2.2, traditional learning refers to face-to-face contact and after-class traditional learning arises from face-to-face instruction (Derwin, 2008). The 4 sub-themes, lecture, class exercise, assignment and reading material, refer to attending lectures conducted by the teachers, doing exercises in the class, doing assignments or exercises after class, and reading textbooks, lecture notes or reference materials after class.

4.2.2.2 Theme 2: Online Learning Activity

The second theme is online learning activity. This includes all kinds of online activities such as the prescribed and non-prescribed online learning activities in the learning platform named SOUL, as described in Section 1.5. The 11 sub-themes include the defined learning activities in SOUL, namely 'Chapter Preview', 'Warm-up Quiz', 'Matching Game', 'Thinking Forum', 'Chapter Review', 'Level Quiz', 'Chapter Quiz' and 'Chapter Exercise'. The activities 'Warm-up Quiz', 'Level Quiz', 'Chapter Quiz' and 'Chapter Exercise' are also referred to in the sub-theme of online exercise, as the students always described these as online exercises. Besides the activities in the learning platform,

online searching the Internet and reading online learning materials in the learning platform or the Internet are also included as sub-themes.

4.2.2.3   Theme 3: Learning Process

Learning process is the third theme. This is defined as what the students did during their learning and includes 8 sub-themes. These sub-themes, revision, learning time, theory, calculation, contextual, additional knowledge, learning verification and linking learning modes, refer respectively to doing revision, time spent on learning, learning theory, learning how to do calculation, learning contextual contents, acquiring additional knowledge, verifying if the students learnt, and linking online and traditional learning modes to study.

4.2.2.4   Theme 4: Engagement

The fourth theme is engagement which means the reasons for the students' learning engagement. The 9 sub-themes include helpful, most helpful, like, encourage, flexible, applicable, reinforce, understand and deep learning. Helpful refers to how the students perceived the helpfulness of the learning activities. Descriptions like 'useful' and 'effective' are categorised in the helpful sub-theme. Most helpful refers to the descriptions of 'most helpful' and 'most useful' by the students. Like refers to the students' descriptions related to what they enjoyed, wanted, liked or felt interested in during the learning. Encourage means the students found they were encouraged or motivated during learning. Flexible refers to the perceived flexibility during learning, which includes convenience, having additional learning modes and having more options to learn. Applicable means the students' practical or applicable knowledge. Reinforce

relates to reinforcement, memory and strengthening. Understand means the students understood or learnt during learning. Deep refers to learning related to deep learning and deep thinking.

4.2.2.5 Theme 5: Learning Outcome

The fifth theme is learning outcome. This has only 2 sub-themes, knowledge and result. Knowledge refers to the learning outcome related to acquiring knowledge, feeling curious to explore different learning resources and the intention to learn for applying knowledge. Result refers to the intended outcome of obtaining a good result, passing the examination, getting a good GPA and articulating to further study.

4.2.2.6 Theme 6: Assessment

The sixth theme is assessment. It also has only 2 sub-themes, examination and online participation. Examination refers to examination mark, mid-term examination and test. Online participation refers to doing online activities related to the online participation marks. In this course, 5 of the overall assessment marks were allocated for online participation.

4.2.2.7 Theme 7: Collaborative Learning

Collaborative learning is the seventh theme. This has 5 sub-themes; 4 relate to communication and 1 to tools. The first 4 sub-themes are traditional teacher-student communication, traditional student-student communication, online teacher-student communication and online student-student communication. The fifth sub-theme is online tools, which means the use of online tools in the communication. The tools include email,

WhatsApp, Skype and Facebook. This theme is important as the students described in detail why and how they have engaged in collaborative learning, especially online collaborative learning, in the course.

4.2.2.8 Theme 8: Teacher's Role

The eighth theme is teacher's role, which is associated with 3 sub-themes namely teacher's encouragement, link learning modes and teaching design. Teacher's encouragement refers to the encouragement given to the students by the teachers. For example, the teachers encouraged the students to learn and encouraged them to answer the questions. Link learning modes refer to the teachers taking the initiative to link online and traditional learning. Teacher design means course design and pedagogical design of the course by the teachers.

4.2.2.9 Theme 9: Personal Barrier

The next theme is personal barrier. The 4 sub-themes, language, attitude, pressure and lack of understanding relate to problems due to using English to learn, negative attitudes including laziness, feeling bored, forgetting or not wanting to spend time on learning, too heavy workload or feeling that learning is a burden, and have problems in understanding the contents, being unable to learn or having difficulty during learning.

4.2.2.10 Theme 10: Course Problem

The tenth theme is course problem, which relates to problems of course design and delivery. It has 8 sub-themes. Content problem refers to errors found in the contents and activities. Not helpful means the students found the learning resources not helpful to their

learning. Insufficient feedback refers to missing or insufficient feedback during students' learning. Insufficient instruction mean students found the instruction given by the teachers is not enough to guide their learning. 'Technical problem' refers to the problems found in the system, for example, problems in logging into the platform or poor design of the system. Not in syllabus means the students found the learning contents were out of the range of the syllabus and should not be included in the course materials.

4.2.2.11 Theme 11: Student Need

The theme of student need had 11 sub-themes related to the need of students during blended learning. Better system means the students needed an improved system with better design or better functions for online learning. Allow printing means they needed the online resources to be printed at times when their printing functions were disabled in accordance with the course design. Better course design means the students needed the design of the blended course to be improved. More online questions and more online feedback refer to the need to have more questions in the online question pool and more detail explanations in the feedback. More practical means the students needed the contents to be applicable in practical situations. More guide and more teaching support mean they needed the teachers to guide their learning and to give them more support during learning. More learning hours refers to the need to have more teaching hours, consultation hours or learning hours. More links for learning modes means the students needed a tighter link between the online and traditional modes of learning. The last sub-theme, online class, refers to the need to have real-time online lectures, online tutorials, or online group discussions.

4.2.2.12 Theme 12: Preference

The last theme is preference and it has 5 sub-themes. Keep traditional way means the students preferred keeping some kinds of learning in the traditional ways, for example, using hand-writing when doing calculation exercises. Bi-lingual refers to the students' preferences in using English and Chinese during learning. Mobile learning is their preference in having mobile learning support, for example, learning content that could be viewed in mobile devices. Integrated blended learning means the students' preference to have either integrated or supplemented blended learning. Ideal blended learning refers to the ideal scenarios of blended learning that the students preferred.

4.2.3 Construction of the Conceptual Blended Learning Model

Based on the themes, a conceptual model of the blended learning in the course was constructed (Figure 10). In this figure, the 'in-class' area refers to the traditional teaching and learning inside the classroom. In the class, the role of teacher was to give instruction and encourage collaboration. The students engaged in learning by participating in the traditional and online activities. Traditional activities refer to face-to-face activities and after-class learning activities arise from face-to-face instruction as stated in Section 4.2.2.1. The 'outside class' area refers to pre-class and post-class learning. In this course, the teachers gave in-class instruction requesting the students to do both traditional and online learning activities after the class. In the learning process, the students engaged by participating in traditional and online activities, including online collaboration. Learning outcomes, assessments, role of the teacher, individual barriers, course problems, student needs and preferences were the other factors influencing the students.
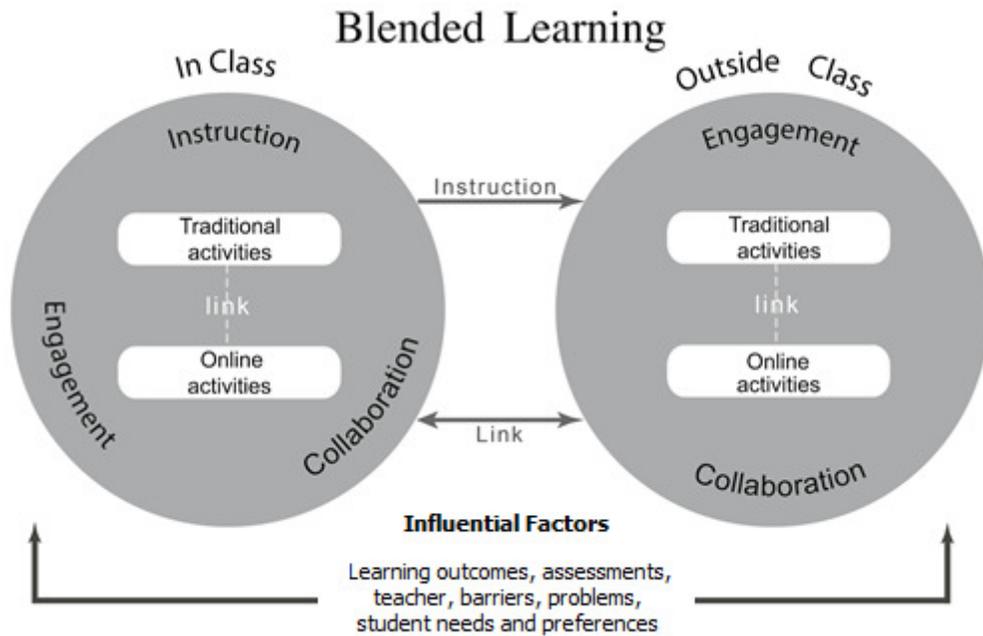
Figure 10 The Blended Learning Conceptual Model of the MA Course

The conceptual model guided the analysis of the results. The themes and sub-themes are addressed in Sections 4.3 to 4.5, which provide the findings and discussion in relation to the research questions. By answering the research questions and sub-questions, the student experience in the blended learning course was understood and explored. Furthermore, new issues related to the CoI framework, as reviewed in Section 2.4, were identified for further discussion in Chapter 5.

4.3   How do Students Learn in a Blended Learning Environment?

The MA course was conducted originally in classroom teaching mode only. A project was carried out to redevelop the course from traditional to blended learning mode. It was redesigned with an appropriate blend of traditional and learning activities. In the past, the teachers conducted lectures and did exercises with the students in the 3-hour class over 12 weeks. After the classes, the students went home to do self-study and work on the

assignments. With the introduction of blended learning, students still have to participate in traditional activities, but they now have online learning activities to study. In this Section, the findings of the first research question about learning in a blended learning environment and its sub-questions, as listed, are reported and discussed.

RQ 1. How do students learn in a blended learning environment?

SRQ 1. How do students learn through the learning activities?

SRQ 2. How are traditional learning and online learning linked?

The discussion of the findings relating to the first research question is in Section 4.3.3.

4.3.1   How do Students Learn through the Learning Activities?

4.3.1.1   Learning with Traditional Activities

In the MA course, the traditional classes were compulsory for both Classes A and B. In the classes, both Teacher A and Teacher B conducted lectures and then gave exercises for the students to do. The teachers described clearly what they usually did in the class.

Teacher A: In the class, I taught and then gave the students to do some simple questions.

Teacher B: At the beginning, we used the notes. I followed the notes to teach. Then I gave questions printed in paper format to them. After teaching some parts, I would ask them to do the questions. After doing the questions, I checked the answers with them.

All the 8 students in the individual interviews said they had lectures and class exercises in the class. All the students found they learnt in the lecture, when they learnt theories, calculations or contextual contents. However, 2 students expressed the view that they could not understand the lecture fully. Besides, 1 student could not concentrate in the

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lecture and another found it lecture too rushed. All the 8 students said that, after the lecture, the teachers gave some class exercises related to the taught topics. All of them said the teachers then checked and explained the answers with the students. All the 4 students in Class A, but none of those in Class B, mentioned that they did class exercises in groups. Group learning is to be covered in more detail in Section 4.4.2, on collaborative learning. Student B2 and Student B1 described how they learnt by participating in traditional activities in the class.

> Student B2: In the MA course, I mainly had a 3-hour class every week. In the class, the teacher explained the contents in the MA notes. Then we spent some time to do the exercises based on the theories learnt.

> Student B1: After the lecture, the teacher provided some contextual case studies for me to practise. For the calculation, he asked us to do some exercises in class, checked the answers together and saw if we were all able to do them. If not, he explained the areas that students did not understand again and ensured everyone understood the contents before dismissing the class.

After the class, all the 8 interviewed students also read the learning materials to study. Seven students reviewed the lecture notes and 5 read the textbook. Four students found reading the textbook helpful and 2 of them even stated that the textbook was the most helpful learning activity. However, 2 students found reading the textbook boring and time-consuming. Three students did assignments as instructed by their teachers. One student found difficulty in doing assignments as she had not learnt fully in the class. These showed the students learnt by participating in traditional activities after the class. The quotes showed the reason Student A1 learnt by doing long questions was that the examination contained such types of questions.

Student A1: I needed to spend time to find long questions in the textbook to practise to complement

my learning. The reason I paid special attention to this part was that the examination contained

long questions.

Regarding traditional learning activities, the interview results were consistent with those from classroom observations and learning reflections done by the students. Table 15 shows the time spent and the mean time of different activities in the observed classes. From the observations, the lecture and the class exercise consumed most of the time. The means of the lecture time and the class exercise time were 46.6 minutes and 66.4 minutes respectively out of the 3-hour class. The remaining time that the teachers used in the 3-hour class was for answering questions, explaining exercises, instructing for after-class activities, conducting group activities, taking breaks, talking to individual students and taking attendance. The findings on teachers' giving instruction are reported and discussed in detail in Section 4.5.1 on instruction.

Table 15 Time Spent on Activities in the Classroom Observations (Minutes)

Classroom Observations	Lecture	Class Exercise	Explain on Exercise	Instruction for After-class Activity	Group Activity	Break, Talk to Individuals or Taking Attendance	Total
Class A (1st)	80	43	23	15	0	20	181
Class A (2nd)	0	121	0	0	59	10	190
Class A (3rd)	15	84	12	28	15	26	180
Class A Mean	**31.67**	**82.67**	**11.67**	**14.33**	**24.67**	**18.67**	**183.67**
Class A Standard Deviation	**42.52**	**39.02**	**11.50**	**14.01**	**30.66**	**8.08**	**5.51**
Class B (1st)	75	32	18	1	0	54	180
Class B (2nd)	63	52	0	0	0	65	180
Class B Mean	**69.00**	**42.00**	**9.00**	**0.50**	**0.00**	**59.50**	**180.00**
Class B Standard Deviation	**8.49**	**14.14**	**12.73**	**0.71**	**0.00**	**7.78**	**0.00**
Mean (Both)	**46.60**	**66.40**	**10.60**	**8.80**	**14.80**	**35.00**	**182.20**
Standard Deviation (Both)	**36.61**	**36.16**	**10.43**	**12.48**	**25.55**	**23.41**	**4.38**

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For after-class learning, from the 25 individuals in both Classes A and B who completed the study logs, the mean times for reading course materials and doing assignments in the 2 recorded weeks were 73 and 133.4 minutes respectively. Table 16 shows the times spent in reading course materials and doing assignments by the students.

Table 16 Time Spent on Reading Course Materials and Doing Assignments (Minutes)

| Class | Student | 1st Round | | 2nd Round | | Both Rounds | |
		Course Materials	Assignments	Course Materials	Assignments	Course Materials	Course Materials
A	1	60	60	0	15	60	75
A	2	60	30	0	0	60	30
A	3	60	0	0	120	60	120
A	4	210	180	190	490	400	670
A	5	15	60	0	540	15	600
A	6	0	0	30	60	30	60
A	7	0	0	0	180	0	180
A	8	0	60	120	0	120	60
A	9	210	210	0	0	210	210
A	10	0	0	0	0	0	0
A	11	0	0	0	0	0	0
A	12	120	60	90	60	210	120
Class A Mean		**61.25**	**55.00**	**35.83**	**122.08**	**97.08**	**177.08**
Class A Standard Deviation		**78.97**	**71.03**	**63.31**	**192.37**	**121.14**	**223.94**
B	1	0	0	0	0	0	0
B	2	0	0	0	0	0	0
B	3	0	0	0	0	0	0
B	4	60	0	0	45	60	45
B	5	0	0	0	0	0	0
B	6	0	0	0	0	0	0
B	7	0	0	0	0	0	0
B	8	0	0	0	0	0	0
B	9	0	0	0	0	0	0
B	10	0	0	90	300	90	300
B	11	0	0	0	40	0	40
B	12	60	0	270	180	330	180
B	13	90	165	90	480	180	645
Class B Mean		**16.15**	**12.69**	**34.62**	**80.38**	**50.77**	**93.08**
Class B Standard Deviation		**31.50**	**45.76**	**78.27**	**150.67**	**99.79**	**189.17**
Mean of Both Classes		**37.80**	**33.00**	**35.20**	**100.40**	**73.00**	**133.40**
Standard Deviation of Both Classes		**62.32**	**61.85**	**70.01**	**169.60**	**110.74**	**206.67**

From the table, there appears to be a larger variation in study time. The standard deviations of time spent on course materials and assignments of both classes were 110.74

and 206.67 respectively. It was found that the least and highest times spent in reading course materials in a week were 0 and 210 respectively. The least and highest times spent in doing assignments in a week were 0 and 540 respectively. One student in Class A and 1 student in Class B did not read any course materials in either recorded week. Furthermore, 2 students in Class A and 8 in Class B did not read course materials or do assignments in either week. Although all 8 students in the individual interviews said they had read course materials, the study log results indicated that they might not have done so during the recorded weeks. The study logs showed that the times spent in reading course materials and doing assignments by Class A were nearly double those of Class B. The difference in learning time was possibly caused by different instructions given by the teachers. This is discussed and explained in more detail in the section on instruction (Section 4.5.1).

4.3.1.2   Learning with Online Learning Activities

All the 8 interviewed students said they learnt through participating in the online learning activities. As introduced in Chapter 1, the course was designed with the 4 pre-class online learning activities, namely 'Chapter Preview', 'Warm-up Quiz', 'Matching Game' and 'Weekly Assignment', and the 6 post-class activities, namely 'Chapter Review', 'Level Quiz', 'Chapter Quiz', 'Chapter Exercise', 'Thinking Forum' and 'Reference Material'. Since the 'Warm-up Quiz', 'Level Quiz' and 'Chapter Quiz' were in multiple-choice formats, the teachers and students sometimes referred to these activities as 'questions or MC exercises'. They also referred to the 'MC exercises' and 'Chapter Exercise' as

'online exercises'. These terms appeared in the interview conversation. Table 17 summarizes the online activities in the platform, as described in Section 1.5.2.

Table 17 Summary of the Online Activities

Online Activities	Descriptions of the Activities	Pre-class or Post-class	Compulsory or Optional	A Type of MC Exercise?	A Type of Online Exercise?
Chapter Preview	PPT with narrations for previewing the contents to be taught in a class.	Pre-class	Optional	No	No
Warm-up Quiz	Simple multiple-choice questions for students to learn before a class.	Pre-class	Optional	Yes	Yes
Matching Game	Drag and drop matching game for students to learn the Accounting terms.	Pre-class	Optional	No	No
Weekly Assignment	Weekly instruction to the students to guide their online learning.	Pre-class	Optional	No	No
Chapter Review	PPT with narrations for reviewing the contents taught in a class.	Post-class	Optional	No	No
Level Quiz	Mainly multiple-choice questions in 'Gold', 'Silver' and 'Bronze' levels. This activity contributed 5 marks to the overall assessment of the course.	Post-class	Compulsory	Yes	Yes
Chapter Quiz	Multiple-choice questions for students to practise after a class.	Post-class	Optional	Yes	Yes
Chapter Exercise	Long questions for students to practise after a class.	Post-class	Optional	No	Yes
Thinking Forum	Scenario-based online discussion for students to learn after a class.	Post-class	Optional	No	No
Reference Material	Online materials, for example, videos of interviews with the Accountants.	Post-class	Optional	No	No

The findings in this section show how the students studied with the online learning activities. The most popular of these activities was the 'Level Quiz'. All of the 8 interviewed students did it which contained exercises at three levels of difficulty. 'Gold Level' questions were the most advanced and with long questions in MC format, 'Silver Level' questions were of intermediated difficulty and 'Bronze Level' questions were the easiest. All 8 students elaborated how they learnt by doing the 'Level Quiz'. In the quotes, they highlighted feedback, student independence, efficiency, structuring of solutions, and sequencing issues. In the quotes, they highlighted feedback, student independence,

efficiency, structuring of solutions, and sequencing issues. Student A3 explained how he learnt efficiently with the help of feedback in the 'Level Quiz'.

Student A3: When I did the 'Level Quiz', I had the opportunity to do the calculation. With the instant feedback provided in the system, I could understand why I did some questions wrongly without asking the teacher. It helped me to be able to learn by myself. Through doing the online exercise, I found I could learn quicker.

Student B2 described how she learnt independently with the help of the activity.

Student B2: There were some long questions and I needed to solve the problems step by step. It would be very difficult for me if I had not done the 'Silver Quiz' before doing the long questions. In fact, it would be much easier for me to handle the long question if I did the 'Level Quiz' before.

Student A2 showed how he learnt step-by-step with the structure of the activity.

Student A2: Since the difficulties of the questions were increased gradually, I could move on to 'Silver Level' to see if I knew how to calculate the simple questions. I remembered there were contextual questions available in the 'Gold Level'. Those were usually quite hard to understand but helped me to prepare for the examinations.

Student A1 elaborated on how the level sequencing helped her learn progressively.

Student A1: 'Level Quiz' was good in that it separated into different levels and allowed us to know the level we had attained and learn progressively.

All 8 students had positive views towards the 'Level Quiz'. All of them mentioned that the 'Level Quiz' was useful and helpful in learning. Four students found the format of the 'Level Quiz' questions was similar to the examination and helped them to prepare for the examination. All 8 students did the 'Level Quiz' during their usual studies and 3 of them

did it again before the examination, for revision. Besides, 6 students mentioned that the 'Level Quiz' contributed 5% to the overall assessment of the course. Student B3 found he could test his understanding with self-learning using the 'Level Quiz'.

> Student B3: The main reason I went there was because it was a good way for me to have self-training or practice after attending the class to test my understanding about the relevant topics.

Besides the post-class activity 'Level Quiz', all the 8 students in the individual interviews also mentioned the pre-class activity of the 'Warm-up Quiz'. The results showed that they had varied views towards this activity. Four students had positive comments towards it. They found it, respectively, 'useful', 'easy-to-do', 'allowed them to warm-up', and 'provided students with a brief idea of the topic to be taught in the next class'. However, 2 students found it could not help their study and thought the exercises were 'too simple to learn' and it was 'hard to understand the learning contents before attending the class'. The remaining 2 students just mentioned and described the 'Warm-up Quiz' but did not state their views about this activity. It showed that that the students had extreme views towards the "Warm-up Quiz". The examples showed the students' experiences of the 'Warm-up Quiz', as explained in the varied views of Student A3 and Student B3.

> Student A3: The 'Warm-up Quiz' was for preparing for the next class and when I had time I would do it. Since the 'Warm-up Quiz' and textbook helped me to understand the topic which was going to be taught, I took a look at it which helped answer the questions in class.

> Student B3: I found the 'Warm-up Quiz' could not help my study and I hardly understood the learning contents before class even if I read the introduction. The 'Warm up Quiz' was supposed to be designed for students to do before attending class. However, I did not have the knowledge to do it before the class. It was difficult for me to learn the topic before attending class.

Unlike the 'Level Quiz' and the 'Warm-up Quiz', not all students mentioned the other two 'online exercises'. Only 2 students talked about the 'Chapter Exercise'. One of them found it useful as 'it strengthened his knowledge and could verify whether he learnt'. The other found it 'quite complex' and so she did not do it. The 'Chapter Quiz' was mentioned by 4 students. One student did it often as it was helpful. Another 2 did not often do it, but they had different views in that 1 found it simple and the other found it too complex. One student just mentioned he knew this activity.

Apart from the 'Warm-up Quiz', the other three pre-class activities were not used frequently by the students. Six of them mentioned the 'Matching Game'. Of these, 4 gave negative comments including 'time-consuming', 'boring', 'too easy for learning', and 'not interested in'. One said she could learn from it but not much. One just mentioned it was an easy activity. Only 2 of the interviewed students mentioned the 'Chapter Preview'. One showed a positive view, that 'it helped in reviewing and for revision' and 1 just described the activity as a 'preview of the next class'. Only 1 of them mentioned the 'Weekly Assignment' and he said it was 'time-consuming'. These showed that the students had diversified views towards the pre-class activities.

For the remaining post-class online activities, 7 students mentioned the 'Chapter Review'. Five students found it was helpful to 'reinforce knowledge', 'refresh memory', 'when I did not understand', 'when I was absent from a class' and 'reminded what I learnt'. One student said she did not need it and the other one just described the activity as 'almost the same as a lecture' and therefore she did not use it.

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All the 8 students mentioned the 'Thinking Forum'. Of these, 2 had positive views and 6 had negative views towards the activity. The 2 supporters found their learning was more in-depth and applicable.

> *Student A2: It was quite interesting because I was able to learn more. Some discussion contents in 'Thinking Forum' were not learned in class, they were more in-depth.*

> *Student A1: There was a 'Thinking Forum' in the online learning system. The discussion would link to the learning contents. We discussed how 'Activity-based Costing' could be applied to the different industry, for example, in the chemical plant industry. Youtube videos and questions posted on the forum allowed us to discuss and think about the topic. It made me realise that memorizing the theories was not enough and real-life application of theories was important. This helped my study and my career in the future as I got the clearer theory concepts through this.*

For the other 6 students, 2 found the 'Thinking Forum' time-consuming, 1 said she preferred to have direct discussion with the classmates, 2 said too few students were using the activity, and 1 said he did not understand the video in English.

For online reference materials, 1 student found reference materials provided by the School allowed him to learn and solve problems without guidance from the teacher.

> *Student A1: The online system contains selected reference materials. It was a place for me to understand the content before I asked questions to the teachers. It also allowed us to learn and solve problems by ourselves. It assisted my other learning without guidance from the teacher.*

Six students did online searching on the Internet. These students searched for online materials when they had problems, looked for interesting materials, used online dictionaries or looked for additional learning resources. One student mentioned she used

her mobile phone to access the online dictionary during learning. The quotes of Student A4, Student B1 and Student B3 illustrate how they did online searching.

> *Student A4: I found lots of online resources to learn instead of just reading the books. I narrowed down the searching to look for specific topics and areas.*

> *Student B1: I searched for the materials I needed by myself.*

> *Student B3: In fact, we could go to Baidu or Google as search engines or some other search engine to search. Also, we could visit ACCA's website. After registration as members, we can access much Accounting-related information.*

After online searching, Student A1 shared of online learning materials with others to enable them to learn together.

> *Student A1: I found online references that were more suitable to my learning as the level of difficulty of the content would suit me most... Some of it was obtained from the ACCA website... We found a question which was worth doing or for discussion... We posted it on Facebook and encouraged others to do it. We also solved the problem together.*

In this case, Student A1 searched for learning material, decided which question was worth doing or for discussion, posted it on social media tools, encouraged others to do it and solved the problem together.

Of the 8 interviewed students, 4 and 1 said that 'Level Quiz' and 'Chapter Review' respectively were the most helpful activities for their learning. The other 3 students did not mention which activity was the most helpful. Five of the interviewed students mentioned that they did 'Level Quiz' frequently. One of these said he did the 'Chapter Quiz' frequently and 1 said she did the 'Warm-up Quiz' frequently.

To summarise the findings relating to the students' learning with online activities, Table 18 summarizes the positive (✓), neutral (–) and negative (×) comments from the students about the 10 learning activities in the online platform and online searching.

Table 18 Summary of the Comments of the Online Activities

Online Activities	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4
Chapter Preview	✓						–	
Warm-up Quiz	✓	×	✓	–	✓	✓	×	–
Matching Game	×	×		✓ ×	✓	×	×	
Weekly Assignment					×			
Chapter Review	✓	–		×	✓	✓	✓	✓
Level Quiz	✓	✓	✓	✓	✓	✓	✓	✓
Chapter Quiz	–	×		×	✓			
Chapter Exercise	✓	×						
Thinking Forum	✓	✓	×	×	×	×	×	×
Reference Material	✓							
Online Searching	✓	✓		✓	✓		✓	✓

From the summary table, it was found that the 'Level Quiz' was the online activity about which all the students had positive comments. From the quotes related to 'Level Quiz', it was found that the reasons that the students did this activity were that it helped them to check their understanding, helped them to learn independently and efficiently, helped them to learn progressively with the structured levels of difficulty of the questions, helped for the examination, contributed 5% of the course assessment, and their teachers instructed them to do it.

It was found that the most negative comments were from the activities 'Thinking Forum' and 'Matching Game'. Since the 'Thinking Forum' was related to collaborative learning with instruction in Class A, this is discussed in Section 4.4.2 on collaborative learning

and Section 4.5.1 on instruction. For the 'Matching Game', Teacher A said the problem was that this was not, in fact, a game and therefore could not attract students to play.

> Teacher A: If possible, we can include some games for them, just like having afternoon tea after working hard. Now, the 'Matching Game' in the platform is actually not a game. It is an exercise for them to learn. So, the students may not like it.

When comparing the results of individual interviews to the online participation observations, it was found that the time they spent on the online activities recorded in the online system was, in general, consistent with what they shared in the interviews. However, there was inconsistency in some of the activities. Table 19 shows the students' learning times in each of the online activities, as recorded in the system.

Table 19 Learning Time of Online Activities Recorded in the System (Minutes)

Online Activities	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4	Mean
Chapter Preview	20	0	0	0	61	1	2	0	10.5
Warm-up Quiz	0	8	0	112	5	9	0	0	16.8
Matching Game	0	0	0	60	6	5	0	0	8.9
Weekly Assignment	1	0	0	0	0	1	1	0	0.4
Chapter Review	18	1	0	0	6	3	3	1	4.0
Level Quiz	381	245	250	367	3	433	184	100	245.4
Chapter Quiz	1	0	7	15	8	19	11	1	7.8
Chapter Exercise	3	0	0	0	15	59	4	1	10.3
Thinking Forum	101	21	0	0	0	0	0	0	15.3
Reference Material	0	0	21	0	0	1	0	1	2.9
Time Spent on Compulsory Activity – Level Quiz	**381**	**245**	**250**	**367**	**3**	**433**	**184**	**100**	**245.4**
Time Spent on Optional Activities	**144**	**30**	**28**	**187**	**101**	**98**	**21**	**4**	**76.6**
Total Time Spent on Online Learning	**525**	**275**	**278**	**554**	**104**	**531**	**205**	**104**	**322**

From the online participation analysis, it was found that the mean times students spent on the pre-class activities 'Chapter Preview', 'Warm-up Quiz', 'Matching Game' and 'Weekly Assignment' for the semester were 10.5, 16.8, 8.9 and 0.4 minutes respectively. The mean times spent on the post-class activities 'Chapter Review', 'Level Quiz', Chapter Quiz', 'Chapter Exercise', 'Thinking Forum' and 'Reference Material' were 4.0, 245.4, 7.8, 10.3, 15.3 and 2.9 minutes respectively.

The system recorded that the students spent much time in doing the 'Level Quiz' and all of the 8 interviewed students shared their experiences about it, saying they spent time doing this activity. On the other hand, only 1 student mentioned the 'Weekly Assignment' in the interviews and the system record showed they seldom accessed the activity. Exceptions came from the 'Thinking Forum'; 7 students mentioned that they did it, but the recorded time in the system was low.

The inconsistency was hinted at during the interview conversation with Students G, that sometimes students logged into the system with only one account but they actually learnt together with the online activities.

> *Researcher: You mentioned you had used your classmates' account to visit the thinking forum or watch video or read a journal together. Would it be frequently that you did online study with your classmates? If so, how many times per week and how long did it take each time?*

> *Student B3: About on a bi-weekly basis. We learnt together. We also did the exercise together in SOUL and we discussed difficult areas. We exchanged our views or ideas for calculation.*

> *Researcher: How long each time?*

> *Student B3: It is difficult to say. We usually did it after the lunch break.*

Researcher: May I know the least and the longest time?

Student B3: The least time would be about 10 or more minutes if the questions were easy. The longest time was about 3 or 4 hours as we did difficult questions and it took time to solve the questions.

Researcher: That meant your actual time spent on SOUL would be much longer than from your log-in record.

Student B3: Yes. I think I actually spent much more time to study online materials.

Student B3 and his classmate spent much more time in the online platform than the system recorded, as they sometimes studied together. They logged into the system with a single account, but they studied and did online exercises together.

Student A2 used the keywords for searching in the Internet while she did the 'Thinking Forum', and the searching time and thinking time was not recorded by the online platform. In the illustration of Student A2, it was also found that the students might not always find useful resources during online searching. In her case, the searched results 'were not relevant to the question' at the beginning. This implies, during online searching, she had interpreted the resources found and generated some thoughts during the process. As a result, she continued to search and read, and finally found and learnt the useful resources.

Student A2: When I first read the question, I didn't really understand what it was talking about. I went to Google and used the keywords for searching and I found some hints for the answer. But I found that the searched results were not relevant to the question and I just ignored them. After searching and reading more, I associated the similar results. After understanding more from them,

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I tried to answer the question by myself. Later on, with further searching and learning, I found that my answer posted was incorrect. So, I went to the forum again and modified the answer.

This implied that the learning process happened when she left the online platform and was accessing other webpages. The system only recorded the time she spent reading the questions and typing in the answers. As a result, some students might have spent much more time in the online platform than the system recorded.

It was found in the study that some online learning activities outside the learning platform could not be recorded in the system. As a result, online participation observations using the system database might probably have underestimated the actual online learning time. As well as online searching outside the learning platform, the learning times spent on other websites could not be recorded. Other possibilities include failures to signal finishing an activity or that the activity might be downloaded for doing offline. Conversely, online participation observations using the log file in the system might have shown more time than the students actually spent in the learning platform, as a user could log into the LMS but actually not be learning in the platform (Dehnvi, Sharafi and Nematbakhsh, 2011). However, this study did not provide evidence to support nor to deny this idea. Nevertheless, from both the individual interviews and online participation observations, it was found that the students spent lots of time in the 'Level Quiz' activities. They also spent some time participating in other optional learning activities in the platform and even learning from online searching in the Internet. With further calculations based on Table 19, Table 20 shows the total time spent by Class A and Class B students on doing compulsory and optional activities. It was found that the students in Class A spent 72% and 73% time respectively more than those in Class B.

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Table 20 Mean Time of Participating in Online Learning Activities (Minutes)

Online Learning	Total Time of Class A (Student A1, A2, A3 & A4)	Total Time of Class B (Student B1, B2, B3 & B4)	Percentage that Class A Spent Time More than Class B
Compulsory Activity – Level Quiz	1243	720	72.64%
Optional Activities	389	224	73.66%
All Online Learning Activities	1632	944	72.88%

Since the students in the course were allocated randomly to the classes, it might not be possible to use their backgrounds to explain the deviation. Besides the variation found in online learning time in the system record, the students in Class A were also found to be spending much more time in both the traditional and the online learning, as recorded in their study logs. Analysis, with statistical test comparison, of time spent in traditional and online learning of the 12 and 13 students in Class A and Class B recorded in the study logs, and the possible explanations are discussed in detail in Section 4.5 in relation to instruction in the blended learning course.

4.3.2 How are Traditional Learning and Online Learning Linked?

4.3.2.1 Linking Traditional and Online Learning

All 8 interviewed students said they had linked traditional and online learning by doing both traditional and online learning activities. For example, Student B2 shared her experiences in acquiring knowledge through blended learning in the interview. She found she did not learn completely with traditional learning in the class and then she used online learning after the class learn. After that, she did further online exercises.

Student B2: Blended learning could help me to understand the content completely instead of just understanding part of it. I remember when I first did the cash flow calculation; a part of the questions required me to do cash flow calculations for a number of years. However, I did not know the method to carry forward the amount. I was already confused in the lecture. When I was organizing the question to ask, the teacher left the topic. After I went back home, I viewed the 'Chapter Review' to try to understand it by online learning. Then, I did it. Once I learnt the relevant skills, I also went on to do the online exercises and MC. I learnt both the calculation method and theoretical concept. I could acquire the skills and knowledge of cash flow through the above online learning process.

Another quote showed how Student B4 studied in blended learning by participating in both traditional and online activities; she found the blend was suitable to her.

Student B4: The MA course contained both calculation and contextual components. I could learn the calculations by myself by doing the online exercises and checking the answers. I might able to learn the contextual content by myself or need to be taught by the teacher in class. The teacher could emphasise the areas where he found the students had difficulties in understanding. The combination of face-to-face and online learning was suitable to me. The 3-hour lecture was not able to satisfy the needs for both contextual and calculation parts. Lectures could only focus on more teaching theories while I practised the calculation part at home. In this case, they could complement each other and I could learn efficiently.

The course leader said the teachers told him that the students also found new learning activities by themselves to learn. It showed the blended learning mode changed the students' learning practices.

Course leader: After having it (blended learning), the teachers told me that students found more new learning activities by themselves to help them learn.

Teacher A in Class A instructed her class to do the 'Thinking Forum' after class by having an online discussion about a case. She consolidated the discussion among the students and extended the group discussion in the next class. It showed the design of blended learning integration by the teacher explicitly directing the students' learning in an integrated blended mode. Teacher A described how she made use of this activity to facilitate students' sharing, interaction and problem-solving in the interview.

> *Teacher A: First I assigned them to do and then see their results. I checked what they did. When they came back to class, I asked them to share. After that, I reviewed with them what I had consolidated from their discussion online and shared the particular areas that in which they did not do well… They would have more interactions. They did preparations before class and this helped them. Sometimes they discussed online about what they thought before class. When they attended the class later on, they shared with others. All the students could also see the discussion online and they solved other problems together. This could accelerate their thinking and direction.*

All the 4 interviewed students in Class A also said Teacher A asked them to do the 'Level Quiz' questions in groups in the class and then asked the groups to present to the classmates how to do the questions. It was found that, with Teacher A's instruction, evaluation and facilitation in the 'Thinking Forum' activity, and with Teacher A's facilitation in the 'Level Quiz' activity in groups in the class, the students found their learning strengthened and they understood more via interaction, as illustrated by Student A1 and Student A2.

> *Student A1: The teacher showed some 'Gold Level' MC questions on screen and asked us to complete them in groups. We calculated the answers and compared them to the options on screen. Our revisions became efficient and time was saved when we revised them together via the online system. Besides, the teacher could identify the area which needed to be clarified or repeated. This*

was also another way for our quick revision... My impression of the topic was strengthened. Although the teacher did not go through all questions in the online environment in the class, during self-study time, if those questions were discussed in class, especially the parts that could easily go wrong, I could remind myself to pay more attention to them.

Student A2: We usually answered the question separately first and combined our answers to see if there were any similarities. When we found the ideas of our members were good, we combined the information and, later on, answered the question in class... It provided me a chance to discuss and interact with other classmates and made me realise that I needed to work more on some areas to understand the content of the whole course.

In this example, the teacher integrated online learning activities with classroom collaboration. The students found that their learning became efficient and strengthened with instruction, teaching support and interaction. This illustrated that the blended approach was a more holistic approach in providing an overall learning environment (Bu and Bu, 2012) and connected learning in the classroom and beyond (Bentley, 1998).

As a whole, it was found that the students studied both the traditional and online learning activities, some assigned by teachers and some initiated by themselves. It was also found that this course allowed a high level of flexibility to teachers and students in blending their teaching and learning. With such flexibility, the teachers and students had varied experiences in learning through choosing and linking traditional and online activities through both instruction and individual drive. The role of the teacher was as an instructor during the lecture and assigning exercises and as a facilitator, in Class A, while using the 'Thinking Forum' and the 'Level Quiz' in blended ways. The students' independence and learning autonomy were found during the students' self-study in the online environment.

4.3.3   Discussion about How Students Learn in a Blended Learning Environment

The first research question was how students learn in a blended learning environment. The sub-questions were how they learn through the learning activities and how traditional learning and online learning are linked. The finding suggested that students in this course could learn in the blended learning course by integrating traditional and online activities by the teachers and by themselves. In the traditional classes, they attended lectures and did class exercises together. Sometimes, they had teacher-led discussions and presentations in groups. After class, the students learnt with traditional learning activities like reading textbooks and doing assignments. For online learning activities, they did the 'Level Quiz', which was the compulsory activity of the course. Besides, students in Class A also did the 'Thinking Forum' as it was also a compulsory activity designed by Teacher A. The students' learning in the MA blended learning, as designed and implemented by the School, is illustrated in Figure 11.

This figure illustrates how the students learnt in the blended learning course, as designed by the course leader and teachers. The teachers led the students to participate in the structured prescribed traditional and online activities. They linked the students' traditional and online learning by assigning and encouraging them to do the online activities and to reinforce their learning from online activities in the traditional classes. For traditional learning, the students did traditional activities in the class and after the class as instructed by the teachers. The communication medium was the classroom. The teachers gave instruction and had discussion with the students. They also took the roles of facilitators of the discourse. For online learning, the students did online activities in the

online platform. The teachers gave instruction of online learning in the class. In Class A, the teacher instructed the students to do 'Thinking Forum'. She consolidated the discussion among the students and extended the group discussion in the next class. The communication medium among the students was the online platform. However, the communication medium among the teachers and students was still the classroom as they had the discussion in the class. The unstructured optional activities were available in the online platform as additional online resources for the students to explore by themselves as reference materials.
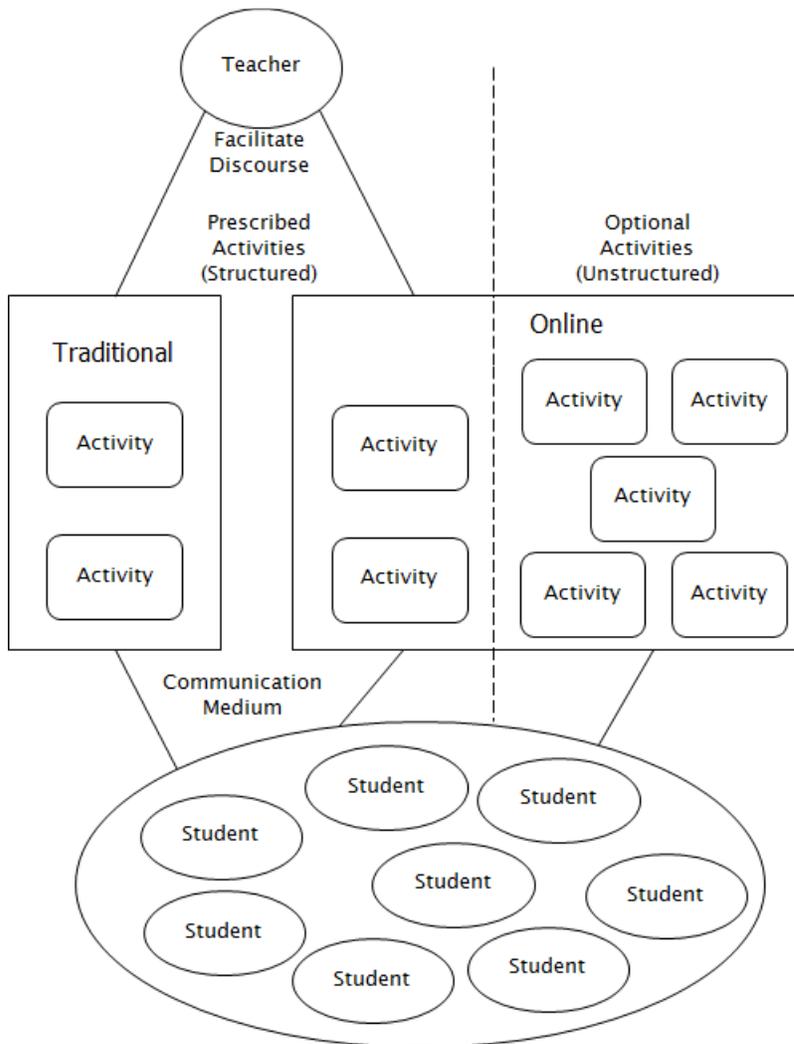
Figure 11 Learning in the Blended Learning Course

However, the students participated actively in the online learning activities, not only those designed by the teachers. They were active in exploring the online activities in the platform not designed by the teachers, and also explored resources through searching in the Internet. Figure 12 shows the learning that actually occurred in the course.
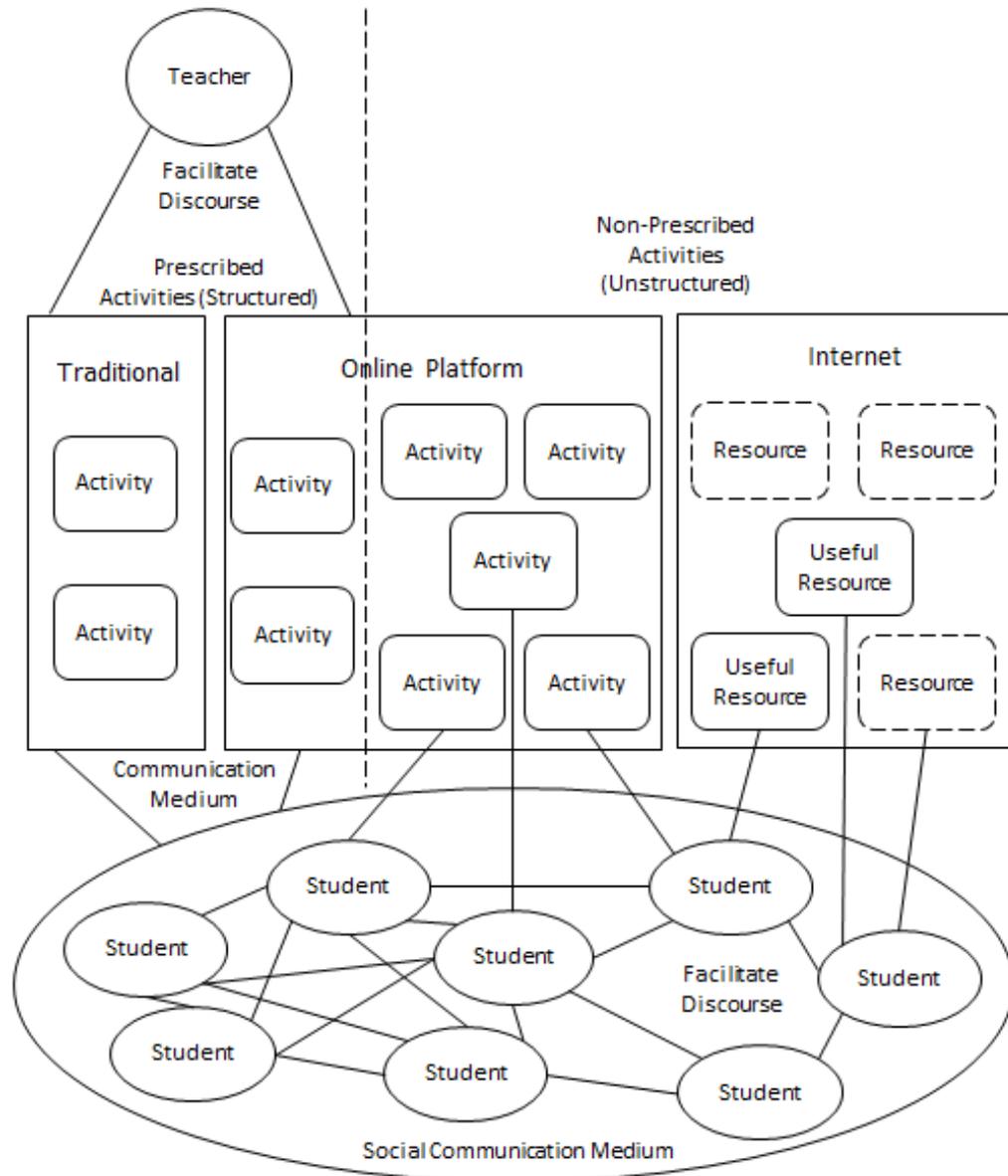
Figure 12 Blended Learning in the Management Accounting Course

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For the prescribed activities, the teachers led and gave instructions for the traditional and online learning activities. In addition, the students engaged in the non-prescribed activities in both the online platform and the Internet. The students explored the non-prescribed online learning activities and chose to participate in those which were suitable for their learning, and they searched the Internet to find useful learning resources. In the figure, some online activities and resources were connected to individual students as the students accessed different activities and resources as directed by themselves. Most of the time they learnt from the non-prescribed activities; they directed their own learning. Some of them used the online activities and resources to solve their learning problems and some explored materials which were not designed in the course.

Autonomous learning through participating in non-prescribed activities was found in this course. As discussed in Section 4.3.2.1, the students explored new learning activities by themselves to learn. It showed the blended learning mode changed the students' learning practices. The students directed their learning and searched for learning resources by themselves. They learnt through interaction with others or integrating learning resources. From this, they directed themselves in the cognitive process. The teachers played a role in sometimes designing the teaching method and giving direct instruction. On occasion, the teachers consolidated the activities with them. However, most of the time, the students did self-learning by themselves and interacted with their peers, which was not designed or directly instructed by the teachers. In the interview, Student B4 explained how she learnt without any instruction from the teacher. She directed her own learning by finding suitable learning activities in the online platform.

Researcher: From our discussion, it seems you would like to look for something online which was not instructed by the teacher in class.

Student B4: Yes.

Researcher: Can you say more about this?

Student B4: When the teacher discussed the contextual or theoretical content, I found that they were not detailed enough and the lecture notes were not sufficient. Besides, the teacher focused more on calculation but only mentioned a little bit about the theories. I think it was not enough for me and so I wanted to practise them on the SOUL platform.

Researcher: How did this help you to understand the learning content?

Student B4: During my learning, I was more concerned with learning theories. I usually did online learning the night after class every week to refresh my memory and understand more as I just understood the theories in class. For the calculations, I took photos for screen capturing if I got the answer wrong and then revised it again afterwards. The teachers usually mentioned the theoretical content very briefly during class and I might not have been able to understand in depth. Hence I put more effort into doing online exercises when I was at home.

Even though she understood the content taught by the teacher, she learnt further with autonomous online learning to confirm her understanding.

Researcher: So when you got the wrong answer and did not understand the explanation, had you tried to understand it somewhere else?

Student B4: Yes. The quiz was in Flash format. The explanation of a question appeared only immediately after I answered the question. I had to take a picture of the explanation and search for the information afterwards.

Researcher: What did you do after taking the picture?

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Student B4: I studied again and looked for the reason why I was wrong. I would first search the answer from the notes and then seek advice from my teacher or classmates if I still did not understand.

She further described how she made use of the social networking application to collaborate with her classmates.

Student B4: Usually, when I was doing the exercises and I did not understand how to do the calculation, I took a picture and sent it to my classmates and asked them. After they completed it, they sent the answers with steps in a picture back to me.

In this learning process, the students learnt among themselves and without the support from the teacher. This illustrated as an example that online learning moved the role from the teachers to the students so that the learning was controlled in the hands of the learners (Chow and Cheung, 2008). During self-learning, it could be seen that the students were directing their learning. In this case, the student took the initiative, with or without help of others, diagnosed her needs, formulated goals in solving the problem, identified learning resources, implemented a learning strategy by initiating the searching, and evaluated the outcomes by learning and modifying the answer. The issues relate to using social media to learning is discussed in detail in Section 4.4.2.4 on non-prescribed online collaborative learning.

As discussed in Section 2.3.4, autonomous learning is a competing concept that is often interchangeable and similar to self-directed learning (Hiemstra, 1999). Self-directed learning, as defined by Knowles (1975), was demonstrated by the students in this course, and supported by quotes as evidence as shown in Table 21. The students took the initiative to explore the learning activities and resources, diagnosed their learning needs

in order to obtain useful learning resources, formulated learning goals for acquiring new knowledge, identified learning resources and determined whether they were useful for their learning, chose and implemented appropriate learning strategies by collaborating with their peers using social media tools, and evaluated learning outcomes by confirming whether or not they had learnt from the process. They directed their learning with autonomy in the blended learning course. The behavioural change of the students from only following the teacher's instructions in the traditional learning mode to the exploration of more online learning activities in the blended learning mode is discussed in detail in Section 4.4.1.2 on engagement in blended autonomous learning.

Table 21 Self-directed Learning with Learning Autonomy in the Course

Elements of Knowles' Self-Directed Learning	Evidence	Self-Directed Learning with Learning Autonomy in the Blended Learning Course
Individuals take the initiative	The student looked for something online which was not instructed by the teacher in class.	The students took the initiative in exploring for the learning activities and resources.
Diagnosing their learning needs	"When the teacher discussed the contextual or theoretical content, I found that they were not detailed enough and the lecture notes were not sufficient. Besides, the teacher focused more on calculation but only mentioned a little bit on the theories. I think it was not enough for me."	The students diagnosed their learning needs and found traditional learning to be insufficient.
Formulating learning goals	"I wanted to practise them."	The students formulated learning goals to practise on what they had learnt.
Identifying human and material resources of learning	"During my learning, I was more concerned with learning theories. I usually did online learning at night after class every week to refresh my memory and understand more… Hence I put more effort in doing online exercises to learn when I was at home."	Students identified online learning resources after class.
Choosing and implementing appropriate learning strategies	"When I did not understand how to do the calculation, I took a picture and sent it to my classmates and asked them. After they completed it, they sent the answers with steps in a picture back to me."	The students chose and implemented appropriate learning strategies by collaborating with their peers using social media tools.
Evaluating learning outcomes	"I studied again and looked for the reason why I was wrong. I would first search for the answer from notes and then seek advice from my teacher or classmates if I still did not understand."	The students evaluated the learning outcomes by confirming whether they learnt.

The learner autonomy in this course revealed 'the independence of thought, individualised division making, and critical intelligence' (Hiemstra, 1999:12). It also served as another example of the use of online technologies to allow students to become self-directed when learning (Wang, 2010). The learner autonomy discusses in this section is in the independent dimension. In this study, the social dimension of learner autonomy is found. The findings and discussion of the social dimension is in Section 4.4.3.

4.4 Why do students engage in a blended learning course?

In this section, the findings relating to the second research question and its sub-questions, are reported and discussed.

RQ 2. Why do students engage in a blended learning course?

SRQ 3. What form does engagement take within the blended study?

SRQ 4. How does collaboration facilitate students' study in blended learning?

The discussion of the findings relating to the second research question is in Section 4.4.3.

4.4.1 What Form does Engagement Take within the Blended Study?

4.4.1.1 Engaging in Blended Learning

The 8 interviewed students explained their engagement in blended learning in the individual interviews. All 8 students said that blended learning was helpful. As described in Section 2.2.2, descriptions related to helpfulness, usefulness and effectiveness were put under the sub-theme of helpful. All of these describe how they found blended learning to

be helpful. For example, when talking about the online activity of the 'Level Quiz', Student A3 said its exercises were helpful for his examination.

Student A3: The exercises were helpful for my examination and thus I studied using it before the examination.

Seven interviewed students said online learning helped them to understand the learning content. Student B2 explained how the 'Chapter Review' helped her to understand when she did not fully understand the contents in the class.

Student B2: Since the class size was relatively large the teacher could not make sure all of us learnt the topic. But when I did not fully understand, I repeated viewing it online until I got more understanding. Through repeating viewing the points, I could understand more and so I considered this could help me with my learning.

Four of these students found blended learning helped them to have deep learning. They said it facilitated them 'to discuss and think', to engage in 'more in-depth learning', and to have 'deeper understanding' and 'further thinking'. For example, Student A2 illustrated that she had learnt more in the 'Thinking Forum' as the discussions were more in-depth.

Student A2: It was quite interesting because I was able to learn more. Some discussion contents in the 'Thinking Forum' were not learned in class; they were more in-depth.

Two students said they had learnt to apply the knowledge, as illustrated by Student A1.

Student A1: It further helped me to learn how to apply the knowledge.

Six of the interviewed students liked blended learning. Three of these rated blended learning as good, 2 said it was interesting and 1 explicitly said she liked it. For example, Student A3 found the blended learning course was more interesting as he could learn from the activities through diversified learning modes.

> *Student A3: The blended learning course was more interesting than the traditional course as the learning ways were more diversify. I could study and understand the topics through activities in different modes.*

Four students found blended learning flexible. They said, respectively, that it allowed them to have 'more learning options', 'more ways for revision', 'another channel for study and convenient', and a 'good way to ask questions via online channels'. Student A1 illustrated that online learning was a learning option for finding solutions when he had problems. Student B1 said online learning was convenient.

> *Student A1: When I found difficulties in my studies, it provided me a channel to solve the problems by myself. I had more learning options and needed not just to rely on the textbook.*

> *Student B1: It was convenient to go online, and with more explanations.*

It confirmed that online learning could enhance the flexibility and convenience of the courses (Mason and Rennie, 2006).

Five students found that blended learning helped them as the online activities helped them to reinforce their learning in the traditional classes. Three of them said online learning helped them to refresh their memories after class, 1 said it reinforced the concepts learnt, and 1 said it allowed him to practise the learnt content more. For

example, Student B2 explained that the 'Chapter Review' helped her to refresh her memory after class.

> *Student B2: I could use online materials and online PowerPoint to refresh my memory and learn more.*

Table 22 summarizes the students' reasons for engaging in blended learning.

Table 22 Reasons of Engaging in Blended Learning

Engagement	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4
Helpful	✓	✓	✓	✓	✓	✓	✓	✓
Understand	✓	✓	✓	✓	✓	✓		✓
Deep	✓	✓	✓	✓				
Applicable	✓	✓						
Like	✓	✓	✓	✓	✓		✓	
Flexible	✓		✓		✓			✓
Reinforce	✓				✓	✓	✓	✓

The students engaged in blended learning activities because of their helpfulness, they liked it and they found it flexible in helping them to understand learning, reinforce learning and apply knowledge. By engaging in blended learning, the students demonstrated deep learning through having interactions with others and doing learning activities (Biggs and Watkins, 1995). The students could learn deeply through engaging in the blended learning activities.

4.4.1.2 Engaging in Autonomous Learning

Three students said they were driven by curiosity to access the online activities at the beginning but they became engaged in learning after they found some activities were helpful or useful to their study. Student B2 explained that she accessed the online

activities because of curiosity. After that, she found the learning activities useful for understanding the content.

> *Student B2: I was curious at first since I had found lots of the things in the online system, like playing games. In fact, I could not understand everything if I just attended Teacher B's lecture. Then, I tried to see whether the online activities could help my studies and found that these activities were useful for understanding. As a result, I tried to do the online activities, of course not limited to the 'Silver Level' and 'Gold Level' quiz.*

In this case, Student B2 explored the learning options from curiosity, which was a characteristic of motivation (Gottfried, 1990).

During the online learning, the students were given the autonomy to decide about which learning activities to participate in, except the 'Level Quiz' which contributed to 5% of the overall course assessment. All 8 students explained how they chose to learn by looking to see if the learning activities were suitable, useful and helpful to them. Student A4 shared her experience of choosing the online activities during her learning. Even though the 'Level Quiz' was assigned by the teacher, she compared it with other non-prescribed online activities to make her learning decision.

> *Student A4: The 'Chapter Quiz' questions were simple when compared to those in the 'Level Quiz'. It asked r simple conceptual questions. The 'Level Quiz' needed me to have further thinking to answer the questions. So I found the 'Level Quiz' was much more useful than the 'Chapter Quiz' and therefore I chose to do the 'Level Quiz' only.*

Four students mentioned they had engaged in learning to acquire additional knowledge which was not in the course syllabus. Additional knowledge was acquired from online referencing materials. They learnt practical skills or real-life applications. Student A1

explained that he had engaged in online learning as he found the online reference materials helped him to learn without the teacher's guidance.

> *Student A1: The online system contained selected reference materials. It was a place for me to understand the content before I asked questions of my teachers. It also allowed us to learn and solve problems by ourselves. It assisted my other learning without being guided by the teacher.*

He searched for references online because the levels of difficulty of their content suited him the most. When he found useful content, he shared it with his classmates through Facebook. He encouraged others to do this with him and solved the problems with others. He described how he shared the online learning resources with others.

> *Student A1: I found online references that were more suitable to my learning as the level of difficulty of the content would suit me most... Some of them were obtained from the ACCA website... We found a question which was worth doing or for discussion... We posted it on Facebook and encouraged others to do it. We also solved the problem together.*

From these students' experiences in identifying and searching for online learning resources, it was found that they directed their learning in blended learning without the teacher's instructions. After they had found useful resources, they determined which of them would be useful to others and then shared them. They initiated online discussions and solved problems together, without guidance from the teacher. This affirms that blended learning promotes greater autonomy for learners (Grigoriadou, Papanikolaou, Magoulas and Kornilakis, 2001) and that the active roles of online learners can contribute to knowledge construction in blended learning environments (Shea and Bidjerano, 2010).

In the interview, the course leader compared the students' learning before and after having blended learning. It was found that, with blended learning, the students did not only follow the teacher's instructions to learn but also directed themselves to learn through new learning activities. From the quote, it was found that the course leader and teachers knew the students' learning practices changed with blended learning.

> *Course leader: Before that, the students learnt in a mechanical way. They only followed the teacher's instruction to learn. After having it, the teachers told me that students found more new learning activities by themselves to help them learn.*

As said by the course leader, the students only followed the teacher's instruction to learn. It implied that the students did not explore the non-prescribed learning activities, or the course leader and teachers did not know if the students did so. However, the active exploration of non-prescribed online activities was found in blended learning. It might due to the convenience and flexibility of online learning which increased the easiness of accessing online activities and resources. Furthermore, the students might engaged in online activities because of their helpfulness, they liked it and they found it flexible in helping them to understand learning, reinforce learning and apply knowledge, as discussed in Section 4.4.1.1.

In the online participation observations, it was found that all students accessed online learning activities without being instructed to do so by the teacher. Instead of following the teachers' learning design, the students showed individual drive, curiosity and motivation in directing and designing how they learned. The role of the learning autonomy was very important in their engagement in the blended learning environment.

4.4.1.3   Engaging in Achieving Learning Outcomes

All of the 8 students explained they engaged in blended learning to achieve the learning outcomes. All of the 8 interviewed students said they engaged in blended learning and participated in learning activities for the course assessment, which included an examination, tests and online participation which contributed 5 marks to the overall assessment. It was found that all 8 students were concerned about the examination. Four of them said they were examination-oriented and only focused their study on examination-related content. One of these students had not done the 'Matching Game' and another had not done the 'Thinking Forum' because they found these learning activities were not related directly to the examination. Four students said they did the 'Level Quiz' to practise before the examination and 2 of them believed it could help them obtain higher marks in the examination. Besides doing online activities, 3 students said they read notes and answered questions in paper format to prepare for the examination. Student A3 explained he did the learning activities for the examination and test.

> *Student A3: Before the mid-term test or examination, I did all the reviews covered in the online system. Since the online materials are much simple and concentrate on the key points, I could spend less time on review and catch the key points easily. Therefore, I did the review before the examination.*

Seven students found that the online participation marks motivated their learning in the online environment. The 5% online participation marks attracted them to access the online activities. Student A3's case was typical in that he was motivated to study online by the 5% marks but he was engaged in online learning after he found the activities helped him to prepare for the examination.

Student A3: Although 5 marks in the course seem to be little, these 5 marks could be critical for deciding whether I could pass in the examination if my result was marginal. So these 5 marks motivated me to do the quiz. Before the examination, I looked into other course content and checked what was important. These 5 marks made me do the exercises on SOUL. It also let me know the exercises were helpful for my examination and thus I study using it before the examination. These 5 marks did encourage students to take part in the exercises.

The findings about the students' engagement in achieving the learning outcomes confirm that some Hong Kong students were driven by intrinsic motivation with the mastery of goal orientation (Watkins, 2009). However, in this case, their goals were not only to acquire knowledge but also highly associated with marks and examinations. Nevertheless, they engaged in learning with the drive to achieve these goals.

The students were also found to have engaged in collaborative learning. While the students engaged in prescribed collaborative learning, they also engaged in non-prescribed collaborative learning.

4.4.2   How does Collaboration Facilitate Students' Study in Blended Learning?

Collaborative learning was an important issue found in this study. The students had prescribed and non-prescribed traditional and online collaborative learning.

4.4.2.1   *Prescribed Traditional Collaborative Learning*

All of the 8 students experienced prescribed traditional collaborative learning in the class. They all interacted with their teachers and other students. Six students said the teachers asked them questions during lecture to check if they learnt the taught topics. Four students said they asked their teachers questions in the class when they had problems.

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Three students found interacting with the teacher useful and 2 of them liked asking the teacher questions. Student A2 illustrated the interaction through asking questions in the class and Student B4 explained that asking questions could help his learning.

Student A2: During the lecture, she asked questions to ensure the students were understanding the concept. At the end of teaching a topic, she gave us exercises to do. We could ask questions if we did not know how to do them.

Student B4: Asking questions directly in class allowed me to acquire the knowledge immediately and then ask follow-up questions.

Student A2 also said she had group learning in the class. In the quote, she described how the teacher divided them into groups and they did class exercises together.

Student A2: Usually, the class would be divided into groups and each group was required to submit the answers to the exercise for the teacher's marking before the end of the lecture. The group could leave only if all the answers were correct.

The students in Class A had group learning activities. In the class, the teacher asked the students to log into the learning platform and access the 'Level Quiz' together. Teacher A formed the students into groups in the class to demonstrate the steps in the calculation in the 'Level Quiz'. In the classroom observations, I found that the students were divided into six groups. Each of the groups was assigned to do one question in the 'Level Quiz'. Of the 6 groups, 2 were then asked to demonstrate the steps of the calculation to the other students. The students learnt from each other through group work and demonstration. Teacher A and Student A3 shared the group learning experiences in the interviews.

Teacher A: Usually I told them what I would teach in the next lesson and then assign them into groups. Just like when you visit in a lesson, I asked the students to come up to do the Level Quiz. They did it together and learnt together... Interaction among students increased for courses with blended mode. They discussed among themselves if they understood or not... Blended learning increased interaction among students, as they would share whether they could do the online exercises. Also they needed to do presentation by groups and therefore they needed to closely communicate together. For only in-class exercises, they only did by themselves and would not do it in groups.

Student A3: As I mentioned, we had a competition activity in class. We were separated into groups and did the 'Silver level' or 'Gold level' of the 'Level Quiz' together again in class and saw which group could get the highest marks.

Teacher A also asked the students to discuss the open-ended questions in the 'Thinking Forum' together in the class. She found that the interactivity increased as they had thought before class and it helped them to think, as illustrated in the quote.

Teacher A: They would have more interaction. They did preparation before class and this helped them. Sometimes they discussed online about what they thought before class. When they attended the class later on, they shared with others. All the students could also see the discussion online and they solved other problems together. This could accelerate their thinking and identifying direction.

Student A1 in Class A illustrated how the teacher made use of the 'Level Quiz' to help students learnt efficiently in groups. He also found the teacher could identify the areas which needed to be taught again.

Student A1: I remember in the last class of the MA course, most of the content was taught. The teacher showed some 'Gold Level' MC questions on screen and asked us to complete them in

groups. We calculated the answers and compared them to the options on screen. Our revision became efficient and time was saved when we revised them together via the online system. Besides, the teacher could identify the area which needed to be clarified or repeated. This was also another way for our quick revision.

During classroom observations, I observed the group demonstration of the 'Level Quiz' in Class A. The students behaved very actively in the group activities. The students had happy emotions when interacting with peers during discussion. They discussed in groups using Chinese and presented to the class using English. This lessened the students' language barriers, which is discussed in Section 4.5.2.1 on personal barrier. No group activities were found during the classroom observations in Class B. In the interviews, the teacher and students in Class B also did not mention they had group learning in the class.

Although group learning was found in Class A but not in Class B, from the interviews, it was found that the students in both classes found their blended learning course helpful (as explored in Section 4.4.1). However, in the study logs, it was found that the average times for both online and traditional learning, except for the compulsory lecture class, for the students in Class A were around double those of the students in Class B. This issue was discussed in more detail in Section 4.5.1, about instruction.

4.4.2.2 Non-Prescribed Traditional Collaborative Learning

All 8 students collaborated with their peers in the class. Three students said they asked their classmates questions if they did not understand. The reason was that they found asking peers questions was easy and direct, as Student B3 said.

Student B3: Since the class size was large, the teacher might not be able to answer my questions even if I wanted to ask. However, my classmates who sat next to me could answer my questions more easily and directly.

Three students said they formed learning groups to study together after class. They asked their peers questions after class and two students mentioned that they liked communicating with peers. Student B3 and Student A1 described how they communicated with their peers.

Student B3: We learnt together. We also did the exercise together in SOUL and we discussed difficult areas. We exchanged our views or ideas for calculation… Usually I discussed with my classmates with good academic results or I asked my relatives for help... I preferred to seek help from my peers instead.

Student A1: We formed peer groups for revision and helped each other to learn and tackle problems. When we noted the errors, we did the exercise together and compared our answers.

The students did not mention a lot about non-prescribed traditional collaborative learning. Instead, they shared a lot about non-prescribed online collaborative learning, which is reported and discussed in Section 4.4.2.4.

4.4.2.3   Prescribed Online Collaborative Learning

Email communication was a way for students to ask their teachers questions in the MA course. However, three students said they did not want to communicate with teachers via email because they found it was not convenient, they had difficulty in writing emails in formal English and the feedback was not in time.

In the MA course, the 'Thinking Forum' was the only prescribed online learning activity that required collaboration in the online learning platform. In the two classes, only Teacher A had asked students to participate in the 'Thinking Forum' activity. As described in the Introduction chapter, the 'Thinking Forum' was a scenario with some questions initiated by the teacher for the students to discuss. All 4 interviewed students in her class found the activity helpful to their learning. A student explained that she always participated in the 'Thinking Forum' as the questions were complicated and she needed to modify the answers after posting. Sometimes, she needed to search for information from the Internet to find out the answer.

> *Student A2: 'Thinking Forum' was requested by the teacher. The number of access was high because I needed to modify my answers. The questions posted on 'Thinking Forum' were more complicated. I initially did not understand what the questions were referring to and needed to search on the Internet.*

This student further elaborated on how this online collaborative learning helped her study. As she mentioned in the quote, besides answering the questions asked by the teachers, the students needed to answer questions asked by the other groups. Those contents were more in-depth. During the process, the students discussed in the groups. She found this kind of learning facilitated her discussion and interaction with others and realised the need to learn more.

> *Student A2: The teacher requested me to complete 2 questions. I was asked to answer one of the questions. I was also required to answer other classmates' questions... It was quite interesting because I was able to learn more. Some discussion contents in 'Thinking Forum' were not learned in class, they were more in-depth... It provided me a chance to discuss and interact with other*

classmates and made me realise that I needed to work more on some areas for understanding the

content of the whole course.

There were no prescribed online collaborative learning activities in Class B. However, all the students in Classes A and B had non-prescribed online collaborative learning.

4.4.2.4 Non-Prescribed Online Collaborative Learning

The students were found to be involved actively in non-prescribed online collaboration in this course. Social media tools were used for their communication. All of the 8 interviewed students had used one or more social media tools to learn. The numbers of these students using the tools WhatsApp, Facebook and Skype were 7, 5 and 3 respectively. This section provides the findings and discussion about why and how they used the tools, their engagement in collaborative learning, and relationship of such collaborative learning with other influential factors.

The reason that they used several tools to communicate was that the tools had different special functions to facilitate their communication and learning. Through communicating via these tools, they learnt from collaborative learning. One student explained how they used WhatsApp, Skype, and Facebook differently.

> *Student A2: I remembered I used WhatsApp, Skype and Facebook with my classmates. We used*
> *Skype because it enabled real-time audio communication so that I did not need to waste time to*
> *type the words in message, and we usually scheduled a time to use it. WhatsApp helped to get in*
> *touch with classmates anytime while we used Facebook mostly for sending documents.*

Most of the students used WhatsApp to communicate in the MA course learning. Of the 7 students who had used WhatsApp to communicate, 5 mentioned that they communicated

in groups. In their communication, they mainly asked questions for the peers to answer when they had problems in learning and they discussed learning contents related to the examination. Student B2 illustrated what the students typically discussed via the groups in WhatsApp.

> *Student B2: I communicated with classmates through WhatsApp by creating a group. Then, we could discuss with other if we had problems in learning... At the same time, we guessed the examination questions together and did similar exercises together.*

Communication via WhatsApp was in text, audio or photos, with the questions. Three students described in detail how they learnt through collaboration using text, audio and photo messages, as shown in the quote.

> *Student B4: Usually when I was doing the exercises, when I did not understand how to do the calculation, I took a picture and sent it to my classmates and asked them. After they completed it, they sent the answers with steps in a picture back to me.*

> *Student A4: When I found difficulties in doing the exercises, I would send a text message or upload a photo for help. Then, others would reply to me via text or voice message. It would be better to use text or photos to present my queries instead of talking on the phone. I usually use it at night when doing self-study.*

> *Student B2: If I had a problem in learning, I would tell others the page of the textbook. Also, I would take photos for the questions I did not know and then uploaded to the WhatsApp group. Then, they would return their feedback/solution via typing in text. Text messaging was used than voice messaging since it was quicker to read and we did not waste time to listen.*

Student B2 further explained that the advantages of WhatsApp were that it allowed her to make voice recordings, type text and upload photos, at a relatively fast and convenient

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speed; she could add many people to chat in a group and it was free of charge. Another student, Student B4, preferred using WhatsApp audio to communicate rather than using the phone because of the merits of its asynchronous feature.

Researcher: You mentioned that classmates sent the answer back to you after computation, or explained to you by audio recordings. Did you talk directly on the phone?

Student B4: Seldom.

Researcher: Why?

Student B4: Because we needed to attend different courses and sometimes we did not know if others were busy. We did not want to disturb others and so we mainly communicated via WhatsApp.

In the study, the group size of the non-prescribed online collaboration using WhatsApp varied from 2 to over 10. In this study, Student B2's group had 4-5 students and Student B1's group had more than 10.

With the group audio feature provided in Skype, the 5 students who used Skype in communication in the MA course had audio group discussions with their peers via Skype. Two of them described what and how they discussed in relation to exercise questions and doing revision together in Skype as follows.

Student A3: We did the same questions together using multiple calls via Skype. When discussing how the item should be input, everyone showed their opinions and explained it. Finally we checked our answer consistency and took a look at those who had different answers.

Student A1: We usually used Skype for discussing theories. We talked directly. Sometimes we set up a meeting room. Although not all were available every time, others would still be online and do revision together.

The reason for using Skype was that it enabled real-time audio group communication and a student explained this as the reason they used Skype for communication.

Student A2: We used Skype because it enabled real-time audio communication, so I did not need to waste time to type the words in message and we usually scheduled a time to use it.

While having real-time communication, students could have discussions on learning activities that were more complex, for example, questions in 'Thinking Forum' with a case and open-ended questions, as Student A2 said.

Student A2: In the MA course, we got together for 'Thinking Forum'. We discussed what the questions were about.

Unlike the communication in WhatsApp which was asynchronous, the students either scheduled a time or had ad hoc communication in Skype when they had questions.

Researcher: Is it usually ad hoc communication?

Student A3: Yes. Usually someone raised the question and then we might discuss it together.

Student B1: Usually when I was doing exercises and didn't understand, I used Skype to see if classmates knew how to do it.

Student A2: We usually scheduled a time to use it.

One student used Skype in his personal computer instead of his mobile phone for communication. He mainly had one-to-one communications and sometimes had a

discussion in groups. He typed text, uploaded photos and printed the screens with graphics and passed them into Skype for discussion. He explained how he used Skype to discuss difficulties he was having in doing exercise questions.

> *Student B3: When I found a difficulty with a question, I printed the screen function and pasted it to the MS Paint and marked down the problem. Then, I uploaded it to Skype… I usually typed the text or uploaded the photo… I printed the screens with graphics and pasted them into Skype for discussion.*

The Skype group sizes ranged from 2 to 6 in this study.

The collaboration among students in Facebook was knowledge sharing and discussion. The 3 students who had used Facebook mainly used it as file sharing. One of them mentioned that the students posted the questions which were worth doing or for discussing into Facebook. They wanted to encourage others to do the questions and they solved the problems together. The quotes illustrate how students used Facebook to collaborate in the course.

> *Student A2: For Facebook, we might find some extra exercises for practice. We scanned the documents and sent it to Facebook for sharing.*

> *Student B1: I searched by myself, or if I had the materials on hand, I scanned and uploaded it on Facebook... Facebook was usually used to transfer files. If classmates searched some materials that were useful; we shared them there.*

> *Student A1: We could share the exercises via Facebook so that others could see them… Some of them were obtained from ACCA website and some of them were extracted from the textbook. As not everyone could afford to buy a textbook, we shared the book's content in Facebook. When we*

found a question which was worth doing or for discussion, we would post it on Facebook and

encourage others to do it. We would also solve the problem together.

The sharing of files for discussion was asynchronous. The sharing of files not only facilitated the sharing of knowledge but also encouraged learning in a collaborative way by allowing them to do the shared questions and solve shared problems together.

All 8 students said they used the social media tools when they had study problems and asked questions of their peers. Student A3's view was a typical view of the students in responding about when they used the social media tools in studying the course.

Student A3: When I had questions, I may ask. Sometimes I waited for others to ask me questions.

Social media tools were used when the students were doing exercises, doing revision and studying for examination, as 4 students explicitly stated in the interview.

Student B1: It was frequent when we needed to submit assignments and during the examination period.

Student A2: Both in revision and doing exercises.

Student B2: Usually 1-2 nights before the examination and when doing assignments.

Student A4: Skype was used before the examination as we could discuss the questions in a group to look for the solutions.

The social media tools were used to communicate throughout their study period. Three students stated the frequencies of usage, which varied from every 1-2 days to every 2-3 weeks. Social media tools were used more frequently before the examinations, and Student B2 explained that she could ask for help immediately if she found any problem.

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Researcher: Would it be more frequent before the examinations?

Student B2: Sure, definitely.

Researcher: Would you communicate it for whole day before the examination?

Student B2: Yes, if I had any problems, I would ask for help immediately.

Table 23 summarized the students' use of social media tools in learning.

Table 23 Summary of Using Social Media Tools in Learning

	WhatsApp	**Facebook**	**Skype**
No. of Students using the Tools to Learn	7	5	3
Major Features Used	Asynchronous communication with text, audio and photo messages.	File sharing and discussion.	Real-time audio communication.
Group Size	2-10	-	2-6

In the focus group interviews, 15 out of 24 of the students said they used one or more types of social media tools for online collaboration. The tools they used were WhatsApp, Skype, Facebook and WeChat. The numbers using these tools were 10, 8, 4 and 1 respectively. The results were, in general, consistent with the individual interview results.

All 8 students interviewed were engaged in communication via social media tools with their peers as they got help conveniently with timely support from others in this additional communication channel. The students found learning via online collaboration was helpful, effective and time-saving. Five students explained why they engaged in such non-prescribed online learning.

Student A3: It provided me more channels to communicate with others and it provided me a convenient way to seek help. I didn't need to wait to meet in the school to ask.

Student B4: It was good and made my learning easier and saved my time… I could learn faster and saved time when asking others and not searching for answers by myself.

Student B1: They were really convenient.

Student B2: We discussed the long question assignment, which included some case studies. That meant we had to consider from various perspectives when answering the question. I preferred to look for the fast and simple method to discuss. It was a good method as I could find out the best ways to answers the questions very effectively.

Student A4: It was an effective way to ask for help if I had problems during studies.

The students engaged in online collaboration via social media tools as they could learn from peers who had more knowledge. Two students sought help from others with better results or knew more about how to do the questions.

Student A3: Usually I text the classmates who get better results for help by WhatsApp.

Student B1: In the past, I might need to study notes on my own and I didn't know whom to ask when I didn't understand. But now, I could ask others and see if they knew how to do it, and seek their assistance.

Such non-prescribed collaborative learning showed that the students learned from more knowledgeable others through social interaction (Vygotsky, 1962). The following interview excerpt explicitly illustrates this as Student B3 learnt from others who were good in the course.

Researcher: Did it help your learning?

Student B3: Yes, since my classmates were good in the MA course and then helped me.

The students' learning through online collaboration using social media tools relates to both traditional and online learning activities. In the interview with Student B4, she illustrated how she used WhatsApp to seek help. The flexibility and convenience of the tools enabled the students to engage in learning. She even made use of WhatsApp to ask her peers questions during the class.

Researcher: Did you ask more questions when you were doing traditional exercises or online exercises?

Student B4: Actually both. I even took pictures and sent them to classmates for enquiries during classes. When I did revision at home, I did not need to describe the page or topic in detail. I just took a picture and sent it to others to ask questions. Sometimes my classmates might not be at home and unable to access the course material, so they only needed to see my picture to know what I was asking. Moreover, there is an audio recording feature available in WhatsApp. We also recorded the answers and I could repeat to listen to understand the explanation.

Three students found the problem of isolation in online learning was remedied by the collaboration in social media. Student A2 explained that, by studying together via the social media tools, they were encouraged to learn and could get help from others effectively.

Student A2: Usually I was less concentrated and felt bored when I studied alone. If there were some classmates studying together, we could encourage each other to learn. When I was doing exercises alone and found difficulties, I might stop that and couldn't move on. Through the online communication channels, e.g. Facebook and WhatsApp, I could get help from others and could continue my study.

Student A1's view best summarized the reason for students' engagement in collaborative learning via social media was in facilitating communication and idea exchange, learning and giving feedback with others, comparing the study progress, solving problems together, and studying without the feeling of loneliness. He said,

'They mainly helped us to facilitate communications and exchange ideas. We learnt and gave feedback to each other. By comparing our study progress, I could understand if I was lagging behind. We could discuss and exchange ideas when doing assignments. When problems came up, they could be dealt with immediately. I did not need to study alone.'

Although loneliness was a main problem of online learning (Cai and Yao, 2010), the use of social media tools allowed the students to study together and they did not 'need to study alone'.

It was found that the students' experiences were enhanced by engaging in non-prescribed online learning using social media tools; they perceived these as having the advantages of helpfulness, convenience, being an alternative option, and being effective and time-saving. The students' were engaged in that they were learning from a 'more knowledgeable other' in the zone of proximal development (Vygotsky, 1962). They also exchanged ideas and compared progress while learning via the tools. The online collaboration happened both inside and outside the class and it helped lessen the feeling of isolation for the students. This is not designed in the blended learning course. However, it is an impact of a blended design.

4.4.3 Discussion about Why Students Engage in a Blended Learning Course

The second research question was why students engaged in the blended learning course. The sub-questions were what form engagement takes within the blended study and how collaboration facilitates students' study in blended learning. First, from the findings, all of the students in the individual interviews studied in order to achieve the learning outcomes and obtain good results. They all stated the importance of online participation marks, which attracted them to access the online platform for the first time. Second, the students engaged in both traditional and online learning activities in the platform, which were helpful, liked by them and flexible to help them to understand learning, reinforce learning, apply knowledge and obtain good marks in the assessments. Half of them showed they had utilised deep learning during this engagement (Biggs and Watkins, 1995). Three students reported that they explored the non-prescribed online learning activities with curiosity and interest and it is believed this intrinsic motivation allowed them to engage in learning by themselves (Gottfried, 1990; Ryan and Deci, 2000).

In the prescribed activities, the teachers gave instructions in a structured way. However, there were some optional activities in the online platform. These non-prescribed activities served as learning resources. In the blended learning course, the students were found to be engaged in both teacher-led and autonomous learning. They engaged in collaborative learning inside and outside the classes. They had group discussions and presentations in the class, which they found to be helpful and interesting for learning. Outside the class, they interacted traditionally by talking to teachers and other students. They also discussed online in the discussion forum. They had collaborative learning, as designed and

facilitated by the teachers (shown in Figure 12 in Section 4.3.3). However, the collaboration was not limited to the designed level.

An important issue found in this study was that the students engaged actively in collaborative learning using social media. Most of the students gave very detailed examples of how they collaborated with their classmates and then learnt from them through the collaboration using social media tools. The results agreed with those of Stacey (1999) that the students learnt from more knowledgeable others through online collaboration in the MA course. Their collaboration using social media tools, most of them time, was initiated and facilitated by the students themselves, as shown in the bottom part of Figure 12. They directed their learning without instruction from their teachers. Their interactions were active in that they collaborated when they found new resources, they did problems together and they studied together online for examination preparation. The social dimension of learning autonomy (Sinclair, 2000) was found in the non-prescribed online collaborative learning using social media tools in this study.

Social application software can be used to support a social constructivist approach to support collaborative activities in online learning (Dalsgaard, 2006). Using the synchronous mode to learn from each other in Skype, the students had audio meetings in small groups. The discussion contents related to some questions which had led to problems or needed their deep thinking, like questions in the 'Thinking Forum'. Furthermore, they shared their newfound knowledge with others by file sharing and discussion in Facebook. The results affirmed that online learning provides an environment for social constructivist learning (Bonk and Cunningham, 1998).

Online collaborative learning using social media tools was associated with engagement. The students engaged in learning as they found online collaboration via social media tools helpful, effective, convenient, an additional communication channel and time saving. Through the communication, knowledge was constructed and transformed by the students (Dooly, 2008). It also confirmed that high levels of engagement were related to the presence and connections between learners in the online environment (Richter, 2013).

It was found in this study that the teacher's role had less influence, and sometimes even no influence, on the students' learning from collaboration via social media tools. The students initiated and controlled their learning through discussion, knowledge transfer and knowledge sharing via the social media tools with limited instruction or teaching support. The results confirmed, as an example, that learning through social media places the control of learning into the learners' hands (Li, Ullrich, Helou and Gillet, 2010). Although it is not designed in the blended learning course, it is an impact of a blended design as sometimes, the students collaborated because they had questions when doing prescribed blended learning activities.

4.5 How do External Factors Influence Student Engagement in Blended Learning?

Although the students directed their own learning sometimes in non-prescribed learning, the teacher's role was found to be important in prescribed blended learning as it influenced student engagement in blended learning. Here, the findings of the third research question about other influential factors of student engagement in blended learning and its sub-questions are reported and discussed.

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RQ 3. How do external factors influence student engagement in blended learning?

SRQ 5. How does teacher engagement affect students in blended learning?

SRQ 6. What are the barriers for students in blended learning?

SRQ 7. How do other factors influence the form of student engagement in blended learning?

The discussion on the findings of the third research question is in Section 4.5.4.

4.5.1 How does Teacher Engagement Affect Students in Blended Learning?

4.5.1.1 Design, Facilitation and Instruction

The teachers carried out the design and organisation by setting the curriculum and methods. In the MA blended learning course, the management gave flexibility for the teachers to decide the degree of blend in their classes and this led to the different blended approaches they used. The use of blended learning by the two teachers was different; Teacher A and Teacher B adopted integrated and supplemented approaches respectively. As defined in Section 2.2.2, integrated blended learning refers to 'the blend of online and traditional learning with pedagogical design'. Supplemented blended learning, also named non-integrated learning, refers to 'using online learning to supplement traditional learning without pedagogical design'. From the interview quotes, it was found that although both teachers followed the teaching plan, Teacher A had considered which parts of the content should be taught in traditional or online modes by assessing their appropriateness. On the contrary, Teacher B mainly left the decision to use online learning to the students.

Teacher A: Basically I will stick to my teaching plan... I considered from the result of whether using traditional or online learning would be better. For example, it was clear to use online learning for basic knowledge and simple calculation... Usually I emphasise theory-related contents in the traditional mode. I then expect the students to do more computation and learn foundation contents via online learning. Since the students learn by both listening in the class and doing online exercise at home, I want them to practise more in the online platform. I will analyse how they did from the data and explain the answers to them later in the class.

Teacher B: Actually I followed the teaching outline, which we called a teaching plan to see in each of the lessons what they needed to learn and what the learning objective was. Then, I looked at the textbook to see what I needed to teach and chose the question. Then I checked what kinds of activities could be done, for example, online activities and video, or other traditional activities like discussion, presentation or mini MC questions...The programme team gave us quite a lot of freedom to decide the marking criteria in online learning... I did not integrate the traditional and e-learning. Students used the online learning system by themselves and we would follow our materials to teach them. I know that online learning system contains some movies and interesting contents which I did not link it up in class but let them use it by themselves instead.

From Section 4.3.1, it was found that Teacher A had instructed the students to do 'Level Quiz' and 'Thinking Forum'. She integrated online and traditional learning by facilitating group discussion using these online activities, which the students enjoyed and found useful. On the other hand, Teacher B only asked the students to do the 'Level Quiz', as 5% of the overall assessment was allocated to the online participation in this activity and no follow up activities were done in the class. This could be explained by the teachers' for using the blended learning mode to teach the MA course. Teacher A used blended learning as she found it very useful and could help students learn better, but Teacher B used it only because it was instructed by the management.

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Teacher A: Because I found blended learning very useful. Using a traditional mode with the help of an online mode not only provides more practice opportunities to the students, but also allows them to check their own progress and learning status by themselves. From time-to-time, say they did it 3 times and passed all 3 levels, or they discussed in the discussion forum, I would praise them for their achievement. From the result, they would also have an idea of how they could perform in the examination… In blended learning, students could have more chances to practise on different question types.

Teacher B: Why? The school requested… the programme leader. I did not teach MA in the first year. They had used blended learning since a year before. After the School changed the system to SOUL 2.0, he asked us to use it. Actually I did not know too much about it as the course had been in this mode before I taught it. I don't think I would use it if I was not asked by the leader since I was not familiar with using the computer.

Besides providing design and organisation, the teachers also facilitated discourse and gave direct instruction in the blended learning course. Teacher A did the facilitation through encouraging interaction and discussion in traditional and online group learning. She consolidated the online discussion and found out the areas that she needed to stress more to the students. Teacher B facilitated the students to ask questions in and after class.

Teacher A: Face-to-face was the teaching in class and I wanted the students to have more interaction. So, I would sometimes facilitate them to learn in groups… They would have more interaction. They did preparation before class and this helped them. Sometimes they discussed online about what they thought before the class. When they attended the class later on, they shared with others. All the students could also see the discussion online and they solved others problems together. This could accelerate their thinking and direction... I first assigned them to do (the questions) and then see their results. I checked what they did. When they came back to class, I

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asked them to share. After that, I reviewed with them what I consolidated from their discussion online and shared the particular areas in which they did not do well.

Teacher B: I facilitated them in the lesson part. When they did not understand, they asked me questions or there was a consultation hour. They could come to ask individually.

All the 8 students in the individual interviews said the teachers gave direct instruction and answered their questions. All 4 students in Class A said the teacher linked classroom learning and online learning by asking them to do the online exercise in class in groups, with her facilitation. They did Level Quiz exercises together in groups. One student felt that linking online learning with traditional learning in such a way helped them do revision effectively because the teacher could identify their difficulties in online learning and help them. It showed the teachers had designed the course, given directed instruction and facilitated the discourse.

In Teacher A's class, 2 students said the 'Thinking Forum' led them to think deeply and learn the content more in depth. Since the activity required them to have a deeper understanding of the discussion topic, they searched for additional knowledge from the Internet and asked for additional help from the teachers. Student A2 and Student A1 explained how they learnt deeply using the 'Thinking Forum' by searching, associating, understanding, re-thinking and applying theories.

Student A2: It was quite interesting because I was able to learn more. Some discussion contents in 'Thinking Forum' were not learned in class, they were more in-depth… When I first read the question, I didn't really understand what it was talking about. I went to Google and used the keywords for searching and I found some hints for the answer… After searching and reading more, I associated the similar results. After understanding more from them, I tried to answer the

question by myself. Later on, with further searching and learning, I found that my answer posted was incorrect. So, I went to the forum again and modified the answer.

Student A1: There was a 'Thinking Forum' in the online learning system. The discussion was linked to the learning content. We discussed how 'Activity-based Costing' could be applied to the different industries, for example, in the chemical plant industry. YouTube videos and questions posted on the forum allowed us to discuss and think about the topic. It made me realise that memorizing the theories was not enough and that real-life application of them is important. This helped my study and my career in the future as I got clearer theory concepts through this... Also 'Thinking Forum', which contained additional questions and let us know more about the real-life application of theories, such as costing and performance measure...Questions posted on 'Thinking Forum' were valuable for class discussion to consolidate all the knowledge from lectures and notes.

The 4 students in Class B did not mention group learning, but said the teacher asked them to do the 'Level Quiz' online exercises which were counted in the overall assessment. All of these 4 students gave negative comments to the 'Thinking Forum', as illustrated in Section 4.3.1. On the other hand, 2 students in Class A gave very positive comments on it and found they had learnt from it. The teacher in Class A integrated online learning into the traditional teaching and this facilitated interaction with her students (Wilson and Stacey, 2003). It also implies that the teachers' engagement in the blended course affected the students' learning engagement.

4.5.1.2 Encouraging Students

In responding to the question on how the teacher encouraged their learning, two students said she asked them questions in class to encourage them to think. One student said the teacher encouraged the students to learn in groups in the class.

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Student A1: The teacher asked some questions in class and required us to perform research at home. We had to give her answers in the next class. During revision, she divided us into groups and picked some MC questions from the online system for us to do in groups as a competition. These were the ways that the teacher encouraged us to participate.

Three students said the teacher encouraged them to do the online exercise by relating it to the examination. Indeed, Teacher B made use of the 5% online participation marks to encourage students to do online learning with the compulsory activity 'Level Quiz'.

Teacher B: I think the 5% participation marks do encourage students to use the online learning system… I was very realistic. I told them the online part was part of the assessment. In the class I told them it could help them in future and let them know the knowledge was practical. I also told them online learning was interesting and many students were using this mode to learn. Besides telling them it was interesting, I needed to let them know it helped them to obtain good results. This is more important and they need to study more… I think you should understand that everyone is looking for goals. All people work to attain goals and so they will not be concerned with useless work. Since there was pressure from management to us to attain the goals, we would not do things useless to these goals. So, blended learning and online learning, frankly speaking, mean 5 marks. Whether they learnt was less important. The most concern was whether they could get marks.

Although Teacher A also told the students about the 5% online participation marks, she encouraged them to use other soft skills. She monitored their performances in the online platform and encouraged them to do it. For example, when the students performed well, she encouraged them by praising them.

Teacher A: I checked whether the students did it and then checked if there were students who could not do or did not do it well. They included the Level Quiz and Thinking Forum. I would make sure all students did them. I would praise those students who did them and would encourage

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others who did not do them. If they did not want to do them, I would invite them to come out to do

demonstration. When I did revision on their work, I could see which parts I needed to teach

more… From time-to-time, say they did it 3 times and passed all 3 levels, or they discussed in the

discussion forum, I would praise them for their achievement.

In order to encourage the students to study in blended learning, the course leader took the lead in implementing two exercises, including the introduction of the 5% online participation marks as mentioned.

Course leader: At the beginning, the response to using online learning in blended learning was

not very good. By that time, I asked the teachers to train the students. Another prominent one was

that, after I heard the feedback from the teachers, I proposed a policy change to allocate some

marks to online learning in the course assessment for to arouse the students' interest in using it.

Although the teachers used different levels of online and traditional learning integration in teaching the MA course, both classes found blended learning helpful and useful, as explored in Section 4.4.1. All the students, even when not instructed by their teachers, had explored the online learning activities and decided which of them were suitable for their own learning. As suggested by the course leader, blended learning was a way to enhance the teachers' and students' interest to use it and learn from it.

Course leader: I think a successful blended learning course should enhance the interest of the

users, students and teachers. This would be a good measurement. After the teachers became

interested in it and found it helpful to their teaching, they would like to continue to use it. For

students, if they have an interest in it when studying, say they do not resist it or even like it, I will

think it is successful even if they get poor results.

Although the average examination results of the two classes were similar, it was found from the students' study logs that the average times spent on both online learning and traditional learning by the students in Class A were around double those of the students in Class B, as shown in Table 24.

Table 24 Time Spent in Learning in the Two Weeks that Study Logs Recorded (Minutes)

Class	Student	Traditional Learning (All Activities)	Online Learning (All Activities)	Total
A	1	1070	480	1550
A	2	660	195	855
A	3	600	630	1230
A	4	1770	600	2370
A	5	870	450	1320
A	6	270	375	645
A	7	1410	675	2085
A	8	600	425	1025
A	9	1320	245	1565
A	10	185	110	295
A	11	185	60	245
A	12	920	60	980
Class A Mean		**821.67**	**358.75**	**1180.4**
Class A Standard Deviation		**505.15**	**221.48**	**650.57**
B	1	360	125	485
B	2	180	55	235
B	3	360	30	390
B	4	585	50	635
B	5	360	0	360
B	6	360	40	400
B	7	360	100	460
B	8	300	215	515
B	9	180	30	210
B	10	570	14	584
B	11	410	110	520
B	12	1170	550	1720
B	13	1185	555	1740
Class B Mean		**490.77**	**144.15**	**634.9**
Class B Standard Deviation		**326.60**	**190.06**	**501.09**

From the table, it can be seen that the means for traditional and online learning in the 2 recorded weeks of Class A were 821.67 and 358.75, while those for Class B were 490.77 and 144.15. The mean times spent on traditional and online learning by Class A students were 1.7 and 2.5 times of those of Class B students. For statistical test comparison of the 2 groups, a t-test was performed. One-tailed t-test was used because it was believed that teachers' choices of course delivery had impact on the students' learning (Duhaney, 2012), as reviewed in Section 2.3.6. There was a significant difference in traditional learning between Class A ($M = 821.67$, $SD = 505.15$) and Class B ($M = 490.77$, $SD = 326.60$), $t(23) = 1.961$, $p = 0.031$. Class B significantly used fewer minutes for traditional learning. There was also a significant difference in online learning between Class A ($M = 358.75$, $SD = 221.48$) and Class B ($M = 144.15$, $SD = 190.06$), $t(23) = 2.606$, $p = 0.008$. Class B also significantly used fewer minutes for online learning.

There were two possible reasons for this. First, as shown in Table 15 in Section 4.3.1, in the observed classes Teacher A and Teacher B spent 14.3 and 0.5 minutes on average in giving instruction to students about doing after-class activities. This hints that the students may have spent much more time in doing after-class learning activities if the teachers spent much more time in the class instructing them to do those activities. It illustrates that teachers' choices of course delivery had impact on the students' learning (Duhaney, 2012). Second, the approaches to integrating traditional and online learning were different in the two classes. The reason that the Class A students spent more time doing after-class learning may arise from the learning design as an integrated blended learning mode by Teacher A. As discussed in 4.3.1.1, Teacher A and Teacher B used integrated and supplemented blended learning approaches respectively. The integrated

approach may have aroused the students' interest in both traditional and online learning during self-learning. It cannot be explained fully in this study, but these two interpreted possibilities can be explored in further studies.

When compared the learning time of Class A and Class B recorded in the online system (Table 20 in Section 4.3.1.2), the mean times spent on online learning in the 12 weeks of the entire course were 408 and 236. However, the mean times spent on online learning in the 2 recorded weeks, as reported by the students, were 358.74 and 144.15 respectively. The difference in the 12 weeks figures and 2 weeks figures was too little. There were two possible reasons for this. This may have resulted from over-reported of the learning time by the students. Another possibility is that the system database and log file information might have underestimated the actual online learning time as it did not record online learning outside the platform, or when the students learnt together in the online platform using one account, as discussed in Section 4.3.1.2.

4.5.1.3 Teachers' Difficulties

Both teachers said they wanted to use more online learning activities and Teacher A even wanted to provide online class and consultation hours for answering students' questions synchronously. However, both teachers found the workloads too heavy as their time was already occupied by other teaching and administrative work. Teacher B found he did not have teaching support to handle the additional work initiated from the online learning. Besides, both teachers found they had difficulties in using blended learning to teach. Teacher B said he did not know how to monitor the students' performances and Teacher A said there was no training for teaching using blended learning.

Teacher A: I think it (online class, online consultation and instant questions answering) was good, ideally, provided that we could handle it. If there were no additional resources other than for the existing workload, I think we could not do this. If we worked in a University, we could have less tight consultation hours. Also, if so, we did not need to take up so many administrative roles we could do this… For online consultation or instant answering, if I cannot answer, the purpose will be defeated. It means I need one or more teaching hours to do so… Up till now, we did not have training. Maybe it was hard to afford.

Teacher B: It would be best if we could have a WhatsApp group that includes all the students in the class to ask questions. But then I think teacher would not be able to sleep. This is the best way, but if we can have more support to follow up the WhatsApp questions. It could be supported even by a clerk… Mainly I was not familiar with how to check whether they used online learning and how to check their results.

In responding to the problems that the teachers found, the course leader said the best way to solve the problems was to give more resources to help teachers. However, the School could not afford such resource allocation.

Course Leader: Actually the school can give more resources to help the teachers, for example, reduce other work so as to encourage them to do more in blended learning. If we could do it the effect would be most practical. It could help them to engage in blended learning easier and this is the best way. However, you do not have such resources in reality. You cannot do it even if you want to.

It was found that the teachers expected support to help their online teaching (Raman and Don, 2013), but the support could not be provided without extra resources from the management. Besides problems found by the teachers, the students also had barriers in blended learning.

4.5.2   What are the barriers for students in blended learning?

The barriers to learning comprised the other factor that influenced student engagement in blended learning. The barriers were mainly personal or related to course problems.

4.5.2.1   Personal Barriers

Six students in the individual interviews had barriers related to their attitudes. Three found studying or doing learning activities to be time-consuming. Two of them felt they were lazy and would only work hard near the examination. Two others found learning boring as there were too many words in the course materials. One student had a part-time job and did not want to study and have online learning after work. Besides these common barriers of learning, one student had a barrier related to online learning in blended learning. He said he would play computer games instead of learning if he switched on the computer, even with the intention to learn. Student B1 and Student B3 explained the reasons they did not study hard and did not do 'Thinking Forum', respectively.

> *Student B1: I was somehow lazy and rarely studied that hard during the semester*

> *Student A3: I thought it was quite time consuming since the case study in 'Thinking forum' was quite lengthy and might not be in the scope of the examination. I was afraid that I did not understand the basic part of the topic and would spend too much time on thing not related to the examination. Personally, I was exam-oriented and I allocated time carefully.*

In the focus group interviews, the individual barriers were also found in 4 students. One was distracted by other things in the computer, one was too busy and did not study, a third student did not enjoy study and another felt scared when talking to the teacher.

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Three students in the individual interviews felt pressure in learning. One of them felt pressure in asking the teacher questions and another felt pressure from forgetting to do online exercises. One student felt the workload was too heavy. For example, when Student B3 explained why he preferred collaborating with his classmates than with the teacher, he said he felt pressure in asking the teacher question.

Student B3: I felt pressure if I needed to ask the teacher question.

Six students in the individual interviews found they did not understand while learning. When they did not understand, they tried to understand by other means. One student asked the teacher questions while the other one asked peers questions when they did not understand. One student said she did not understand the content if she only attended the face-to-face class. Two students said they did online activities to learn if they did not understand. For example, Student B4 did the 'Chapter Review' to learn as illustrated.

Student B4: I did the 'Chapter Review' when I did not understand the content of the topic

Five of the individual interviewed students had barriers in language proficiency. Student B3 and Student B1 did not understand when the teacher taught in English or when the questions were shown in English. Student A1 explained it was a barrier to him if he needed to express himself in English.

Student B3: I am confident in reading in English but not as confident in listening in English... Sometimes, I could not get the meaning if the teacher taught in English.

Student B1: My English was not good enough and made me unable to understand the questions.

Student A1: When I asked questions to the teacher in emails, I could not use Chinese or local slang. I needed to ask in formal English. For 'Thinking Forum', I found it difficult to express myself in English. It was a barrier to me.

Table 25 summarized the students' personal barriers in blended learning.

Table 25 Summary of Personal Barriers of the Students in Blended Learning

Personal Barrier	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4
Attitude	✓	✓	✓		✓	✓	✓	
Pressure		✓	✓				✓	
Lack of Understand		✓		✓	✓	✓	✓	✓
Language	✓	✓		✓	✓		✓	

In blended learning, students usually have difficulties (Le, Huang, Zhow and Li, 2010). In the individual interviews, 6, 3, 6, and 5 students had barriers in attitude, felt pressure, lacked of understand during learning and in learning in English respectively. The 3 students who did not have language problems also preferred studying bi-lingually. It was found in Hong Kong that students with lower English proficiency adopted surface approaches to learning (Watkins, Biggs and Regmi, 1991). The cause being that the policy of using English as a medium of instruction did not match with the realities (Biggs and Watkins, 1995). This is discussed in more detail in Section 4.5.3.2, about preference.

4.5.2.2   Course Problems

All 8 interviewed students found technical problems. Six of them had experienced system problems in either displaying the content or connection problems. For example, Student A1 found the display of the content in the 'Chapter Review' had a problem.

Student A1: Errors occurred in the online system. Some of the pictures and texts in 'Chapter Review' could not be shown when I used my computer at home.

The other 2 found the design was poor. They found the course list was only shown in codes but without course names, and the code lists were too long for them to find out their courses.

Student B2: Difficult to find the programme as the webpage included too many programmes.

Student B3: Design of SOUL was not good. I have 60 codes after 3 years of study.

Other than technical problems, all 8 students found problems related to the course content. Two students found errors in the course content. For example, Student A1 found the answers in the online exercises were incorrect.

Student A1: Errors occurred in the answers of the MC questions.

Regarding the online learning activities, six students found some of the learning activities were not helpful to their study. Two students found the instructions given in the online learning activities were insufficient. Two students said some online materials were not in the syllabus and were not useful for the examination. Two found the explanation in the instant feedback was insufficient. Student B3 illustrated his experience that the feedback was either too brief or even missing.

Student B3: If I got it wrong, I would also do the next one even if I did not understand. The explanations in wrongly answered questions were too brief for me to understand…. For those questions related to theories, when I got one wrong, the system might just simply show the correct answer without any explanation.

Two students found teaching time in the class was insufficient. Two students found teaching support for the online learning was insufficient. Two students said the teacher responded to emails too slowly. Two students complained that Teacher B was not good at English. Student B2 said it affected their concentration in class.

> *Student B2: I think the teacher was not able to speak English fluently and we found difficulty in hearing his English. Then, we lost our patience in hearing his English and the class was boring which could affect our learning motivation.*

In the focus group interviews, three students in Class B also mentioned that Teacher B's English was not good and one of them even said the students only could learn when he taught in Chinese. This affirmed that educational difficulties in Hong Kong are often caused when many students and even teachers have low English language proficiency (Biggs and Watkins, 1995).

Table 26 shows the summary of problems related to the course, which are technical problems, content problems and teaching problems.

Table 26 Summary of Problems Related to the Course

Course Problem	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4
Technical Problem	✓	✓	✓	✓	✓	✓	✓	✓
Content Problem	✓	✓	✓	✓		✓	✓	✓
Teaching problem	✓	✓		✓	✓	✓		

In this analysis, it was found that technical difficulties influenced the amount that learners learnt (Sitzmann, Ely, Bell and Bauer, 2010). Besides, course problems and teaching problems also affected students' learning.

4.5.3 How do Other Factors Influence the Form of Student Engagement in Blended Learning?

Besides instruction and barriers, it was found that the students' needs and preferences were other external factors that influenced student engagement in blended learning.

4.5.3.1 Student Need

The students needed to have a better learning platform. Some of these needs were generated for solving existing problems. The 2 students who pointed out that the course list only showed a long list of course codes but without course names, as reported in Section 4.5.2, said they needed the platform to display course names for them to locate the course link more easily. Another 2 students said the Flash format of the learning activities was troublesome, as they could not be viewed properly with some computers. One student needed to have a better interface design of the course page in the platform. Four students needed to have more online questions to do. Another 3 students needed the feedback to be with more detailed explanation. Student B3 described what kind of feedback he needed when doing online exercises.

> *Student B3: Current answer explanation just only indicated 3-4 rows answer with 1-2 rows formula as a brief explanation. It would be quite difficult for me to understand especially in the long questions in the 'Gold Level' quiz. Maybe the flow of calculation can be recorded as video and shown to the students.*

Instead of showing the answers, 2 students needed hints to help their thinking on the questions in the online exercises. Student B3 said hints could help him to think while answering the questions but not just knowing the answers directly.

Student B3: Hints could help me to have ideas for trying difficult questions instead of either answering them correctly or wrongly.

Five students needed to have more teaching support from their teachers. One student needed to have more guidance and instruction. Two students needed more detailed explanations from the teachers. Three students needed online support by the teachers. For example, Student A1 suggested having online support from the teacher.

Student A1: If the teacher allocates time for answering our enquiries, e.g. every night from 8-10pm, we will prepare to hear the feedback at that specific time... It would be better if an instant online interaction, similar to WhatsApp and LINE, could be offered.

Table 27 summarizes the student needs in the blended learning course.

Table 27 Summary of Student Needs in Blended Learning

Student Need	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4
Better System					✓	✓	✓	✓
More Online Question			✓	✓		✓	✓	
More Online Feedback				✓		✓	✓	
More Teaching Support	✓	✓	✓	✓	✓			

This study found that the students expected their teachers to provide online teaching support to them (O'Connor, Mortimer and Bond, 2011). However, in responding to the students' needs in the teacher interviews and course leader interview, the respondents pointed out that the resources in the School were insufficient. The course leader suggested that 'If students wanted integrated blended learning, they should consider if the teachers' time and resources can be afforded. If they cannot be afforded, there are no other ways'. In such cases, the availability of resources will affect the students' learning in the blended learning course. The difficulty in moving from purely traditional to

blended learning relates to the mind sets and attitudes across the entire institution (Bowen and Lack, 2013) which have to be changed and compromised to some extent. In this case, changes in resources allocation can help to fulfil some of the needs of the students.

4.5.3.2   Preference

Five students preferred keeping some traditional ways of learning. Three said that they preferred writing when doing calculation exercises. Student B1 explained that doing calculation exercises in front of the computer was troublesome.

> *Student B1: If there were calculations on SOUL, I might find them troublesome and skip them because it was too much trouble to do calculations in front of the computer.*

Two students preferred having discussions in traditional ways. For example, Student A1 explained that he preferred communicating with others directly since they met daily anyway.

> *Student A1: As we met each other every day, we preferred communicating directly.*

All 8 individual interviewed students in the individual interviews preferred blended learning than traditional learning. During the individual and focus group interviews, the terms 'integrated blended learning' and 'supplementary (non-integrated) blended learning' were explained to the students as described in Section 3.7.4 and 3.7.6. In the individual interviews, 7 students preferred integrated blended learning and 1 preferred supplemented blended learning. The 7 students found that, in integrated blended learning, they could learn in both traditional and online learning modes which complemented each other. For

example, Student A1 found integrated blended learning useful. Student A2 found it made her feel interested and therefore willing to learning more.

> *Student A1: I think integrated blended learning is better as the two components complement each other. For example, it was useful when the teacher linked our lecture to the online exercises.*

> *Student A2: In integrated blended learning, the learning materials had connections and interactions that made me felt interested. When I am interested in it, I will be willing to learn more.*

Although Student B4 was in Class B where the teacher designed the course as supplemented blended learning, she preferred integrated blended learning.

> *Student B4: I prefer integrated blended learning. This is because it makes the whole course more complete and lets me understand more the things and outcomes I need to learn or know. It integrates different learning modes for me to learn.*

For the use of language in learning, 6 students expressed their preferences for learning in Chinese or in both Chinese and English. For example, Student A4 found the some students might not able to ask questions in English. Student B1 explained that Chinese was his mother tongue and he could learn more easily in Chinese.

> *Student A4: Bi-lingual would be better since students might not be capable to use English to ask questions.*

> *Student B1: I prefer using Chinese in the class because it is my mother tongue. It would be clearer for me to listen to the teacher.*

Student B1 further expressed that he would discuss more in the 'Thinking Forum' if using Chinese in the discussion was allowed as he could ask more in-depth questions.

Student B1: I am not sure if I can ask questions in English in an appropriate way. However, I can use Chinese to ask more in-depth questions.

Student A4 suggested adding Chinese subtitles to the videos in the online activities or providing Chinese versions of the video to help them learn easier.

Student A4: It would be better if the video provided English or Chinese subtitles as reading is easier than listening. If not, a Chinese version of the video would be better.

From the ways suggested by the students, online learning with bi-lingual support can be a solution to help students' learning.

Six of the 8 students in the individual interview preferred to have mobile learning so that they could access the online activities in the learning platform using mobile devices. Four students found mobile learning allowed them to learn beyond time and location constraints. One believed mobile learning could facilitate instant communication. Student A1 said he wanted to access the online activity for online discussion any time with mobile learning and he explained the reasons for this. Student A2 found online learning with mobile devices was better than traditional learning during her travels.

Student A1: I want to access 'Thinking Forum' in smart phone. With the phones, I can then access the online resources any time for discussion… Time can be saved if I can access the system during transportation. It will be beneficial if we discuss the topics with peers via mobile devices on the ride.

Student A2: I think using an app would be more interesting. I can make use of it to revise in travels and do not need to hold notes in my hands.

Student B1 even wanted to use mobile features in the face-to-face class for the students to answer questions and for the teachers to monitor the learning progress.

> *Student B1: If there is an app which can connect the teacher's computer in the classroom, and allow us to answer questions, that will be great. It enables the monitoring of participation while the teacher is also notified the students are answering the questions.*

In the last question of the interviews, the students were asked their views on an ideal blended learning. Although 7 and 1 students said they preferred integrated and supplemented blended learning respectively, it was found that all of them described the ideal blended learning as an integrated one. Student A2 illustrated in detail about her ideal blended learning.

> *Student A2: Before the class, the online content can show the relationship of the last class and the coming class. I can see this via mobile phone so that I know what the next topic will be… After this, the teacher delivers the lecture in class and does practice exercises with us... After doing exercises, I hope I can go to SOUL and do the exercises again to clarify the concepts. When I don't understand, I hope the teacher will spend 1-2 hours to answer the questions online. After that, I will do revision together with my classmates and then prepare for the next class… I can use my mobile phone to read the material during transportation when I am free… Ideally, I hope it can include something important, such as key points, and also some simple MC questions which help me to clarify the concepts easily.*

From her description, it was found that there was traditional and online integration of pre-class, in-class and post-class activities. In addition, mobile tools were used to allow her to learn anywhere and anytime. Furthermore, teaching support was available online and the teacher could answer her questions during her online learning.

Table 28 summarizes the students' preferences in blended learning.

Table 28 Summary of Student Preferences in Blended Learning

Preference	Student A1	Student A2	Student A3	Student A4	Student B1	Student B2	Student B3	Student B4
Keep Traditional Way	✓	✓		✓	✓	✓		
Bi-lingual	✓		✓	✓	✓	✓		✓
Mobile	✓	✓		✓	✓	✓		✓
Integrated Blended Learning	✓	✓	✓	✓	✓	✓		✓

From the analysis in Section 4.3.1, it was found that 'Matching Game', the drag and drop exercise for learning new Accounting terms, had the most negative comments from the students. However, 2 students suggested using a mobile app to play the 'Matching Game' in their ideal blended learning environment. For example, Student B1 explained it could be played more conveniently with mobile devices than in the computer.

> *Student B1: I think mobile phones are very suitable for doing "Matching Game" because I can directly use my fingers to move those options and this will be more convenient. These can be done mainly by mobile phones.*

Although some researchers have said mobile learning cannot be promoted as a value-added service for the current online learning based framework and it is only the use of another device with mobility features (Hewagamage, Wickramasinghe and Jayatilaka, 2012), Student B1's explanation implies that students' learning experiences could be enhanced, for example, it can be more convenient to use the same online learning activity in mobile devices than in the computer. The development of mobile applications is important to increase students' learning experiences (Lam, Hung, Wong and Chan; 2015).

4.5.4 Discussion about How External Factors Influence Student Engagement in Blended Learning

The last research question was how external factors influence student engagement in blended learning. The sub-questions were how teacher engagement affects students in blended learning, what the barriers were for students in blended learning, and how other factors influence the form of student engagement in blended learning.

In the MA blended learning course, the teachers had the flexibility to decide the level of integration of traditional and online learning. Teacher A used a more integrated approach in that she always encouraged the students to do online learning and she reinforced their online learning in the class. Furthermore, she extended the online discussion to the class after her consolidation of discussions in the online forum. On the other hand, Teacher B used a supplemented approach as he considered online learning as only referencing materials to his students. He asked the students to access the online activities but never reinforced or extended online discussion by further collaboration in the class. From the study logs, it was found that the means of studying time for Class A were nearly double those of Class B in both traditional and online learning activities. It hinted that the decision to use integrated and supplemented blended learning by Teacher A and Teacher B might have affected the students' learning time. In this study, the students spent much more time in the learning activities in the class with integrated learning.

Although Class A learnt in an integrated mode and Class B learnt in a supplemented mode as designed by their teachers, it was found from both focus group interviews and student individual interviews that the students in both classes had many similarities in

answering the interview questions. For example, they explored online activities by themselves. Besides, they initiated and participated actively in online collaboration without teaching instruction or facilitation. However, the means for blended learning times of Class A students were around double those of Class B in the entire course. This may have resulted from the different levels of integration of blended learning by the teachers.

Seven of the eight individually interviewed students preferred having integrated blended learning. For the students in Class B, although the teacher did not integrate much online learning components with traditional learning, the students made use of online learning actively by themselves. For online collaborative learning, the students in both classes found asking questions to peers using social media helped their learning as they could communicate effectively in multimedia formats, in which they felt less pressure than when asking teachers questions. In such self-initiated collaboration without a teacher, they learnt through social interaction from the more knowledgeable others in the zone of proximal development (Vygotsky, 1962).

As introduced in Chapter 1, the MA course was in a purely traditional mode before 2011. After the implementation of blended learning, teachers found difficulties in adopting the change and in implementation. In the interviews, the teachers explained their difficulties in having additional workloads without sufficient support. They found online learning induced new teaching support for students. It was found that, in the course, the students expected the teachers to provide more online support, which led to a strong demand on their teaching workloads (O'Connor, Mortimer and Bond, 2011; Seng and Ling, 2013).

Besides, the teachers did not have sufficient training to teach in blended learning mode and using the new technologies. Furthermore, the students found there were content problems and technical problems in the online activities. The course leader fully understood these issues but limited support could be provided to teachers with the limited resources. This course was an example that the institution expected blended learning to be a cost-effective option but the teaching and technical costs might actually need to rise (Tawil et al., 2013) or resources re-allocation should be made. In this study, the consequence of insufficient support to teachers was insufficient support to students. Although the resources problem was not easy to solve, at least the online environment and online learning activities provided an additional option for the students to learn, which students the students perceived as being helpful, enjoyable and flexible.

The major barriers for the students were personal problems and language problems. For personal problems, students said they were lazy, felt boring, were distracted, felt pressure, had too heavy workloads and did not understand in learning. One common problem was language. Many students found difficulties in learning in English and some of them wanted to learn in their mother tongue, Chinese. The results were consistent with the findings of Biggs and Watkins (1995) that the policy of using English as a medium of instruction does not match with the realities. Some students actually need extra support in learning in English or otherwise the students who are not confident in English will adopt surface approaches to learning (Watkins, Biggs and Regmi, 1991). Besides, in this study, some students pointed out in the focus group interviews and individual interviews that the English proficiency of the teachers was not good, which led to difficulties in understanding lectures in English. This again shows how educational difficulties were

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caused when many students and even teachers had low English language proficiency (Biggs and Watkins, 1995). This problem probably could be lessened using a blended learning mode. As 4 of the individual interviewed students suggested, blended learning could be provided with bi-lingual versions so that they could choose the language for learning. The problem and the feasibility of using blended learning with bi-lingual support should be investigated in further studies.

Other influential factors on student engagement were their needs and preferences. Besides the need to have more online teaching support, more online questions and more online feedback, students wanted to have online consultation hours, more integrated blended learning and mobile learning support. In their descriptions of ideal blended learning, most of them expressed their wishes of having mobile learning. Although the students were satisfied with learning with their peers through online collaboration, some of them showed their preferences in having online collaboration with teachers. The limited resources limited the teachers' online collaboration and participation in this blended learning course. However, the lack of sufficient support might have resulted in the students looking for more learning opportunities by themselves. The importance of individual learning in this blended learning is discussed further in Chapter 5, when discussing the findings using the theoretical framework as described in Section 2.4.

4.6 Conclusion

This chapter has described the findings and discussed the results of the research on understanding and exploring the student experiences in the blended learning course. The research questions were answered with discussion on the findings.

The first research question was: 'How do students learn in a blended learning environment?'. As mentioned in Section 4.1, the research questions are case specific, 'students' in the questions refer to 'sub-degree students' and 'blended learning' refers to the 'blended learning of the sub-degree Accounting course'. Besides teaching and learning in a blended learning environment, the teachers and sub-degree students in this blended learning Accounting course had flexibility to choose the level of blend and the activities to be used. The students directed themselves in exploring and determining useful online resources for fulfilling their learning needs. In the non-prescribed online collaboration, the independent drive from individuals played an important role in the course. The students directed, determined and shared learning among their peers. Although it is not designed in the blended learning course, it is an impact of a blended design.

The second research question addressed was: 'Why do students engage in a blended learning course?'. In this course, the sub-degree students were active in participating in non-prescribed online collaborative learning using social media tools. It was found that they directed their learning, determined the learning content, and shared useful resources for their peers to discuss and complete together. They engaged in blended learning with autonomous learning. The autonomous learning by the individuals led the inquiries and enabled learning experiences in the course. Such active engagement of students in non-prescribed learning activities with independent learning and collaborative learning using social media tools has been discussed.

The third research question answered was: 'How do external factors influence student engagement in blended learning?'. In this sub-degree blended learning Accounting course,

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the factors that influenced students' engagement included instruction, barriers, student needs and preferences. In this course, the management gave high flexibility for the teachers to decide the way to blend. While one teacher integrated online learning with face-to-face learning, the other one only supplemented face-to-face learning with online learning. Nevertheless, all the students engaged in blended learning and they were able to explore appropriate online learning resources for their own learning needs.

As reviewed in Section 2.4, the CoI framework was used as a theoretical framework to guide the understanding of the student experience in the blended learning MA course and the exploration of new issues from it. In Chapter 5, the elements of CoI in this course are discussed. Furthermore, an extended CoI framework with an element of autonomous learning, which links to the learning through inquiries, is proposed. How this initiates the inquiries in the learning community and enables learning experience is also discussed.

5   BEYOND THE COMMUNITY OF INQUIRY

5.1   Introduction

The learning experiences of the students in the blended course were explored in Chapter 4. It was found that the students engaged in both prescribed and non-prescribed learning activities. In non-prescribed learning, they directed their own learning and engaged in collaborative learning with their peers without the presence of their teacher. Such autonomous learning and its link to inquiry learning are discussed further in this chapter by exploring the student experience of blended learning from a theoretical perspective.

In this chapter, the student experience in the MA blended learning course, with the elements of the CoI framework, is examined. The discussion considers whether social presence, cognitive presence and teaching presence existed in the course. As learning autonomy, which led the learning through inquiry in the course, cannot be categorised according to the CoI elements, the limitations of CoI are identified and the need to include the 'autonomy presence' element are elaborated. Finally, the Extended Community of Inquiry (ECoI) framework is proposed. The categories and indicators of the newly proposed elements, autonomy presence, are also proposed and explained.

5.2   The Community of Inquiry

The student experience of blended learning in the MA course is examined from the perspective of CoI. The elements of social presence, cognitive presence and teaching presence in the course are discussed in this section.

5.2.1 Social Presence

To examine whether social presence occurred in the MA blended learning course, 'effective expression', 'open communication' and 'group cohesion' were investigated (Garrison, 2007). In Section 4.4.2, it was reported that all 8 students in the individual interviews expressed their views in the blended learning environment through interaction and discussion. During online collaboration in the learning platform, the students discussed the cases and questions set by their teachers freely in the online forum. As well, the students raised questions for others to give responses. For example, Student A2 said that online communication 'provided me a chance to discuss and interact with other classmates'. The discourse was not only facilitated in the learning platform but was also followed up in the face-to-face class in Class A. The students formed groups and answered questions from other groups. The quotes of Student A2 in Section 4.4.2.3 support the idea that the discourse was facilitated in the blended learning course with the online learning activity 'Thinking Forum', which required the students to discuss based on a case.

> *Student A2: The teacher requested me to complete two questions. I was required to answer one of the questions. I also was also required to answer other classmates' questions. I needed to do both questions… When we did revision in class, one group was responsible for providing the solution and my group needed to answer questions. Say there were Group A and B. Group B needed to answer the question from Group A… It was quite interesting because I was able to learn more. Some discussion content in 'Thinking Forum' had not been learned in class before but it was even more in-depth.*

In one classroom observation, it was recorded that the teacher logged into the learning platform and asked the students to do calculation exercises in an online learning activity named 'Level Quiz'. There were three levels, 'Gold', 'Silver' and 'Bronze', depending on the difficulties of the questions. The teacher asked the students to form groups and do 'Silver Level' questions together. Then the teacher encouraged them by making it a competition and said, 'Let's see which group can complete the calculation first'. The students then did the calculation and discussed happily within their groups. The teacher allowed the groups to discuss freely. Although English was the official language of the course, the students were allowed to use their mother tongue, Chinese, to have the discussion. This helped them to be more willing to express their ideas. The teacher then invited a group to demonstrate the steps of the calculations to others. When they did the demonstrations correctly, the teacher praised them. As quoted in Section 4.4.2.1, Student A3 shared his experience of it and explained how it helped his learning.

> *Student A3: We had competition activities in class. We were divided into groups and did the 'Silver Level' or 'Gold Level' of the 'Level Quiz' together again in class and saw which group could get the highest marks… As we were in groups, we discussed when we did not know how to solve the question… This made me know if I really understood how to solve the online questions and had a deeper understanding of these questions.*

Table 29 summarizes the categories, indicators and evidence of social presence in the blended learning course with this example.

Table 29 Social Presence in the Blended Learning Course

Elements	Categories	Indicators	Evidence	Example (Field Note of Classroom Observations)
Social Presence	Effective Expression	Emotions	Students felt happy in interacting with peers.	The students discussed happily with their peers when doing 'Level Quiz' questions in groups.
	Open Communication	Risk-free Expression	Students discussed freely in communication	The students were allowed to discuss freely in groups without the teacher's intervention. Besides, although English was the official language of the course, they were allowed to use their mother tongue for discussion.
	Group Cohesion	Encourage Collaboration	Students were encouraged to discuss in groups.	The teacher encouraged the students to do the 'Level Quiz' in groups via discussion. After the group work, the students were invited to demonstrate their calculation steps to their classmates. When they did the questions correctly, the teacher praised them.

In this example, opportunities for expression occurred as the students were observed to have emotions when interacting with their peers during discussion. Open communication also occurred, as they had risk-free opportunities when they could discuss freely and in their mother tongue. In addition, group cohesion occurred when they were encouraged to discuss in groups and were praised when they did the calculations correctly. During the discussion, the teacher encouraged the collaboration by giving hints, praising good discussions and encouraging quiet groups to speak up. All the indicators of social presence were found in this course.

5.2.2   Cognitive Presence

Cognitive presence was examined through the categories of 'triggering event', 'exploration', 'integration' and 'resolution' in the learning process (Garrison, 2007). A 'triggering event' should be indicated with a 'sense of puzzlement', for example, when the students found problems. As reported in Section 4.3.3, Student B4 captured the screen

of an online exercise and sent it to the group or individual classmates in WhatsApp. She explained that 'usually, when I was doing the exercises and I did not understand how to do the calculation, I took a picture and sent it to my classmates and asked them. After they completed it, they sent the answers, with steps, back to me in a picture.' She found it 'made my learning easier and saved my time'. Besides, in the online platform, the students were required to do the learning activity 'Level Quiz'. In the activity, they had to answer questions in multiple-choice formats. When they did not know how to do the questions, they referred to the learning materials, asked the teacher questions or asked their peers questions. In the face-to-face class, when the students did not understand, they asked the teacher or their classmates questions. Through communication, they solved the problem and learnt. As reported in Section 4.4.2.1, Teacher A described how the students learnt with cognitive presence.

> *Teacher A: Interaction among students increased for courses with blended modes. They discussed among themselves whether they understood or not… Blended learning increased the interaction among students, as they would share whether they could do the online exercises. Also they needed to do group presentations and, therefore, they needed to communicate closely together. If exercises were only in-class, they only did them by themselves and would not do them in groups.*

In another example in Section 4.5.1.1, Student A2 described how she learned when she had problems in online learning. Her class was asked by the teacher to do the online activity 'Thinking Forum'. In the activity, there was a case in video format to view. Then, the teacher posted some questions for them to answer and discuss in the online forum.

> *Student A2: When I first read the question, I didn't really understand what it was talking about. Then, I went to Google and used the keywords for searching and I found some hints for the answer.*

After understanding more from this, I tried to answer the question by myself. Later on, with further searching and learning, I found that the answer I had posted was incorrect, so, I went to the forum again and modified the answer.

Table 30 summarizes the categories, indicators and evidence of cognitive presence in the blended learning course with this example.

Table 30 Cognitive Presence in the Blended Learning Course

Elements	Categories	Indicators	Evidence	Example (Quotes from Student Individual Interview)
Cognitive Presence	Triggering Event	Sense of Puzzlement	Students were puzzled when they did not understand.	"When I first read the question, I didn't really understand what the question was talking about."
	Exploration	Information Exchange	Students asked questions, looked for answers in course materials or searched for hints on the Internet.	"I went to Google and used the keywords for searching and I found some hints for the answer."
	Integration	Connecting Ideas	Students integrated the collected answers from exploration.	"After searching and reading more, I associated similar results."
	Resolution	Applying New Ideas	Students posted the integrated solution to the online forum.	"After understanding more from them, I tried to answer the question by myself."
				"Later on, with further searching and learning, I found that the answer I had posted was incorrect, so I went to the forum again and modified the answer."

From this example, the triggering event occurred as the student had a sense of puzzlement when she did not understand the question. Exploration occurred as she searched on the Internet, with information flowing between herself and the other Internet users. Then, integration occurred as the student integrated and associated the collected information from her exploration. Finally resolution was found as she applied new ideas and posted them onto the forum. Cognitive presence occurred in this blended learning course.

5.2.3 Teaching Presence

The elements of teaching presence in the CoI contained the categories of 'design and organization', 'facilitating discourse' and 'direct instruction' (Garrison, 2007). All of the 8 students in the individual interviews said the teachers gave direct instruction in the class For example, Student A4 described how the teacher directed their learning, gave them direct instruction and explained difficult questions to them, as reported in Section 4.5.1.1.

Student A4: We had lectures in the class and the teacher taught us the concepts first... During class, she would provide the class with exercises for to us to do and we could check the answers together. Then, she explained to us when we had questions. After class, she would stay behind to answer our questions… Sometimes, she would check the online MC answers with us in the class and explain in detail for the difficult questions.

As recalled from Section 4.5.1.2, Student A1 found the teacher facilitated discourse among students as 'she divided us into groups and picked some multiple-choice questions from the online system for us to do in groups as competition. Teacher A explained how she participated and encouraged the students to have discussions in the 'Thinking Forum', as reported in Section 4.3.2.1. In the class, she asked the students to do the 'Thinking Forum' in the online platform after class. After the students posted their discussion onto the forum, the teacher consolidated it. In the next class, the teacher asked the students to share their views again in the class and reviewed their discussion. She also shared her own views on the areas where she found the students did not do well.

Teacher A: I first assigned them to do (Thinking Forum) and then look at their results. I checked what they did. When they came back to class, I asked them to share… I reviewed with them what I

had consolidated from their discussion online and shared the particular areas in which they did

not do well.

Table 31 summarizes the categories, indicators and evidence of teaching presence in the

blended learning course with the example.

Table 31 Teaching Presence in the Blended Learning Course

Elements	Categories	Indicators	Evidence	Example (Quotes from Individual Teacher Interviews)
Teaching Presence	Design & Organization	Setting Curriculum & Methods	Teachers designed the pedagogy to have instruction and interaction in the class.	"I first assigned them to do (Thinking Forum) and then look at their results. I checked what they did."
	Facilitating Discourse	Sharing Personal Meaning	Teachers facilitated students' collaboration in the class and gave opinion.	"I reviewed with them what I had consolidated from their discussion online and shared the particular areas in which they did not do well."
	Direct Instruction	Focusing Discussion	Teachers instructed students to have discussion.	"When they came back to class, I asked them to share."

Design and organization occurred here as the teacher set the use of the 'Thinking Forum'

for the students to discuss online and in the class. Direct instruction occurred as the

teacher instructed the students to do the activity after class and then instructed them to

share their views again in the next class. Facilitating discourse occurred as the teacher

facilitated the students to discuss and also shared her own views with them. Teaching

presence was evident in the study.

5.2.4   Beyond the Presence Elements

Social presence, cognitive presence and teaching presence all occurred in the studied

course. The students had educational experiences as structured in the CoI framework

(Garrison, Anderson and Archer, 2001), and as discussed in Sections 5.2.1 to 5.2.3.

Beyond this, from the findings and discussion presented in Section 4.4, it is known that

the students explored non-prescribed online learning activities with intrinsic motivation. Then, they interpreted whether these learning resources were to be shared with their classmates. Although the teachers in Class A and Class B implemented different blends of the course, one integrated and one supplemented, the students in both classes still had similar views and experiences in blended learning. The only difference found was that the average self-learning time of Class A, recorded in the study logs, was around double that of Class B. Other than that, they tried to integrate blended learning by themselves during self-learning. This shows, in this case, that the teacher's approach towards degree of integration was less significant. The students were driven by intrinsic motivation with learning autonomy (Cheung, Lam, Lau and Shim, 2010; Watkins, 2009) in this course.

Although Garrison (2012) said any learning with independence should not be linked to the CoI, a theory of blended learning cannot ignore interest-directed research when the student goes beyond prescribed learning, especially when it relates to the curriculum and has a social feature. The link of autonomy, the independent learning with drive from intrinsic motivation and share of interpreted useful resources to inspire others to interact, should be reflected in the blended learning model, particularly if that social features employs the same online tools associated with 'social presence'. During autonomous learning, the students shared their learning results with others and inspired others to discuss in the discourse. The link of autonomous learning to the social element of the CoI is the social dimension of learning autonomy (Sinclair, 2000). Learning autonomy was in fact found to be linked to inquiry learning in this course. The results of this study also supported that the suggestion that the presence of the independent learner should be linked to the CoI (Annand, 2011; Shea and Bidjerano, 2010; Shea et al., 2013).

From this example, social, cognitive and teaching presence in the CoI (Garrison, Anderson and Archer, 2001) were found to exist in the blended learning course. However, the students' roles in designing their own learning, consolidating their ideas and initiating discourse without the presence of the teacher were not found to be reflected in the framework. A new element should be reflected in the CoI. In Section 5.3, an extended framework, with the autonomy element is proposed and discussed.

5.3 The Extended Community of Inquiry

5.3.1 Autonomy Presence

In addition to social, cognitive and teaching presence, an autonomy element was found to be linked to the inquiry learning in this study. The element, 'Autonomy Presence', is proposed in this section and its link to the CoI is discussed in Section 5.3.2 and 5.3.3.

All the students in the individual interviews said they had tried the optional online activities in the platform without a requirement from the teacher. All of them found such online activity helped their learning. Instead of studying the course according to the design and instruction by the teachers, the students had an individual drive in directing how they learnt. The students explained that they explored online learning activities because of curiosity or to look for more learning opportunities. This is an illustration of intrinsic motivation (Ryan and Deci, 2000). Their actions in directing their own learning confirmed that students can direct their learning in online learning (Bowen and Lack, 2013) and select their preferred blended options for learning (Duhaney, 2012).

As quoted in Section 4.4.2.4, other than studying the prescribed blended learning materials, Student A1 sourced learning materials by himself as he found those online resources were more suitable for his learning when compared to those given by the teacher. He gave as an example that he obtained the learning content from the website of the Association of Chartered Certified Accountants (ACCA) with his classmate. They found a question which was good for discussion with others. They then shared the question on Facebook and encouraged the classmates to discuss it. Sometimes, his classmates asked him to search for online references for sharing.

> *Student A1: I found online references that were more suitable to my learning as the level of difficulty of the content would suit me most... I believed that my capability for information searching was better than my classmates', though we were all able to find the information eventually… Some of it was obtained from the ACCA website… We found a question which was worth doing or for discussion… We posted it on Facebook and encouraged others to do it. We also solved the problem together. Sometimes, my classmates would ask for my help in searching for some information online… I believed that my capability for information searching was better than my classmates', although we were able to find the information eventually.*

In this case, the student took over the role of the teacher in designing the use of the learning content. Instead of having discussion initiated and facilitated by the teacher, the student asked his classmates to join the discussion online based on his shared learning content. The student initiated the discourse and inspired others to discuss the issue. The discourse was extended since the teacher was replaced by the students in initiating and participating in it. This finding supported that of Huang and Shi (2008), that self-directed learners sometimes do not need teachers.

The results affirmed the social, cognitive and teaching presence in the CoI (Garrison, Anderson and Archer, 2001). However, it was found that the students' roles in designing their own learning, formulating their ideas in sharing the content, and inspiring others to discuss the issue in the discourse without the presence of a teacher was not reflected in the framework. These results are in line with the argument in CoI that the role of the learner or 'learning presence' with independent learning is not reflected in the existing model (Annand, 2011; Shea, 2013; Shea and Bidjerano, 2010). According to Shea and Bidjerano (2010), the term 'learning presence' is associated with self-efficacy and self-regulation. Some of the student roles can be explained as using 'learning presence'. A further enhancement of their suggestion is to extend the CoI with the elements of students' direction in designing their learning by identifying information, their synthesis in formulating ideas for which resources are useful, and their extension of their discourse in the course by sharing and discussing ideas and useful resources among themselves. Having the nature of high autonomy in learning, as discussed in Section 4.4.3, this element is proposed as 'autonomy presence'. The link of this autonomy element to the learning community was not reflected in the CoI.

Autonomy presence is the drive to inquiry which leads learning via sharing and discussion initiated by individuals. Three categories are proposed in this element. The first category is intrinsic motivation and the indicator is the intrinsic drive of individuals. The individuals design and explore their learning by themselves. For example, the students search for content related to the course or online activities which are not instructed by the teacher. The second category is interpretation and the indicator is the formulation of ideas by individuals. After the individuals experience the learning content

or activities, they interpret whether the resources are appropriate to be shared with the classmates. They formulate ideas about what kinds of content are to be shared. The third category is inspiring discourse and the indicator is the sharing of ideas among the individuals. For example, a student initiates the discourse and then shares views by joining the discussion. This kind of discourse is similar to the discourse facilitation in the teaching presence but the teacher is replaced by the students. They may not be able to facilitate the discourse without the facilitation skills and knowledge of the contents. However, others are inspired to discuss and learn together.

The categories, indicators and evidence of autonomy presence in the blended learning course with the example of Student A1's experience is shown in Table 32.

Table 32 Autonomy Presence in the Blended Learning Course

Elements	Categories	Indicators	Evidence	Example (Quotes from Student Individual Interview)
Autonomy Presence	Intrinsic Motivation	Intrinsic Drive	Students searched for new content related to the course or participated in learning activities which were not instructed by teachers.	"I found online references that were more suitable to my learning as the level of difficulty of the content would suit me most."
	Interpretation	Formulating Ideas	Student experienced and found useful learning resources and generated some thoughts.	"Some of them were obtained from ACCA website." "We found a question which was worth doing or for discussion."
	Inspiring Discourse	Sharing Ideas	Students shared the useful learning resources to others for group learning.	"We posted it on Facebook and encouraged others to do it. We also solved the problem together."

In this example, intrinsic motivation, interpretation and inspiring discourse were found. The student sourced learning materials himself from a professional accountant website.

He explored the contents and found them useful. He then shared the resources with his classmate via social media tools. He asked his peers to have a discussion and he also participated in the discussion.

5.3.2   Limitation of the Community of Inquiry

From the discussion in Section 5.3.1, the proposed autonomy involves one or more of three indicators: (1) Students have an intrinsic drive to explore learning resources by themselves; (2) Students interpret from the learning resources and formulated ideas; and (3) Students share the resources and inspire each other. Autonomy presence then leads to social presence (emotion, expression and collaboration) and cognitive presence (information exchange, connecting ideas and applying new ideas). Sometimes, teachers participate in sharing their meanings (teaching presence).

The CoI is a framework that was proposed in the early 2000s when online tools were less convenient than the existing tools. During the construction of the CoI, there was also an intrinsic drive for exploring resources and formulating ideas. However, these were not commonly linked to inquiry in the community without effective sharing tools as illustrated in Figure 13. After one-and-a-half decades, the new technologies enable sharing in a very convenient way, for example, instant transfer of web content to social media tools with several simple clicks for inquiry in the community. Inquiry in the community via the new online tools, like social media tools, is also easier and more convenient. User-friendly technology ties self-learning with intrinsic drive to learning in the community.
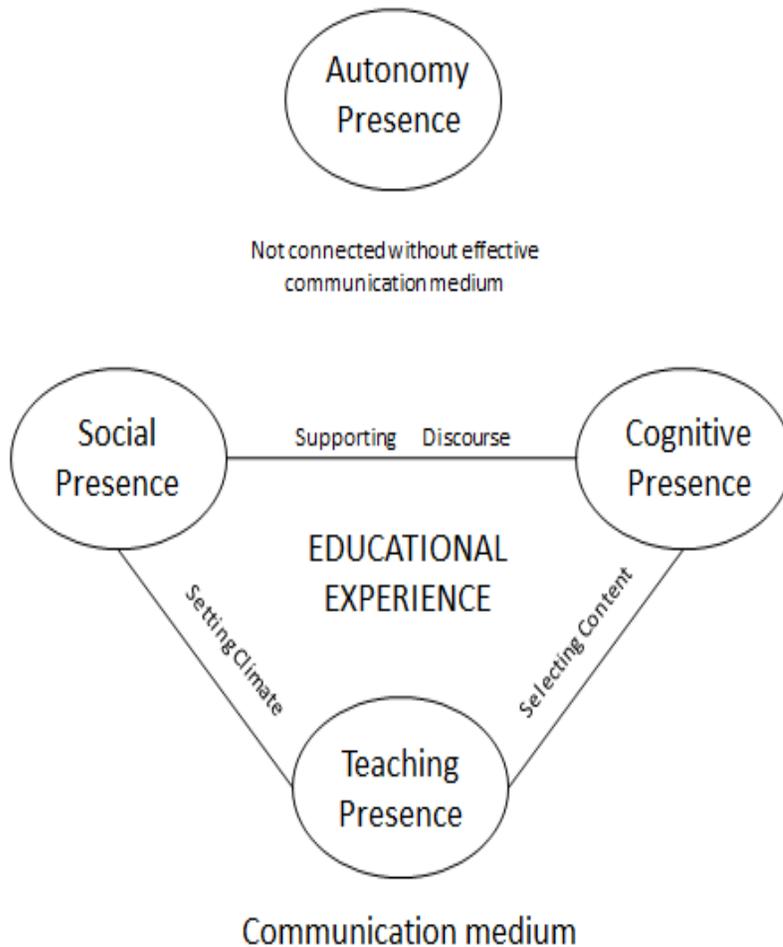
Figure 13 Autonomy Presence and the Community of Inquiry

Online environments provide new means for the community to learn via inquiry. With the advent of technology, new online tools have extended the dimension of the inquiry and linked the element of autonomy from self-study to collaborative learning in the community. Therefore, it is proposed to add the new autonomy presence to the CoI.

5.3.3 Extending the Community of Inquiry

In this study, the students explored learning resources with intrinsic drive and learnt via collaborative learning with their peers with autonomous learning. They achieved the desired learning outcomes through the learning experience with their intrinsic drive and without the process of design, facilitation and direction from teaching. Such autonomy presence interacts with social and cognitive presence in non-prescribed online collaborative learning. The role of the individual is an important element of the learning. Hannafin, Land and Oliver (1999) found that, in an open learning environment, 'the individual determines how to proceed based on his or her unique needs, perceptions, and experiences, distinguishes known from unknown, identifies resources available to support learning efforts, and formalizes and tests personal beliefs' (1999: 119). In this blended learning course, the individual determines how to learn based on his or her own drive, identifies available resources, experiences and consolidates the shared resources, and extends the discourse by initiation and participation.

In order to reflect also the element of autonomy presence, the CoI (Garrison, Anderson and Archer, 2001) model should be enhanced. There were two options for linking this to the model: (1) Add it into an existing element as a sub-category; and (2) Link it to the CoI as a new element.

In considering whether to add learning autonomy into the existing elements, social presence should be excluded because 'social' implies the interaction between two or more people. Learning autonomy only relates to social presence with its social dimension. Therefore, it should not be included, as most of the sub-elements of learning

autonomy cannot be reflected in social presence. The link between autonomy presence and social presence reflects the social dimension of learning autonomy.

Teaching presence should also be excluded as teacher-led learning and autonomous learning were exclusive. With teaching presence, the teacher designs and organizes the curriculum, and selects content for collaboration. During collaboration, the teacher sets the climate and facilitates the discourse. With autonomy presence, the students replace the role of the teacher in deciding and sharing the content and initiating and directing the discourse. On the occasions when the teacher takes part in the collaboration, the students share the useful content with the teacher. Indeed, 'autonomy presence' initiates the inquiry process through inspiring (by students) but not instructing (by teachers) which is missed in the CoI. In blended learning, students experience learning with or without the teacher's participation.

Cognitive presence is driven by an event with an indicator of puzzlement (Garrison, 2007). On the other hand, autonomy presence is driven by self-motivation. The drive is intrinsic, for example, from curiosity but not puzzlement. Therefore, autonomy presence should be distinguished from cognitive presence. Cognitive presence is 'the extent to which learners are able to construct and confirm meaning through sustained reflection and discourse' (Garrison, Anderson, and Archer, 2001). The construction and confirmation of meaning is a cognitive process during the learning process. It was the learning process of the students in this study, in both the teacher-led learning and autonomous learning. When a separate element of autonomous learning is in the CoI, the link between it and cognitive presence means learning autonomy drives the cognitive

process. This is similar to the drive from the teaching presence to the cognitive process in teacher-led learning. Autonomy presence links to cognitive presence during the process of determining the useful contents. The students explore the content and apply their ideas before sharing them for discourse initiation.

The categories of 'intrinsic motivation' and 'interpretation' relate to individuals but not closely relate to the cognitive process driven by puzzlement in the cognitive presence. Instead, they are the individual dimension of autonomous learning. The category of 'inspiring discourse' relates to a social group which is the social dimension of autonomous learning. Learning autonomy has an individual as well as a social dimension (Sinclair, 2000). While the categories are highly related to autonomous learning, it is more appropriate to group them as a new element instead of putting them under the existing presences. Therefore, autonomy presence is added as a new element in the model.

The 'Extended Community of Inquiry', as shown in Figure 14, proposes to link the autonomy presence element to reflect a complete framework for blended learning. The suggestion of linking the independent element to the CoI has been proposed by some researchers in their previous studies. For example, Shea and Bidjerano (2010) proposed linking a 'learning presence', which represents the independent learning in blended learning, to the CoI model. Annard (2011) also proposed to reflect the effects of individual learner attributes to the model. In response to these suggestions, Garrison (2012) expressed his view that, even though an independent element exists in blended learning, independent study is an objectivist paradigm but CoI is a constructivist paradigm and therefore the independent element should not be considered in the model.

However, autonomous learning is not necessarily coincident with social isolation (Ponton and Rhea, 2006). In this research, autonomous learning was found to be linked with the learning community. This study agrees with Richter (2013), that the presence of the learner is important since there is less teacher presence in self-directed learning in the online environment and high levels of engagement may be related to the presence and connections among learners.

Extended Community of Inquiry

EDUCATIONAL EXPERIENCE
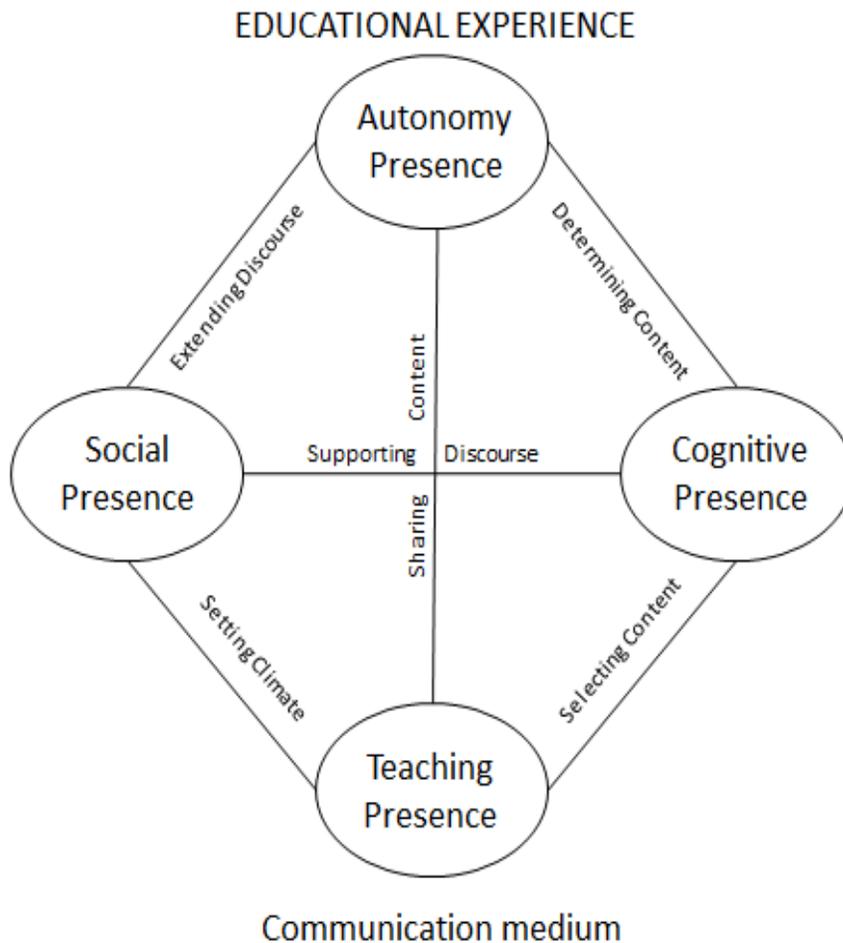
Figure 14 Extended Community of Inquiry

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Shea and his co-researchers proposed naming the independent element 'learning presence' (Shea and Bidjerano, 2010; Shea et al, 2013). However, the proposed element that reflects the link of autonomous learning to the learning community in this study is 'autonomy presence' instead. First, the autonomous learning found in this study relates to self-directed learning initiated from intrinsic motivation. It is different from the self-regulation and self-efficacy of the 'learning presence' proposed by Shea and his colleagues. Second, learning happens during autonomous learning, social interaction and cognitive process and the term 'learning presence' is not specific enough to represent the element that only relates to autonomy but not the whole learning process.

The term 'autonomy presence' proposed in this study includes both the independent dimension and social dimension of autonomous learning. Autonomy presence happens when an individual explores learning resources from intrinsic motivation and interprets useful resources among them. It links to the learning community when the individual shares the useful resources with others using the communication media and initiates the discourse to inspire others to discuss the issue in the learning community. In this blended learning course, the students directed the exploration and sharing of learning resources, initiated the discourse and inspired their peers to discuss with or without teaching presence.

Based on the discussion in this chapter, it is proposed that the elements, categories and indicators of the CoI be extended, as shown in Table 33. While the categories and indicators of social presence, cognitive presence and teaching presence remain

unchanged, the new element, autonomy presence, and its categories and indicators are added, as described in Section 5.3.1.

Table 33 Elements, Categories and Indicators in the Extended Community of Inquiry

Elements	Categories	Indicators
Social Presence	Effective Expression Open Communication Group Cohesion	Emotions Risk-free Expression Encourage Collaboration
Cognitive Presence	Triggering Event Exploration Integration Resolution	Sense of Puzzlement Information Exchange Connecting Ideas Applying New Ideas
Teaching Presence	Design & Organization Facilitating Discourse Direct Instruction	Setting Curriculum & Methods Sharing Personal Meaning Focusing Discussion
Autonomy Presence	Intrinsic Motivation Interpretation Inspiring Discourse	Intrinsic Drive Formulating Ideas Sharing Ideas

Autonomy presence, the newly added element, relates to the learning initiated from the individual's independent drive for communication and exploration of learning opportunities in order to achieve learning objectives. It has three categories. Intrinsic motivation, indicated by the individual's intrinsic drive, is the drive with the objective of discovering resources or exploring online learning activities. Interpretation, indicated by idea formulation, is about the individual experiencing the learning resources and determining the useful resources to be shared. Inspiring discourse, indicated by idea sharing, is about individual sharing the useful learning resources with others via online collaboration in which learning occurs through discussion and interaction.

Learning can be experienced by the process of flowing among the presences. An example is when a student explores the Internet with the intention to find useful content to learn more about a course. He searches on the Internet (autonomy presence: intrinsic motivation), locates a lot of content and interprets which of this content is useful for study or collaboration (autonomy presence: formulating ideas). He decides to share his ideas with his classmate and inspires others to discuss (autonomy presence). They then discuss online with information exchange (social presence). Through discussion, the students connect the ideas and apply new ideas (cognitive presence). So, 'sharing ideas' (autonomy presence) is the step in which the individuals pass the content they have found for discussion to others and 'encourage collaboration' (social presence) in learning. In the discussion process, 'information is exchanged' for thinking in cognitive presence. With the element of autonomy presence and its link to the CoI model, the learning experiences of the students in the MA blended learning course can be reflected fully.

5.4 Conclusion

The students learned in the MA blended learning course by engaging in the prescribed traditional and online activities. They also engaged in non-prescribed activities with autonomous learning and online collaboration. The students explored the non-prescribed learning activities in the online platform and searched the Internet to identify useful resources for learning. They shared these useful learning materials and initiated the discourse with their peers via social media tools.

The students' experiences of the course are examined here from the perspective of CoI. Social presence occurred when they collaborated in both face-to-face and online modes.

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Cognitive presence occurred when they experienced puzzlement about their learning and explored the solutions. Teaching presence was found when the teachers designed the teaching and facilitated the discourse.

It has been found that the role of autonomy cannot be categorised in the CoI elements. The element 'autonomy presence' proposed in this study includes both the independent dimension and social dimension of autonomous learning. The autonomy presence element is not linked to the CoI because the communication media during the construction of the framework were not as mature as the communication media today. With the advent of technology, the autonomy presence can now be linked to the CoI with the convenient and easy-to-use social media tools.

An Extended Community of Inquiry (ECoI) framework is proposed so that the element of autonomy presence can be reflected. In the proposed framework, autonomy has three categories. The first category is intrinsic motivation and the indicator is the individual's intrinsic drive of individuals. The individuals design and explore their learning by themselves. Students who are motivated intrinsically might search for new content or new online activities without being instructed to do so by the teacher. The second category is interpretation and the indicator is the formulation of ideas by individuals. After the individuals experience the learning contents or activities, they interpret whether the resources are appropriate to be shared with their classmates. They formulate ideas about what kinds of content are to be shared. The third category is inspiring discourse and the indicator is the sharing of ideas among the individuals. One student initiates the discourse and then shares views by joining the discussion. This kind of discourse is

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similar to the discourse facilitation in the teaching presence but the teacher is replaced by the students. They inspire others to discuss and learn together.

Since the study is case specific, 'students' in this study refer to 'sub-degree students' and 'blended learning' refers to the 'blended learning of the sub-degree Accounting course'. The proposed ECoI is particularized for understanding the student experience of this sub-degree blended learning Accounting course. By understanding the sub-degree students' learning experiences in the blended learning Accounting course, the study inductively explored a particular case for achieving particularisation for 'naturalistic generalisation' (Stake, 1995). It is expected, through more studies for particularisation, that the students' experiences in blended learning can be reflected fully from a holistic perspective with the generalised ECoI.

6 CONCLUSION

6.1 Research Contribution

This research inquired into students' learning experiences within a blended learning Management Accounting course of a Higher Diploma programme in The University of Hong Kong. With the aims of the study as (1) to understand the students' learning experiences and (2) to explore new issues in a blended learning environment, three research questions were developed in the process of reviewing the literature. The research questions were: 'How do students learn in a blended learning environment?', 'Why do students engage in a blended learning course?' and 'How do external factors influence student engagement in blended learning?'. By answering the research questions in this study, the aims were achieved and contributions have been made to the literature.

The first aim was achieved by understanding the students' learning experiences through 7 qualitative methods in the case study of the MA blended learning course with 1 course leader, 2 teachers and 2 classes of 80 students. By using thematic data analysis, 12 themes and 85 sub-themes were identified. The study results confirmed that blended learning connected learning in the classroom and beyond (Bentley, 1998) and that the blended learning approach was a more holistic way to provide an overall learning environment (Bu and Bu, 2012). The students reported that they had deep learning from having interaction with others and doing learning activities (Biggs and Watkins, 1995). From the students' self-directed learning in exploring non-prescribed learning resources and their use of social media in online collaboration with their classmates solely in the

blended learning course, it was illustrated that blended learning places the control of learning into the learners' hands (Li, Ullrich, Helou and Gillet, 2010; McLoughlin and Lee, 2010). In this course, they directed their learning and inspired others to interact using social media. During online collaboration, the students learnt from the 'more knowledgeable others' through social interaction (Vygotsky, 1962). In the learning process, they experienced personal problems, technical problems and course problems (Le, Huang, Zhow and Li, 2010; Sitzmann, Ely, Bell and Bauer, 2010). In this course, the students expected their teachers to provide more online teaching support (O'Conner, Mortimer and Bond, 2011) but the institution cannot provide this level of support (Bowen and Lack, 2013). Also, the students preferred more support, like more integrated blended learning and more mobile learning (Lam, Hung, Wong and Chan, 2015). The results also affirm earlier studies about Hong Kong students. In this case, some students were driven by intrinsic motivation with the mastery of goal orientation (Watkins, 2009) and most of them had language problems associated with learning in English (Biggs and Watkins, 1995). The contribution to understanding of the blended learning experience is the provision of an in-depth analysis for higher-education providers to consider so that they can adopt blended learning in the most appropriate way to enhance teaching and learning.

The second aim was achieved by exploring new issues in the blended learning environment. It was found that there were significant differences in the total learning times of the two classes. The class that learnt in an integrated blended learning mode experienced about double the learning time of the class that learnt in a supplemented blended learning mode. This implies that the level of integration in teaching design might affect the students' learning (Duhaney, 2012). Furthermore, it was found that, in some

instances, the students experienced learning without a teaching presence but with drive and direction from individuals. Similar to the online environment which enabled new means of learning in the CoI, the new online tools, like the social media tools, extended a new dimension of learning to the CoI. With the user-friendly and convenient features of online communication tools, students can share new content as well as their new ideas with others very easily. This study has shown that the social dimension of learning autonomy (Sinclair, 2000) occurred in the course. Also, the learning autonomy was linked to the learning inquiry. In this case, the CoI framework could not fully reflect the students' learning experiences, with only the elements of social presence, cognitive presence and teaching presence occurring. As a result, 'learning autonomy' is proposed as an additional element to link to the framework. It includes both the independent dimension and social dimension of autonomous learning. It is believed that this addition is due to the advancement of social networking applications - that their convenience facilitates the linking of blended learning, especially online learning, by the students. The new framework reflects the enrichment of inquiry with the new connection of autonomous learning to the community by the convenient online tools. By extending the CoI framework to the ECoI framework, the contribution of this study is to provide a holistic model for the successful design and implementation of blended learning in higher education institutions.

6.2 Limitations and Further Studies

Since I was a member of the project board and was very familiar with the research project, a potential limitation was that I would bring a set of assumptions to a familiar setting. To ensure that my study was not biased, all of the interview questions were reviewed by the research supervisors and a local expert in blended learning. To enhance the reliability and validity of the study, triangulation of the methods and data was designed. The recordings of the interviews were listened to by another local expert in blended learning in order to confirm the reliability and validity.

Another limitation was the question of appropriateness of generalisation of the case study research. In proposing a new element in the CoI, this study aimed to serve as a particularisation for generalisation in the literature. As stated in Section 4.1 and Section 5.3.3, the research questions and results of this study are case specific. The term 'students' in this study refer to 'sub-degree students' only and 'blended learning' refers to the 'blended learning of the sub-degree Accounting course'. This study successfully achieved particularisation by proposing the ECoI model for understanding the learning experience of the sub-degree students of a blended learning Accounting course. Generalisation is targeted to be achieved through more studies in the future.

There are possible limitations of student interview self-accounting. I was a colleague of the course leader and the teachers. With such a relationship, the students might have felt reluctant to tell me their negative views. Besides, the students might feel the correct answer was the positive one and they might also feel that answers were required and so they must be found. To handle this, I explained to the students that I was an independent

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researcher who worked in a different department and even a different location from the course leader and the teachers. At the beginning of all the interviews, I emphasized the issues of confidentiality and anonymity to them. Also, I explained there were no right or wrong answers, and encouraged them to express their views freely.

Another limitation was that this study could not provide data about whether the students used online materials as just another form of traditional learning. For example, whether they read an article online instead of in paper-format. Certainly, this study documented many experiences that must have happened with the integration of traditional and online learning, for instance, learning with activities (not duplication of learning resources) that were specially designed for blended learning, engagement in the integrated blended learning activities, collaboration in the blended learning environment, and barriers, needs and preferences specific to blended learning. However, to what extent the learning practice was just using the different forms of materials should be studied further, in order to differentiate the change of blended learning experience and the change of learning with same content in different formats.

It was found that the total learning times of the two classes were significantly different. The class that learnt in an integrated blended learning mode experienced much more time of the class that learnt in a supplemented blended learning mode. This implies that level of integration might affect the students' behaviour in learning. It also implies that integrated blended learning, rather than being an assembly of unrelated, disconnected, and fragmented learning activities, can ensure good learning experiences (Tu and Corry,

2003). To understand if these are the only reasons to explain the deviation of learning time for the two classes, further studies should be conducted.

In this study, only 3 out of the 8 individual interviewed students were found to have autonomous learning driven by intrinsic motivation. Of these 3 students, 1 shared the learning resources with others and initiated the discourse. This means that there was only 1 case with direct evidence showing that learning autonomy was linked to the CoI. However, it does not mean the other 7 students did not do so. The link was discovered during analysis of new issues at the final stage of the study. By that time, all the data had been collected. Therefore, the questions related to whether the students' learning was driven by intrinsic motivation, whether they shared the learning resources with others during autonomous learning, and whether they inspired others to interact were not asked explicitly in the interviews. The only student who linked autonomous learning to the inquiry community described the entire learning process when he answered the question related to using social media to communicate. This implies that it might have happened in the learning processes of the other 7 students, but it could not be examined in this study. Therefore, future qualitative studies with questions directly addressing autonomous learning and its link to inquiry learning using communication media should be conducted. Research on autonomy presence in blended learning in the ECoI framework should be conducted so that generalisation can be achieved through numbers of particularised case studies. Also, quantitative studies should be carried out to identify the statistics and trends from a wider range of data. Nevertheless, the study achieved the aim of particularising the linking of learning autonomy to inquiry learning.

Another further study is needed to investigate whether the students truly learnt without the teaching presence but with the autonomy presence. The role of teacher is important as the teaching presence has a larger effect on satisfaction and perceived learning than interaction among peers (Swan, 2001). However, the reality in this study was that the students found they learnt by collaboration with their peers, especially from more knowledgeable others. In the CoI, the teaching presence created the community of inquiry where 'interaction and reflection are sustained', 'ideas can be explored and critiqued' and 'the process of inquiry can be scaffolded and modelled' (Garrison and Cleveland-Innes, 2005: 134). In this study, autonomy presence created a community of inquiry and the students' ability of self-directed learning as adult learners (Knowles, 1975). The ways in which the elements of teaching presence and autonomy presence could complement each other for enhancing the learning experience were worth being further studied.

Beside the autonomy presence proposed in this study, Shea and Bidjerano (2010) also proposed to include 'learning presence' into the CoI. While learning presence is associated with self-efficacy and self-regulation, it has some similarities to autonomy presence, which is associated with self-directed learning and self-motivation. Since both these authors and my own assertions had the element of 'self' which was not reflected in the CoI, studies of the fourth presence with 'self' might further strengthen the assertion by merging the ideas of 'autonomy presence' and 'learning presence'.

6.3 Implications

This study has a number of implications. First, blended learning does not only mean the appropriate integration of traditional and online learning, but also means the appropriate integration of teacher-led and student-led learning. In this course, the teachers designed the level of integration of traditional and online learning. It is believed that this resulted in behavioural changes in the students. The teacher of the integrated blended learning class instructed the students to participate in the blended learning activities and also facilitated the discourse. The students of the integrated blended learning class had spent around double the time of the students in the supplemented blended learning class participating in both the traditional and online learning activities over the entire course period. Therefore, in the blended learning environment, the role of teacher-led learning is important.

On the other hand, regardless of the level of integration of the blended learning course, the students in both classes had similar behaviours in exploring new learning resources online and directing their own learning. They made use of social networking applications to interact with their classmates and even learnt from each other without the teacher. Student-led learning is, therefore, also important in the blended learning environment. In this course, student-led learning was not designed or monitored by the School. Furthermore, the course leader and the teachers did not know how the students learnt in this way. While student-led learning is so apparent in the blended learning environment, as found in this study, it is important to the School to consider the appropriate integration of teacher-led and student-led learning when designing blended learning courses. In the

student-led learning, measurement processes should be incorporated for the teachers to monitor, to be involved in, and to provide appropriate guidance and support to the students when needed.

Second, the student experience changes along with technological changes, and therefore the understanding of the learning experience in practice and in the literature should also be changed accordingly. An important issue in this study was that the students were engaged actively in non-prescribed online collaboration with the social networking applications. With the increase in usage of online communication and popularity of social media tools, it is believed that the impact of new online tools in blended learning will be more significant. In this case study, the autonomy presence was linked to the CoI with the advent of technology. As explained by the students, they looked for more up-to-date technological support for their learning. For example, some of them preferred mobile learning which could help them learn beyond time and place limitations. Mobile learning has further increased the flexibility of ubiquitous learning, which may affect students' future learning experiences. It is expected that new technologies in the future will have an impact on blended learning. Therefore, continued study of blended learning is required in the fast-changing learning environment.

At the time of constructing the CoI in this study, the students also had an intrinsic drive to explore learning resources and formulate ideas from them. However, these resources were not commonly shared or connected to the community, as the online tools were less convenient. The role of the individual in initiating and inspiring discourse was not prominent and, therefore, it is true that autonomous learning could not be included in the

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CoI. However, the learning environment has been changing and such kinds of learning are now connected to the community with online tools as the media. The CoI framework does not reflect the type of inquiry in the community that is inspired by individuals with autonomy in learning and connected by the new online tools. Autonomous learning by individuals is now connected to the CoI by the new online environment. The autonomy presence element is proposed in order to extend the dimension of the CoI. The study implies that the understanding of blended learning should be changed in line with the learning environment.

The third implication is that the higher education institutes should change, not only in adopting new technologies but also with sufficient support to both the teachers and students in implementing the change. During online learning, the students in this study found problems and needed online teaching support. They found the size of the question pool and the depth of instant feedback insufficient for doing online exercises. Therefore, they requested more questions and more detailed explanations and instant feedback. Besides, they needed to ask questions and suggested having online discussion, online consultation hours and online classes to help them learn online with more support. This implies that institutions and teachers should provide more facilitation and support to students in blended learning. However, the teachers reflected that the resources to support their teaching were insufficient. They did not even have training to learn how to teach in the blended learning mode. Certainly, the higher education institutes should react quickly with the continuously and rapidly changing online environment. However, their actions should not only include the adoption of new technologies but also resource re-allocation, training and support for teachers, and support for students.

The fourth implication is that higher education institutions should consider local limitations in adopting blended learning. In this course, the students found problems with learning in English. As the programme was in English and the students were required to do the examination in English, it was not feasible always to teach them in Chinese in the face-to-face class. However, as suggested by the students, bi-lingual online content and online communication may help in lessening to lessen the problem. It is important for institutes to explore new opportunities to enhance learning effectiveness, to lessen the local limitations through technologies, for example, using instant translation technology to lessen the problems of learning in a second language. It may even help in lowering the development costs to provide bi-lingual online content, which is more realistic for institutions providing blended learning with limited budgets. Besides, as suggested by a student in the individual interviews, the interactive artificial intelligence system could help to answer some of the students' questions while learning instantly. Although the study was carried out in Hong Kong, this is not a problem for Hong Kong students only, but for all Chinese learners or even for all the students over the world who need to learn in a second language. With an understanding of the local limitations, institutions can even make use of the features of blended learning to solve students' learning problems.

In summary, this study has several implications. First, blended learning does not only mean the integration of traditional and online learning, but also means the appropriate integration of teacher-led and student-led learning. Second, student experiences change along with technological changes and, therefore, the understanding of learning experiences in practice and in the literature should also evolve accordingly. Third, higher education institutes should change not only in adopting new technologies but also with

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sufficient support to both teachers and students to implement the change. Fourth, higher education institutes should consider local limitations in adopting blended learning, and even make use of the features in blended learning to solve students' learning problems. All of these imply the importance of having appropriate changes along with the fast change of new technology, and to make use of new technology to enhance students' learning experiences.

6.4 The Way Ahead

I enrolled in the doctoral programme in 2009. Since then, I have been involved in editing books and publishing academic papers. From 2009 to 2015, I have co-edited 6 books related to blended learning and technology in education. Together with the publications arising from this study and others for my institute, I have published as the author/co-author 9 journal articles, 21 book chapters and 7 papers in academic conference proceedings in the areas of blended learning. The publication list is in Appendix L. Out of these publications, the journal papers 'Autonomy presence: Extending the Community of Inquiry', 'Examining student experience of blended learning from the perspective of Community of Inquiry framework', 'Engagement in collaborative learning using social media tools in a blended learning course' and 'The student experience of a blended learning course in Hong Kong' are the results of this research study. Also, 4 book chapters and conference papers have reported results of this research related to blended learning contexts, students' experiences, collaborative learning using social media tools and CoI frameworks.

My research plan is to align with the research needs of my institution, which are in the same areas as in my research interests in blended learning. My work unit is responsible for providing all the services related to online learning to the staff, teachers, students and potential students. I am required, and plan, to study issues relating to online systems (LMS, mobile app, virtual classroom, webinar and knowledge management system), blended learning courses (instructional design, development and multimedia), blended learning users (student experience, teacher experience and training), blended learning materials (open educational resources and massive open online course) and blended learning management (policy, strategy, model and good practice) in the coming years.

As an extension to this research, I plan to study the link of learning autonomy to inquiry learning in other blended learning courses in my institute. The target course is Korean Language, which has been designed and developed into a blended learning mode since 2013, to fulfil the learning needs of the increased popularity of the Korean culture in Hong Kong. I plan to collaborate with colleagues of my institution and researchers of other higher education institutions to study more such courses in order to achieve more particularised cases of the ECoI model.

This research not only contributes to the literature, but also contributes to the development of blended learning in practice. This study has influenced my institute to develop mobile learning support for the teachers and students. In the middle of this study, the preferences for having mobile learning were identified. After further review of the literature, studies on the technical feasibility, staffing calculations and technical resources, and estimations of the schedule, a proposal for the development of a learning platform

mobile app was submitted to the senior management of the School. The management approved the proposal and the mobile app was developed and launched in late 2014 under my supervision. From the comparison of system access before and after the launch of the mobile app, it is found that the overall usage of the learning platform has increased and the access has been shifting from computers to mobiles continuously in just 7 months since the launching of the app (Hung, Lam, Wong and Chan, 2015). This is a practical contribution to higher education.

As an extension to this research and the practical implementation of the mobile learning support in my institution, the learning experiences in the new blended learning environment will be further enriched. To keep pace with the ever-changing technology, I will make use of my specialized knowledge, professionalism and experience to propose advancement on blended learning with the application of new technology in order to enhance students' learning experiences.

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APPENDICES

Appendix A: Management Accounting (MA) Course Topics

Topics	Descriptions
1 - Introduction to Managerial Accounting and Cost Concepts	Financial and Managerial Accounting, Schedule of cost of goods manufactured, Manufacturing cost flows, and Cost classifications for predicting cost behaviour.
2 - System Design: Job-Order Costing	Process costing and job-order costing, predetermined overhead rates, flow of costs in a job-order costing system, journal entries to record costs, schedules of cost of goods manufactured and cost of goods sold, under applied or over applied overhead costs, and journal entry to close the balance in Manufacturing Overheads to the appropriate accounts.
3 - System Design: Activity-Based Costing	Overhead Costs to Products, Activity-Based Costing System, Activity-Based Costing, Process Improvements, and Cost Flows in Activity-Based Costing Systems.
4 - System Design: Process Costing	Job-order and process costing systems, flow of costs in process costing, equivalent units of production and the computation, equivalent units under weighted –average and FIOF methods, and costs under weighted-average and FIFO methods.
5 - Cost Behaviour: Analysis and Use	Types of cost behaviour patterns, mixed costs and methods of estimation, the contribution approach and income statement preparation, and Absorption and Variable Costing.
6 - Cost-Volume-Profit Relationships	The basics of Cost-Volume-Profit (CVP) analysis, Break-even analysis, CVP considerations in choosing a cost structure, Structuring sales commissions and Assumptions of CVP analysis.
7 - Profit Planning	Basic Framework of Budgeting, and the Master Budget.
9 - Standard Costs	Standard costs – Management by Exception, General Model for Variance Analysis, Standard Costs – Direct Material Variances, Standard Costs – Direct Labour Variances, standard Costs – Variable Manufacturing Overhead Variances, Variance Analysis and Management by Exception, Evaluation of Controls Based on Standard Costs, Balance Scorecard, and Journal Entries to Record Variances.
11 - Relevant costs for Decision Making	Cost Concepts for Decision Making, Adding and Dropping Product lines and Other Segments, The Make or Buy Decision, Opportunity Cost, Special Orders, Pricing New Products, and Utilization of a Constrained Resource.
12 - Capital Budgeting Decisions	Capital Budgeting – Planning Investments, The Net Present Value Method, The Net Present Value Method and Income Taxes, Other Approaches to Capital Budgeting Decisions, Post-audit of Investment Projects, and The Concept of Present Value.

Appendix B: Denscombe's Checklist for the Case Study Approach

Questions	Answers	Remarks
1. Is the research based on a 'naturally occurring' situation?	Yes	The MA blended learning course occurred naturally for students to study.
2. Have the criteria for selection of the case (or cases) been described and justified?	Yes	Criteria as suggested by Stake were described and justified.
3. Has the case (or cases) been identified as a particular instance of a type of social phenomenon? (e.g. kind of event, type of organization)	Yes	The case is a particular instance of the learning of MA in a blended learning course.
4. Have the significant features of the case been described and have they been compared with those to be found elsewhere amongst the type of thing being studied?	Yes	During the literature review, significant features and issues about blended learning were found. Comparison was carried out in the discussion.
5. Is the case a fairly self-contained entity?	Yes	The MA blended learning course was a self-contained entity including administration, course design, teaching and learning.
6. Have the boundaries to the case been described and their implications considered?	Yes	The boundary was described as the course within the institute. This implies the case was a particular one which served to form generalisations to other cases.
7. Has careful consideration been given to the issue of generalisations stemming from research?	Yes	Issues from the literature review were listed and later referred for designing the research.
8. Does the research make suitable use of multiple methods and multiple sources of data?	Yes	Methodological triangulation and data source triangulation were used.
9. Does the research give due attention to relationships and processes, and provide a 'holistic' perspective?	Yes	The holistic view was constructed; the relationships and processes inside the view were focused.

Appendix C: First Teacher Interviews

Management Accounting Course
1st Teacher Interviews

Purpose
- To understand why teachers used a blended learning mode in teaching and learning.
- To understand how the course was designed.
- To understand how the course delivery was planned.
- To understand how the teachers encouraged students' engagement and interactions in the blended learning environment.
- To understand the perceived advantages of blended learning from the teacher's viewpoint.
- To understand the difficulties of blended learning from the teacher's viewpoint.

Target Selection
- The 2 teachers (Teacher A and Teacher B) who taught the MA classes.

Introduction
- Welcome the teacher.
- State purpose of the 1st teacher interviews.
- Explain use of data (for research purpose and names will not be disclosed).
- Gain consent on tape-recording.
- Explain no right or wrong answers.
- Encourage the teacher to express his/her views freely.

Questions
[Background]
1. Would you please tell me your teaching experience (Overall, Accounting subjects and Management Accounting subjects)?
2. How many classes and students are you teaching in the MA course this semester?
3. What kinds of topics will be covered in the course?
4. Can you describe the modes of teaching and learning of the course?
5. Have you had experience in using e-learning for teaching before?

[Blended Learning Course Project Design and Development]
6. You are one of the project members in designing and developing the blended learning course during 2009-2011. Can you tell me why you decided to join the team to develop blended learning MA course?
7. Can you describe what you did during the blended learning MA course development?
8. What were the factors you considered during course re-design in the blended learning mode?
9. Could the e-learning experts help you during the design and development?

[Course Delivery]
      10. How did you plan for this blended learning course?
      11. How did you introduce the blended learning mode to students in the class?
      12. How will you integrate traditional and e-learning in the MA course?
      13. What do you expect about students' learning in the mixed learning mode?
      14. How will you monitor students' performance in the class and in the online environment?

[Blended Learning]
      15. What kinds of learning activities (traditional and e-learning) will you use in the course?
      16. To what extent do you think e-learning can help your students' learning?
      17. How will you encourage students in learning inside the classroom?
      18. How will you encourage students in learning online outside classroom?
      19. What are the advantages and disadvantages of blended learning in your course?

[Difficulties]
      20. What are the difficulties you may face?
      21. Is support from the programme team sufficient?
      22. Is support from the e-learning team sufficient?
      23. What are the difficulties students may face?
      24. What do you plan to do to help students to use e-learning more effectively?

Closing
- Do you have any more comments or questions about today's interview?
- Thank the teacher.

Appendix D: Classroom Observations

Management Accounting
Classroom Observation

Introduction
The classroom observation is to capture teaching and learning actions occurring in a snapshot of a lesson of the Management Accounting course. The observation records will be analysed for research purpose. The analysis results will also be used for question set up in the focus group interviews and individual interviews.

The Observation Forms
Six observation forms will be used in the classroom observation.

Form	Name	Focus	Scope	Target	Source
1	Open-Ended Classroom Observation	Everything that occurs in the classroom	Wide	Teacher and students	Modification of forms from a book
2	Students' Activities Checklist	Students' Action	Narrow	Students	Modification of forms from a book
3	Tracking Calling Patterns	Calling and interaction patterns during a class period	Narrow	Students	Direct use of a form from a book
4	Observation Guide Using Bloom's Taxonomy	Questioning strategies based on the class discussion	Narrow	Students	Direct use of a form from a book
5	Classroom and Online Learning	Linking classroom and online learning	Narrow	Teacher and students	Self-designed
6	Instructional Methods and Student Responses	Instructional techniques; instructional materials used by the teacher	Narrow	Teacher and students	Modification of forms from a book

Observation
The researcher will attend the 3-hour lesson with the students. During the lesson, the researcher will observe the class and take observation records using the observation forms. In addition, the class will be audio-recorded for reference in the research analysis.

Open-Ended Classroom Observation

Angle: Wide
Focus: Everything that occurs in the classroom

Teacher: Observer:

Date of Observation: Start Time: End Time:

Total Observation Time: Period of the Day:

Number of Students Present: Grade Level:

Class: Topic of the Lesson:

Time	Teacher	Students	Other
Additional Observations			

Note: Modified from Tool 8 and Tool 41 of the observation forms, Zepeda S. J. (2012), Informal Classroom Observations On the Go Eye On Education, 3rd Ed., NY: Eye On Education.

Students' Activities Checklist

Angle: Narrow
Focus: Students' Action

Teacher: Observer:

Date of Observation: Start Time: End Time:

Total Observation Time: Period of the Day:

Number of Students Present: Grade Level:

Class: Topic of the Lesson:

Check	Students were	Time	Notes
	Attending lecture		
	Working in small, cooperative groups		
	Making a presentation		
	Taking a test		
	Working independently at their desks		
	Viewing a film		
	Others		

Note: Modified from Tool 10 and Tool 11 of the observation forms, Zepeda S. J. (2012), Informal Classroom Observations On the Go Eye On Education, 3rd Ed., NY: Eye On Education.

Tracking Calling Patterns

Angle: Narrow
Focus: Calling and interaction patterns during a class period

Teacher: Observer:

Date of Observation: Start Time: End Time:

Total Observation Time: Period of the Day:

Number of Students Present: Grade Level:

Class: Topic of the Lesson:

Legend
Entire Class Response: ECR   Individual Response: IR
Individual Help: IH   Question: Q   Comment: C

Front of Room

	A	B	C	D
1				
2				
3				
4				
5				

Note: Direct use of Tool 25 of the observation forms, Zepeda S. J. (2012), Informal Classroom Observations On the Go Eye On Education, 3rd Ed., NY: Eye On Education.

Observation Guide Using Bloom's Taxonomy

Angle: Narrow
Focus: Questioning strategies based on the class discussion

Teacher: Observer:

Date of Observation: Start Time: End Time:

Total Observation Time: Period of the Day:

Number of Students Present: Grade Level:

Class: Topic of the Lesson:

Time	Questions and Activities	Knowledge	Comprehension	Application	Analysis	Synthesis	Evaluation

Note: Direct use of Tool 18 of the observation forms, Zepeda S. J. (2012), Informal Classroom Observations On the Go Eye On Education, 3rd Ed., NY: Eye On Education.

Classroom and Online Learning

Angle: Narrow
Focus: Linking classroom and online learning

Teacher: Observer:

Date of Observation: Start Time: End Time:

Total Observation Time: Period of the Day:

Number of Students Present: Grade Level:

Class: Topic of the Lesson:

Time	Activity	Topic	Linked Online Learning? How?

Note: Self-designed

Instructional Methods and Student Responses

Angle: Narrow
Focus: Instructional techniques; instructional materials used by the teacher

Teacher: Observer:

Date of Observation: Start Time: End Time:

Total Observation Time: Period of the Day:

Number of Students Present: Grade Level:

Class: Topic of the Lesson:

Time	Instructional Method	Teacher Behaviour	Student Activities or Response

Note: Modified from Tool 27 and Tool 29 of the observation forms, Zepeda S. J. (2012), Informal Classroom Observations On the Go Eye On Education, 3rd Ed., NY: Eye On Education.

Appendix E: Study Logs with Reflections

Management Accounting (CC 66-330-22-03)

Instruction
This learning diary is to record your learning processes and learning experiences for research purposes. The aim of the research is to understand students' learning experiences in the blended learning environment. A briefing will be provided after the class on 10 April 2013. You can write in either English or Chinese.

Please fill in your learning activities of the Management Accounting course from 10 April 2013 to 16 April 2013. You are required to fill in the time you spent on the learning activities and your learning experience of having such activities. The learning activities are categorized in two groups, online learning and non-online learning. If you have any learning activities that are not listed in the form, please specify them in the field of 'others'. At the end of each day, please share your overall learning experience of that day. Below please find an example of form filling.

Example
Online Learning

Learning activities	*Time*	*What is your learning experience?*
Chapter Preview	*09:00-09:15*	*I learnt the definition of process costing in 'Chapter Preview'. It helps me to have better understanding of the topic before my class.*
Warm-up Quiz	*Nil*	*Nil*

Non-online Learning

Learning activities	*Time*	*What is your learning experience?*
Lecture	*12:30-15:30*	*I attended the lecture about process costing. Teacher A introduced the concepts to us. We then had group discussion on a case and presentation of costing solution. The topic was difficult but the teacher's explanation was clear. I think I can learn more if I do the online exercise in the coming week.*
Others (Please specify)	*16:00-16:30*	*I went to the library to search for information about process costing.*

Overall blended learning experience today:
I previewed the topic process costing before class this morning and then attended the class It helped me learn the concept before the class. After the class, I found some topics were difficult and I went to the library to search for reference materials. I still felt puzzled about conversion cost and equivalent unit. I plan to study online content and do online exercise to learn more about the topic.

On 16 April 2013, please answer the questions in the last page of the learning diary. You need to pass this learning diary to the class representative in the class on 17 April 2013. If you have any questions, please feel free to send email to me (jeanne.lam@hkuspace.hku.hk) or call me (97761001). You can also send WhatsApp or text messages to me via mobile phone. Thank you for your contribution to the research!

10 Apr 2013 (Wednesday)

Online Learning

Learning activities	Time	What was your learning experience?
Chapter Preview (SOUL 2.0)		
Warm-up Quiz (SOUL 2.0)		
Matching Game (SOUL 2.0)		
Chapter Quiz (SOUL 2.0)		
Chapter Review (SOUL 2.0)		
Level Quiz (SOUL 2.0)		
Chapter Exercise (SOUL 2.0)		
Thinking Forum (SOUL 2.0)		
Online searching		
Send email to teacher		
Others (Please specify)		

Non-online Learning

Learning activities	Time	What is your learning experience?
Lecture		
Talk with teacher		
Talk with classmates		
Group project discussion		
Textbook reading		
Reference book reading		
Assignment		
Exercise		
Others (Please specify)		

Overall blended learning experience today:

_____
_____
_____
_____
_____
_____

Overall Learning Experience
10 Apr 2013 (Wednesday) - 16 Apr 2013 (Tuesday)
(To be answered on 16 Apr 2013)

1. What did you learn in this week (10 Apr 2013 – 16 Apr 2013)?

2. Please rate your overall understanding of the topic taught during the week (circle the rate).

    Understand very little   1 2 3 4 5 6 7 8 9 10 Understand everything

3. Please rank the top fifth learning activities that you felt you learnt most from during the week.
    1.
    2.
    3.
    4.
    5.

4. Please rank the top fifth learning activities that you enjoyed most during the week (only include activities enjoyed).
    1.
    2.
    3.
    4.
    5.

5. Why did you enjoy the above listed learning activities?

6. How online activities helped your learning this week?

7. How did your teachers link the face-to-face class and online learning together?

8. What problems did you find during online learning this week?

9. How can the online learning be improved to help your learning?

10. Do you have any other things to say about your blended learning experience this week?

This is the end of the learning diary research. Thank you for your time!

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Appendix F: Focus Group Interviews

Management Accounting Course
Focus Group Interviews

Purpose
- To collect students' views about the blended learning course.
- To discuss issues identified in classroom observations.
- To discuss issues identified in diary reflection (including clarification and missing data filling).
- To discuss students' expectations of blended learning
- To discuss views on integrated blended learning and supplemented blended learning.
- To identify factors affecting students' engagement in blended learning.
- To discuss teachers' roles in blended learning.

Arrangement
Four focus group interviews with five to seven students in a group will be conducted during 20-31 May 2013. Each interview will last for about 1.5 hours. Students taught by the same teachers will be arranged in the same groups.

Issues Identified in Classroom Observations
Teacher A' Class
- Teacher A used different instructional methods to teach in different lessons.
- Teacher A encouraged students to work on online materials before and after classes.
- Teacher A asked questions and named students to answer the questions.
- Teacher A logged into the online system and asked students to do exercises in groups.
- Teacher A met students who did not log into the online system.
- Students were quiet and passive in the lecture period but would answer Teacher A' questions and listen to her instructions.
- Students were active in group activities in class.
- Students asked Teacher A questions during breaks.
- The media of instruction were English and Chinese.

Teacher B's Class
- Teacher B mainly used lectures and exercises to teach the class.
- Teacher B's classes started 15 minutes late and ended 15 minutes earlier in both visits.
- Teacher B never mentioned online learning in his lessons.
- Students were noisy in class but they listened to Teacher B's instructions.
- Students gathered in groups and chatted loudly during breaks.
- The medium of instruction was mainly in Chinese.

Issues Identified in Diary Reflection

- The average self-study times in non online learning and online learning in Teacher A' class in the selected week were 143 and 151 minutes respectively.
- The average self-study times in non online learning and online learning in Teacher A' class in the selected week were 53 and 82 minutes respectively.
- In Teacher A' class, students spent much time in textbook reading (61 mins), exercise (53 mins), online searching (39 mins), online chapter quiz (39 mins) and online chapter review (29 mins).
- In Teacher B's class, students spent much time in online chapter quiz (25 mins) and online searching (20 mins).
- Experiences in learning activities:

[Online Chapter Exercise]
- Helpful
- Not enough exercise
- Not user friendly
- Found technical error

[Online Chapter Quiz]
- Useful and good for revision and examination preparation
- Strengthen the concepts
- Questions were more difficult than questions done in class
- Hope to have different type of quiz
- Good in testing the Accounting logics

[Online Chapter Review]
- Strengthen the understanding
- Helpful review
- Not useful as similar to notes
- Revision on mobile phones
- Review things learnt

[Online Matching Game]
- Difficult to play
- [Online Warm-up Quiz]
- Easy
- Help learning
- Good for revision

[Online Search]
- Search reference and information
- For answering chapter quiz
- Search vocabulary and Chinese translation
- Search for new exercise to do

[Chapter Preview]
- Help to have better understanding

[Lecture]
- Good teacher
- Clear explanation
- Provide exercise
- Not difficult
- Insufficient time and explained too quickly

[Exercise]
- Revision for remembering and understanding the topic
- Found difficult without teacher's guidance

[Textbook Reading]
- Detailed explanation
- No answers for questions
- Understand and clear concept
- Revision

[Reference Reading]
- To see new explanation

[Talk to Teachers]
- About the lecture
- How to study

[Talk to Classmates]
- Discuss Chapter Quiz questions
- Discuss ideas with classmates

[Others]
- Read notes on bus
- Check mid-term test and information in online system
- Revision in self-study room
- Talk phone with friend about MA topics

[Overall Blended Learning Experience]
- Helped to prepare for the next lesson
- Busy, tired and no time for online learning
- Drive to study the topics (online) that were learnt (in class)
- Did online exercise before sleeping
- Interesting
- Enjoy textbook reading most
- Technical difficulties, network problems, user interface problems and bugs found
- Online learning to review difficult topics
- Rates of overall understanding in Teacher A' and Teacher B's classes were 6.08 and 6.5.
- Other overall questions will be discussed and debated in the focus group interviews. Let them re-think and also see if they have further comments with insights from others.

Remarks:
(1) The second round of diary reflection forms collection is in progress and the above issues were identified based on the first round diary reflection.
(2) Some data were missing and needed to be clarified in the focus group meetings.

Introduction
- Welcome participants and introduce myself
- State purpose of the focus group meeting
- Explain use of data (for research purpose and names will not be disclosed)

- Gain consent for tape-recording
- Explain no right or wrong answers, only different points of views
- Encourage participants to respond at least once in all questions at the beginning
- Encourage participants to freely express their views (debate is allowed)

Warm-up Questions
1. How many courses have you studied in this semester?
2. What have you learnt in the MA lessons?
3. Do other courses have online learning? How?
4. Can you describe how you learnt in the MA course?

Discussion
[Learning Activities]
[Show the figures of the class to the participants.]
5. What is your experience in having the following learning activities:
   - Lecture / Exercise / Textbook Reading / Reference Reading / Talk to Teachers / Talk to Classmates
   - Online Chapter Exercise / Online Chapter Quiz / Online Chapter Review / Online Matching Game / Online Search / Online Chapter Preview
   - Others
6. Which of the above activities have you found most helpful to your study? Why? Example?
7. Which of the above activities have you found you enjoyed most in your study? Why? Example?
8. How have the online activities helped your learning? Example?
[Note: Missing data clarification here.]

[Factors affecting Students' Engagement in Online Learning]
9. What are the advantages in online learning? Example?
10. What are the disadvantages in online learning? Example?
11. Why do you learn online?
12. Why don't you want to learn online?
13. How can online learning be improved to help your learning? Example?
14. What else do you expect to have in online learning? Example?
15. Doing online exercise is better than doing exercise in textbook as instant feedback can be obtained. Do you agree with this statement? Example?
16. It seems that you seldom use online discussion. Why?
17. Can you suggest some ways to encourage students using online discussion? Example?

[Difficulties in Online Learning]
18. Do you think it is easy to use the online platform, SOUL? Example?
19. Have you ever experienced difficulties in using online learning? Please describe.
20. Have you asked for support when having technical problems? Why and how?
21. How can the system be improved to help your learning?

22. Some of you mentioned learning via mobile phone. Can you give your views on this?

23. Do you have other difficulties other than technical problems in online learning? Please describe.

[Integrated Blended Learning and Non-Integrated Blended Learning]
[Note: Explain the difference to students]

24. Do you categorize your MA course as integrated blended learning or supplemented blended learning? Why?

25. Which type of blended learning modes do you like more? Why?

26. Do you agree blended learning is better than pure traditional and online learning in learning MA? Why? Example?

[Collaborative Learning]

27. Do you think the lessons were useful to your study in the MA course? Why? Example?

28. Did you like having group work in MA lessons? Why? Example?

29. Did you like having group work in SOUL? Why? Example?

30. Did you communicate with classmates for group works via other social networking media, software or mobile apps? (e.g. Facebook, MSN, Skype, WhatsApp, LINE, WeChat, etc). How?

[Teacher's Role in Online Learning]

31. Did your teacher mention online learning activities in class? Please describe.

32. Did your teacher use online learning activities in class? How? Example?

33. Did your teacher encourage you to use online learning activities to study? How? Example?

34. What do you think teachers should do to encourage students to use online learning activities? Example?

[Other Issues]

35. What languages do you prefer in learning in classes and in online environment?

36. What kinds of other learning modes did you prefer (e.g. distance learning, game learning, mobile learning, etc)?

37. What is your ideal mix of learning modes?

38. Do you have any comments or questions about today's interview?

Closing
- Thank the participants
- Briefing on individual interviews

Appendix G: Individual Interviews

Management Accounting Course
Individual Interviews

Purpose
- To collect students' views of the blended learning course.
- To understand how they learn in the blended learning environment.
- To discuss issues identified in classroom observations, study logs with reflections, online participation observations and focus group interview.
- To explore the reasons, ways, motivation, expectation, preference and difficulties of studying the blended learning course.
- To understand students' engagement in blended learning.
- To explore how students' learning experience can be further enhanced.

Target Selection
- 8 students will be selected from the 24 students who had attended the focus group interviews. 4 of the students will be from Teacher A' class and the other 4 will be from Teacher B's class.
- Their engagement in online learning activities will be classified based on online system data.
- Total online learning time and variety of learning activities participated will be considered in selecting interviewees.
- Based on the dimension of activities and variety of activities participated in, below is the matrix of types and characteristics of online learners in the MA Course. Four types of online learners in the MA course were classified with the 2 dimensions. They are self-directed online learners (S), guided online learners (G), window shopping online learners (W) and passive online learners (P).
- To understand the learning experiences of all these 4 types of students, it was then proposed to interview one of each type of students in both classes. One male student and one female student would be chosen in each of the learner type. If there were more than one student in a type, a student would be selected randomly.
- Both traditional and online learning experiences of the students will be asked.
- Student B2 (S), Student B3 (W), Student B4 (P) and Student B1 (P) of Teacher B's class, and Student A1 (S), Student A4 (G), Student A3 (G) and Student A2 (P) of Teacher A' class were selected.

Introduction
- Welcome participants and introduce myself
- State purpose of the individual interviews
- Explain use of data (for research purpose and names will not be disclosed)
- Gain consent on tape-recording
- Explain no right or wrong answers
- Encourage participants to freely express their views
- Show their learning records to them

Questions

[How they learnt in blended learning]
- Can you describe how you learnt in the MA course?
- What were the pros of blended learning in your MA study? Example?
- What were the cons of blended learning in your MA study? Example?

[Students' engagement in online learning activities]
- What online learning activities were provided to you?
- What online learning activities you actually participated in? Why?
- What learning activities in the MA course helped you most?
- Why didn't you participate in some of the activities?
- How has online learning helped you understand the learning contents?

[Importance of teachers' engagement and managements' influence]
- How did your teacher encourage you to learn before classes, in the classes and after classes?
- How did your teacher link your face-to-face learning with online learning?
- What do you expect in the way of support from teachers in the online learning environment?
- How has the mark allocation to online learning affected your learning?

[Online communication]
- Can you describe by an example how you learnt via the online communication tools (e.g. WhatsApp, Skype, Facebook, Wechat, Line, etc) in the MA course?
- How can online communication enhance your learning experience?

[Difficulties in blended learning]
- What were the problems you faced in the self-learning environment? Please give examples. How can these be improved?
- In the focus group interview, some students mentioned that the medium of instruction was a concern. What do you think? How can this be improved?
- Technical problem was another concern. Did you experience any technical problems? Please describe. How can this be improved?

[Students' Expectation in blended learning]
- Do you prefer learning in integrated blended learning / supplemented blended learning? Why?
- What else do you expect to have in blended learning? Example?
- Can you describe an ideal blended learning scenario? Please include everything like mix of learning mode, content, teacher support, collaboration, etc.

Closing
- Do you have any comments or questions about today's interview?
- Thank the participants

Appendix H: Second Teacher Interviews

Management Accounting Course
2nd Teacher Interviews

Purpose
- To understand why teachers used a blended learning mode in teaching and learning.
- To understand how they designed, taught, delivered and facilitated students' learning activities in the blended learning environment.
- To understand how teachers encourage students' engagement and interactions in blended learning environment.
- To understand the advantages of blended learning from teacher's experience.
- To understand the difficulties of blended learning from teacher's experience.
- To discuss issues identified in classroom observations, diary reflection, online environment, focus group interviews and individual interviews of students.
- To discuss strategies on enhancement of blended learning effectiveness.

Target Selection
- The same 2 teachers (Teacher A and Teacher B) who taught the MA classes and participated in the 1st Teacher Interviews.

Introduction
- Welcome the teacher.
- State purpose of the 2nd teacher interviews.
- Explain use of data (for research purpose and names will not be disclosed).
- Gain consent on tape-recording.
- Explain no right or wrong answers.
- Encourage the teacher to freely express his/her views.
- Show his/her own 1st interview records.
- Show the consolidated students' views.

Questions

[How they designed, taught, expect and facilitated students' learning using blended learning mode]

1. Can you describe how you taught in the MA course?
2. What were the considerations in designing the use of face-to-face and online learning combination?
3. What was your expectation of your students' face-to-face and online learning?
4. How long did you expect your students to study every week and before the examination?
5. How did you facilitate the students' learning in both face-to-face and online learning?

[Reasons]

6. What were the pros of blended learning in your MA teaching? Example?
7. What were the cons of blended learning in your MA teaching? Example?
8. Why did you use blended learning mode in your teaching?
9. Why did you design some learning activities as compulsory and others as supplementary?

[Teachers' encouragement on students' engagement and interactions]

10. How did you encourage the students to engage and interact in blended learning (e.g. learn before classes, in the classes and after classes)? Example?
11. How did you link face-to-face and online teaching? Example?
12. What online learning activities did you ask the students to participate in?
13. How did your students learn via these learning activities?
14. How did blended learning help your students to have deep learning?
15. How did you support students' face-to-face and online learning?
16. How did you make use of the mark allocation in the course? What was the effectiveness?
17. Have you ever monitored how your online resources were used by students? How it can help your teaching or why you did not do so?
18. Can you compare and contrast the classes with and without online learning?

[Advantages and Difficulties of blended learning]

19. What were the advantages in blended learning? Please give examples.
20. What were the problems you faced in blended learning? Please give examples. How can these be improved?
21. Did you experience any technical problems? Please describe. How can this be improved?
22. Did you experience any problems in course management and administration? How can this be improved?

[Issues from previous research (Show the students' consolidated views)]

23. Students are concerned about marks and examination results. What are your comments?

24. Students found both traditional and online learning activities helpful. What are your comments?
25. Students said they were actively involved in online communication and interactions. What are your comments?
26. Students found difficulties in personal, technical, teaching support and language areas. How do you think the School and teachers can help the students?
27. Most students expected to use mobile learning tools. What are your comments?
28. Some students preferred integrated blended learning while others preferred supplemented learning. What are your comments?

[Expectation and enhancement in blended learning]
29. What else do you expect to use in blended learning? Example?
30. Can you describe an ideal blended learning scenario to enhance students' learning effectiveness? Please include everything like mix of learning mode, design, content, support, collaboration and interaction, etc.

Closing
- Do you have any more comments or questions about today's interview?
- Thank the teacher

Appendix I: Course Leader Interview

Management Accounting Course
Course Leader Interview

<u>Purpose</u>
- To understand why the School decided to use the blended learning mode in the MA course.
- To understand how the School encourages teachers' and students' engagement and interactions in a blended learning environment.
- To understand the pros and cons of blended learning from management's experience
- To discuss issues identified in classroom observations, diary reflection, online environment, focus group interviews, individual interviews of students and individual interviews of teachers.
- To discuss strategies for enhancing students' blended learning experiences.

<u>Target Selection</u>
- The course leader of the MA course.

<u>Introduction</u>
- Welcome the course leader.
- State purpose of the course leader interview.
- Explain use of data (for research purpose and names will not be disclosed).
- Gain consent on tape-recording.
- Explain no right or wrong answers.
- Encourage the course leader to express his views freely.

Questions

[Why the School used a blended learning mode in the MA course]
1. Why did you decide to use a blended learning mode in the MA course?
2. What were the pros of blended learning in the MA course? Example?
3. What were the cons of blended learning in the MA course? Example?
4. What were your expectations of teachers and students in the blended learning MA course?

[Students' engagement and interactions]
5. How did you encourage the students to engage and interact in blended learning (e.g. learn before classes, in the classes and after classes)? Example?
6. How did your students learn via the learning activities?
7. How did blended learning help your students engage in deep learning?
8. How did you make use of the mark allocation in the course? What was the effectiveness?
9. Have you ever monitored how your online resources were used by your students? How can this help your management or why did you not do so?
10. Can you compare and contrast the courses with and without online learning?

[Issues from previous research]
(Show the teachers' and students' consolidated views)
11. Do you have any reflections on students' views?
12. Students said they were actively involved in non-prescribed online communication and interactions. What is your view on this?
13. Students found difficulties with blended learning. How do you think the School can help them?
14. Some students preferred integrated blended learning while others preferred supplemented learning. What are your comments?
15. Do you have any reflections about teachers' views?
16. Teachers said they found insufficient help and too heavy workload in the blended learning course. What are your comments?

[Expectation and enhancement in blended learning]
17. What else do you expect in blended learning? Example?
18. Can you describe an ideal blended learning scenario for enhancing students' learning effectiveness? Please include everything like mix of learning mode, design, content, support, collaboration and interaction, etc.

Closing
- Do you have any more comments or questions about today's interview?
- Thank the course leader.

Appendix J: Refinement of Research Questions and Sub-Questions

RQs and SRQs in the Preliminary Stage

Proposed Questions	Proposed Sub-Questions
1. What is the learning experience of the students in the blended learning environment?	1. What was the relationship between online and traditional aspects of the course? 2. What were the expected learning outcomes? 3. What kinds of learning were actually occurring?
2. How do online learning contents and activities affect student engagement in the blended learning environment?	4. How was blended learning supported? 5. What were the actual needs of students? 6. How did students engage in blended learning? 7. How did learning activities in blended learning enhance students' learning experience?
3. What are the factors that affect students' learning experience in blended learning?	8. How does teacher engagement affect student engagement in the blended learning environment? 9. What were the barriers to teaching and learning? 10. How does one overcome the barriers to enhance learning effectiveness?

First Refinement of RQs and SRQs

Proposed Questions	Proposed Sub-Questions
1. What is the learning experience of the students in the blended learning environment?	1. What are the expected learning outcomes? 2. What kinds of learning are actually occurring?
2. How do online learning contents and activities affect student engagement in the blended learning environment?	3. How do learning activities in blended learning enhance students' learning experience? 4. How are students engaged in blended learning?
3. What are the factors that affect students' learning experience in blended learning?	5. How does teacher engagement affect student engagement in the blended learning environment? 6. What were the barriers to teaching and learning? 7. How to overcome the barriers to enhance learning effectiveness? 8. What were the actual needs of students?
4. How should blended learning be designed and implemented to enhance teaching and learning for the sub-degree Accounting students in Hong Kong?	9. Should the blended learning be integrated or supplemented (non-integrated)? 10. What should be included in the mix of blended learning? 11. What kinds of additional support should be designed and implemented for these students?

Second Refinement of RQs and SRQs

Research Questions and Sub-Questions	Questions	Comments
RQ.1	What is the learning experience of the students in the blended learning environment?	This question is similar to the research title. The level of question seems too high. It can be asked in a way that how do students learn in the blended learning environment.
RQ.2	How do online learning contents and activities affect student engagement in the blended learning environment?	This question relates to learning contents, activities and engagement. The level of question seems too low. It should be moved to sub-question level. Instead, a question about why does they engage would be asked.
RQ.3	What are the factors that affect students' learning experience in blended learning?	Instead of knowing 'what' affects students' learning, it would be more in depth to find out 'how' their learning was affected.
RQ.4	How should blended learning be designed and implemented to enhance teaching and learning for the sub-degree Accounting students in Hong Kong?	This question is questionable and should not be considered as a research question. It is suggested that it be removed.
SRQ.1	What were the expected learning outcomes?	Amend the question to relate learning outcomes to students' learning. Also relate assessments to students' learning. It can merge in a question relates to the reason of engagement.
SRQ.2	How were students engaged in blended learning?	Appropriate question and keep it.
SRQ.3	How did learning activities in blended learning enhance students' learning experience?	Keep it. Also ask how they learnt with learning activities.
SRQ.4	What kinds of learning were actually occurring?	Keep it. Also ask a question about collaborative learning.
SRQ.5	How does teacher engagement affect student engagement in the blended learning environment?	Appropriate question and keep it.
SRQ.6	What were the barriers to teaching and learning?	Appropriate question and keep it.
SRQ.7	How to overcome the barriers to enhance learning effectiveness?	Merge to question 6.
SRQ.8	What were the actual needs of students?	Appropriate question. Keep it but under a higher level question about factors of influencing blended learning.
SRQ.9	Should the blended learning be integrated or supplemented (non-integrated)?	Not appropriate and remove it.
SRQ.10	What should be included in the mix of blended learning?	Not appropriate and remove it.
SRQ.11	What kinds of additional support should be designed and implemented for these students?	Not appropriate and remove it.

Appendix K: Research Ethics Documents

School of Education – Research Ethics Approval Form

The University of Nottingham

Name:	Lam Yuet Ching Jeanne
Main Supervisor:	Dr Gordon Joyes
Course of Study:	Ed.D (Lifelong Education).
Title of Research Project:	Student Experience of Blended Learning: a Case of an Accounting Blended Learning Course in Hong Kong.
Is this a resubmission?	No.

Date statement of research ethics received by PGR Office: 13.01.12

Research Ethics Coordinator Comments:

Ms Lam has provided a full and clear statement of her research for the information of participants, together with an appropriate participants' consent form. She has noted that the research is to be conducted in Hong Kong with a responsible adult population. Ms Lam has completed all necessary documentation and I am satisfied that she has considered and accounted for any ethical issues. I recommend ethical approval of the research.

I consider this research above minimum risk [ ]

Outcome:

Approved [√]   Revise and Resubmit [ ]

Signed: *W. J. Morgan*   Name: Professor W. J. Morgan   Date: 17th January 2012
                                (Chair of Research Ethics Committee)

16 January 2012

Ms. Jeanne Lam
Associate Head
Centre for Cyber-Learning.

Dear Jeanne,

Thank you for your letter of 30 December 2011 seeking approval of the research project involving Students enrolled in "Management Accounting" and "Business Information System" of the Higher Diploma in Business (Accounting) Programme. From the School's perspective, we can approve this request. Please note that we will generally handle this through asking students on your behalf to participate in the focus group interview, questionnaire survey and/or individual interviews as well as providing their reflection, journal etc. That is, so that we can be assured that we have not directly released to you their personal data. On this understanding, I hope therefore that you will be able proceed and I wish you well with the research project.

As mentioned in my follow up email, you may also wish to consider whether you also need to alert HPCC via the College Registrar in case you have a need to access their records also.

With best wishes,

Yours sincerely,

John Cribbin
School Secretary & Registrar

Prof. T. M. Wong
College Principal
HKU SPACE Po Leung Kuk Community College (HPCC)
66 Leighton Road
Causeway Bay
Hong Kong

30 December 2011

Re: Seeking Approval for Conducting Research on Students Enrolled in
"Management Accounting" and "Business Information System" of the
Higher Diploma in Business (Accounting) Programme

Dear Prof. Wong,

I am Jeanne Lam, candidate of the Doctor of Education (Lifelong Education) programme, Faculty of Education at the University of Nottingham, United Kingdom. I will conduct a research project entitled "Factors Affecting Students' Learning in the Blended Learning Environment: a Case of an Accounting Blended Learning Course in Hong Kong". My supervisor is Dr. Gordon Joyes and co-supervisor is Dr. Charles Crook in the University of Nottingham. I am writing to seek your consent for allowing me conduct research with students on their blended learning experiences.
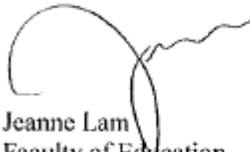
The main objective of my research is to explore the factors that affect the learning of students in the blended learning environment. With understanding of these factors, lifelong education providers can adopt blended learning in the most appropriate way which teaching and learning effectiveness can be enhanced and the benefits of blended learning can be fully practiced. The research will be carried out in the intakes of Management Accounting and/or Business Information System in 2012-2013. During the research, questionnaire survey, focus group interview and/or individual interview will be conducted. Besides, students will be asked to provide blended learning reflection journal in audio format. Prior to the research, a research instrument test of the audio journal will be conducted to the students in the Spring intake of Management Accounting in 2012.

All data collected will be kept in strict confidentiality for approximately two years and will only be stored in the investigator's personal electronic devices with password protection. The digital recording contents will be erased after the study. There are no risks involved and all information obtained will be used for research purposes only. All participants will not be identified by name in any report of the completed study. Participation is entirely voluntary and students can choose to stop at any time without negative consequences.

Your kind approval for letting me conduct the research with the students from the abovementioned courses is appreciated. Should you require more details of my research study, please contact me at jeannelam@gmail.com, my supervisor Dr. Gordon Joyes at gordon.joyes@nottingham.ac.uk, or my co-supervisor Dr. Charles Crook at charles.crook@nottingham.ac.uk.

Thank you very much.

Yours faithfully,

Jeanne Lam
Faculty of Education
The University of Nottingham

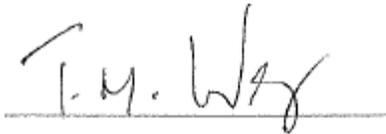### Reply Slip

I * approve / ~~disapprove~~ your request for data collection from HPCC Higher Diploma in Business (Accounting) Management students:
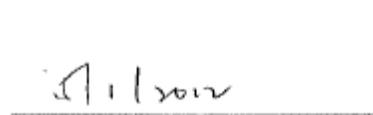
- Management Accounting students in 2011-2012 Spring intake.
- Management Accounting students and Business Information System students in 2012-2013 intake.

(* Please delete as if inappropriate.)

Signature   Date

Mr. Albert Hung
Acting Head
College of Business and Finance
34/F United Centre
95 Queensway
Admiralty
Hong Kong

30 December 2011

Re: Seeking Approval for Conducting Research on Students Enrolled in
"Management Accounting" and "Business Information System" of the
Higher Diploma in Business (Accounting) Programme

Dear Mr. Hung,

I am Jeanne Lam, candidate of the Doctor of Education (Lifelong Education) programme, Faculty of Education at the University of Nottingham, United Kingdom. I will conduct a research project entitled "Factors Affecting Students' Learning in the Blended Learning Environment: a Case of an Accounting Blended Learning Course in Hong Kong". My supervisor is Dr. Gordon Joyes and co-supervisor is Dr. Charles Crook in the University of Nottingham. I am writing to seek your consent for allowing me conduct research with students on their blended learning experiences.

The main objective of my research is to explore the factors that affect the learning of students in the blended learning environment. With understanding of these factors, lifelong education providers can adopt blended learning in the most appropriate way which teaching and learning effectiveness can be enhanced and the benefits of blended learning can be fully practiced. The research will be carried out in the intakes of Management Accounting and/or Business Information System in 2012-2013. During the research, questionnaire survey, focus group interview and/or individual interview will be conducted. Besides, students will be asked to provide blended learning reflection journal in audio format. Prior to the research, a research instrument test of the audio journal will be conducted to the students in the Spring intake of Management Accounting in 2012.

All data collected will be kept in strict confidentiality for approximately two years and will only be stored in the investigator's personal electronic devices with password protection. The digital recording contents will be erased after the study. There are no risks involved and all information obtained will be used for research purposes only. All participants will

Your kind approval for letting me conduct the research with the students from the abovementioned courses is appreciated. Should you require more details of my research study, please contact me at jeannelam@gmail.com, my supervisor Dr. Gordon Joyes at gordon.joyes@nottingham.ac.uk, or my co-supervisor Dr. Charles Crook at charles.crook@nottingham.ac.uk.

Thank you very much.

Yours faithfully,

Jeanne Lam
Faculty of Education
The University of Nottingham

Reply Slip

I * approve /~~disapprove~~ your request for data collection from HPCC Higher Diploma in Business (Accounting) Management students:

- Management Accounting students in 2011-2012 Spring intake.
- Management Accounting students and Business Information System students in 2012-2013 intake.

(* Please delete as if inappropriate.)

Signature   Date

                                             1 9 JAN 2012

英國諾丁漢大學教育學院

親愛的同學：

本人林月菁是英國諾定咸大學教育學院教育博士候選人，我的導師是教育學院 Dr. Gordon Joyes 和 Dr. Charles Crook。我將進行一項題為「混合模式學習經驗: 香港會計課程的案例」的研究，現誠邀您積極參與。

我的研究的主要目的是探討學生在混合式學習環境的學習經驗，讓教學人員可以採用最恰當的混合式教學以增強教學的成效。您被邀請參與這研究項目，是因為您在本學期內修讀「管理會計」(Management Accounting) 的網上經驗，是混合模式學習的一部分，對整個課程的內容和質素的提升十分重要。您的寶貴意見將為教學人員提供有價值的參考，以改善課程的設計和內容，以及提升對會計課程的有效學習。您的參與純屬自願性質，您可隨時終止參與是項行動，有關決定將不會引致任何不良後果。

這項研究將收集您於「管理會計」(Management Accounting) 課程混合式學習的意見和經驗。事次研究將於您們之中隨機選擇 3-5 人參加音頻記錄，參加者需要在課程期間，每週一次作約 3 分鐘的音頻記錄，以記錄您們於混合式學習的意見和經驗。如果您同意參加本研究的一部分，您會得到港幣 200 元百佳禮券作為感謝禮物。

這項研究已經於 2012 年 1 月 17 日在諾丁漢大學研究操守委員會審核及批准。參與本研究沒有任何風險，所收集的資料只作為期兩年的研究用途，個人資料將絕對保密。所有參與者的姓名將不會被披露在研究報告內。所有收集的資料將以保密形式儲存在研究員的個人電子工具。當研究總結寫成後，數碼錄音內容將被銷毀。

請填寫以下回條作回覆。如果您有關於本研究有任何疑問，請隨時聯絡本人林月菁 (9776 1001) 或我的導師 Dr. Gordon Joyes (gordon.joyes@nottingham.ac.uk) 或 Dr. Charles Crook (charles.crook@nottingham.ac.uk)。如果你想知道更多關於您作為研究參與者的權利，請聯繫英國諾丁漢大學 (educationresesearchethics@nottingham.ac.uk) 的倫理委員會。謝謝。

此致

林月菁
英國諾丁漢大學教育學院
2012 年 1 月 31 日

<div align="center">回條</div>

本人　會 / 不會** 參與上述的研究。(*＊刪去不適用者)

學生姓名:_____

電子郵件：_____　　聯絡電話：_____

簽名：_____　　　　日期：_____

您或可以電郵形式 (Jeanne Lam: jeannelam@gmail.com) 回覆，寫明您的姓名及聯絡方法，電郵主題請寫：同意參與研究項目。

THE UNIVERSITY OF NOTTINGHAM
Faculty of Education

January 2012
Dear Student,

My name is Jeanne Lam and I am a candidate of the Doctor of Education (Lifelong Education) programme of Faculty of Education at the University of Nottingham. My supervisors are Dr. Gordon Joyes and Dr. Charles Crook. I will conduct a research project entitled 'Student Experience of Blended Learning: a Case of an Accounting Blended Learning Course in Hong Kong' and would like to invite you to participate.

The main objective of my research is to explore learning experience of students in the blended learning environment. With understanding of this, lifelong education providers can adopt blended learning in the most appropriate way which teaching and learning effectiveness can be enhanced and the benefits of blended learning can be fully practiced. You are invited to participate in the research study as you will have experienced this blended learning mode for the Management Accounting course during the semester, and your online learning experiences are important to the further enhancement of course content and its quality. I am interested in hearing your views on your perceptions and experiences on this blended mode of learning. Your input is valuable to assist programme leaders in improving the blended learning course design and contents to enhance students' learning experience of the subject discipline. There is no obligation to take part and participation in all parts of the research study is entirely voluntary. This means that you can choose to stop at any time without negative consequences.

The study seeks your views and experiences of blended learning in the Management Accounting course During your study, 3-5 of you will be chosen randomly selected to participate in audio journal recording – each recording last for 3 minutes and is required once a week during your course period. The purpose of the audio journal is to obtain your reflection about blended learning. If you agree to participate in this part of research, you will be given a HK$200 Park'N Shop coupon as a thank you gift for taking your time.

The study have been reviewed and approved by the University of Nottingham Ethics Committee in 17 January 2012. There are no risks involved. All information obtained will be used for research purposes only. All participants will not be identified by name in any report of the completed study. All data collected will be kept in strict confidentiality for approximately two years and will only be stored in the investigator's personal password protected electronic devices. The digital recording contents will be erased after the research has been completed.

Please complete the reply slip below to indicate whether you do decide to participate in this research. If you have any questions about the research, please feel free to contact Jeanne Lam (9776 1001), or my supervisors Dr. Gordon Joyes (gordon.joyes@nottingham.ac.uk) or Dr. Charles Crook (charles.crook@nottingham.ac.uk). If you want to know more about your rights as a research participant, please contact the Ethics Committee of the University of Nottingham (educationresesearchethics@nottingham.ac.uk). Thank you.

Yours sincerely,

_____
Jeanne Yuet-ching LAM
Faculty of Education
The University of Nottingham

_____

Reply Slip

I ** will / will not participate in the research. (** Please delete as if inappropriate.)

Student name: _____

Contact email: _____   Contact number: _____

Signature: _____   Date: _____

Alternatively, please e-mail to Jeanne Lam (jeannelam@gmail.com) specifying your name and contact detail, e-mail subject line: Agreement to participate in your research study. Thank you!

Appendix L: Publications

Edited Books

Kwan, R., Fong, J., Kwok, L. F. and Lam, J. (2011) *Hybrid learning.* NY: Springer.

Lam, J., Li. K. C., Cheung, K. S. S. and Wang, F. L. (2013) *Knowledge sharing through technology.* Berlin, Heidelberg: Springer.

Lam, J., Ng, S., Cheung, S., Wong, T. L., Li, K. C. and Wong, F. L. (2015) Technology in education: Technology-mediated proactive learning. Berlin, Heidelberg: Springer (To be published).

Li, K. C., Wong, T. L., Cheung, S. K. S., Lam, J. and Ng, K. K. (2014) *Transforming educational practices with technology*. Berlin, Heidelberg: Springer.

Ma, W. W. K., Au, O., Zhang, J., Lam, J. and Wang, F. L. (2014) *Hybrid learning: Concept and application.* Hong Kong: City University of Hong Kong.

Ma, W. W. K., Kwan, R., Lee, G, Lam, J., Wang, F. and Au, O. (2013) *Hybrid learning: Theory, application & practice.* Hong Kong: City University of Hong Kong.

Journal Articles

Cheung, K. S, Lam, J. and Yau, J. (2009) A review of functional features of e-learning platform in the continuing education context. *International Journal of Continuing Education and Lifelong Learning 2(1):* pp.103-116.

Lam, J. (2015) Autonomy presence: Extending the community of inquiry. *International Journal of Continuing Education and Lifelong Learning* 8(1): pp. 39-61. [Publication related to this EdD research study]

Lam, J. (2015) Examining student experience of blended learning from the perspective of Community of Inquiry framework. *Asian Association of Open Universities* 10(2): pp. 81-89. [Publication related to this EdD research study]

Lam, J. (2015) The student experience of a blended learning course in Hong Kong. *International Journal of Technical Research and Applications Special Issue* 20: pp.4-13. [Publication related to this EdD research study]

Lam, J. (2016) Non-Prescribed collaborative learning using social media tools in a blended learning course. *International Journal of Innovation and Learning* (to be published). [Publication related to this EdD research study]

Lam, J., Hung, A., Chan, F. T., Yan, K. and Woo, G. (2011) Project management model for blended learning course development. *International Journal of Innovation and Learning 4(1):* pp.101-112.

Lam, J., Lau, N., Shim, C. and Cheung, K. S. (2013) Design and development process for blended learning courses. *International Journal of Innovation and Learning 13(3):* pp.322-338.

Lam, J., Chan, R. and Yan, K. (2015) A report on the online learning experience of students in Accounting course. *International Journal of Services and Standards* (to be published).

Lam, J. and Chan, R. (2012) E-learning experiences of Hong Kong students. *World Academy of Science: Engineering and Technology 7(1)*: pp.414-418.

Book Chapters

Au, M., Lam, J. and Chan, R. (2014) Social media education - barriers and critical issues. In: Li, K. C, Wong, T. L. Cheung, S. K. S., Lam, J. and Ng. K. K. (Eds.) *Transforming educational practices with technology, pp.199-205.* Berlin, Heidelberg: Springer.

Fong, A., Chan, F. T. and Lam, J. (2013) Initiate a knowledge management practice for sustainable continuing education. In: Lam, J., Li. K. C., Cheung, K. S. S. and Wang, F. L. (Eds.), *Knowledge sharing through technology, pp.227-234*. Berlin, Heidelberg: Springer.

Hung, A., Yuen, K., Lam, J., Lau, N., Kwok, I., Wong, T., Leung, H., Wong, K., Chiu, K. and Pang, S. (2011) The experiences of academics in designing and implementing the blended learning project for Accounting students at HKU SPACE Community College and HKU SPACE Po Leung Kuk Community College. *Blended learning, Maximization of teaching and learning effectiveness, pp.98-112.* Hong Kong: City University of Hong Kong.

Lam, J. (2014) The context of blended learning: The TIPS blended learning model. In: Cheung, K. S., Fong, J., Zhang, J., Kwan, R. and Kwok, L. F. (Eds.) *Hybrid learning: Theory and practice, pp.80-92*. Switzerland: Springer International Publishing. [Publication related to this EdD research study]

Lam, J. (2015) A thematic analysis of the blended learning experiences of undergraduate students in Hong Kong. In: Li, K. C., Wong, T. L., Cheung, S. K. S., Lam, J. and Ng, K. K. (Eds.) *Technology in education: Transforming educational practices with technology, pp.215-222*. Berlin, Heidelberg: Springer. [Publication related to this EdD research study]

Lam, J. (2015) Collaborative learning using social media tools in a blended learning course. In: Cheung, S. K. S., Kwok, L. F., Yang, H., Fong, J. and Kwan, R. (Eds.) *Hybrid*

Learning: Innovation in Educational Practices, pp.187-198. Heidelberg: Springer. [Publication related to this EdD research study]

Lam, J., Chan, R., Hung, P. and Wong, R. (2013) An experience sharing of mobile learning development in HKU SPACE. In: Ma, W. W. K., Kwan, R., Lee, G., Lam, J., Wang, F. and Au, O. (Eds.) *Hybrid learning: Theory, application and practice, pp.171-174*. Hong Kong, Canada: City University of Hong.

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Lam, J., Cheung, K. S., Lau, N. and Yau, J. (2010) The use of virtual classroom in library and information management courses. In: Cheung, P. T., Cheung, S. K. S., Lee, V. S. K. and Huang, R. (Eds.), *Hybrid learning, pp.352-361*. Berlin Heidelberg: Springer.

Lam, J. and Duan, C. G. (2012) A review of mobile learning environment in higher education sector of Hong Kong: technological and social perspectives. In: Cheung, S. K. S. Cheung, Fong, J., Kwok, L. F., Li, K. and Kwan, R. (Eds.) *Hybrid learning, pp.165-173*. Berlin, Heidelberg: Springer.

Lam, J., Hung, A., Chan, F. T., Zhang, W. Y., Yan, K. and Woo, G. (2011) Blended learning course development model. In: Lee, V., Wang, F. L., Cheung, S. and Hung, A. (Eds.) *Blended learning: Maximization of teaching and learning effectiveness, pp.52-64*. Hong Kong: City University of Hong Kong.

Lam, J., Lau, N., Yau, J and Cheung, K. S. (2009) A survey on the readiness in adopting e-learning among teachers and students. In Fong, J., Kwan, R. and Wang, F. L. (Eds.), *Hybrid learning: The new frontier*, *pp.143-158*. Hong Kong: City University of Hong Kong.

Lam, J. and Tsoi, P. (2011) Policies and strategies of technology enhanced learning in lifelong education in China, Hong Kong, Macau, Taiwan and Singapore. In: Kwan, R., Fong, J., Kwok, L. F. and Lam, J. (Eds.) *Hybrid learning, pp.167-175*. NY: Springer.

Lam. J., Yau, J. and Cheung, K. S. (2010) A review of mobile learning in the mobile age. In: Cheung, P. T., Lee, S. K. S., Lee, V. S. K. and Huang, R. (Eds.) *Hybrid learning, pp.306-315*. Berlin, Heidelberg: Springer.

Lau, N., Lam, J., Hung, A., Yuen, K., Ng, J., Choi, B. and Chan, T. (2011) Structured development process for blended learning courses. In: Lee, V., Wang, F. L., Cheung, S. and Hung, A. (Eds.) *Blended learning: Maximization of teaching and learning effectiveness, pp.77-58*. Hong Kong: City University of Hong Kong.

Shim, C., Lam, J., Lau, N., Hung, A., Yuen, K. and Tsang, D. (2011) The role of instructional design in blended Accounting courses. In: Lee, V., Wang, F. L., Cheung, S. and Hung, A. (Eds.) *Blended learning: Maximization of teaching and learning effectiveness, pp.65-74*. Hong Kong: City University of Hong Kong.

Shiu, H., Fong, J. and Lam, J. (2010) Facebook – education with social networking websites for teaching and learning. In: Cheung, P. T., Cheung, S. K. S., Lee, V. S. K. and Huang, R. (Eds.), *Hybrid learning, pp.59-70*. Berlin, Heidelberg: Springer.

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Yuen, K., Hung, A., Lam, J., Lau, N. and Duan, C. G. (2011) The learning experiences in the blended learning project at HKU SPACE Community College and HKU SPACE Po Leung Kuk Community College. In: Lee, V., Wang, F. L., Cheung, S. and Hung, A. (Eds.) *Blended learning: Maximization of teaching and learning effectiveness, pp.113-136.* Hong Kong: City University of Hong Kong.

Zhang, W. Y., Lam, J. and Duan, C. G. (2015) E-learning and m-learning: The case of HKU SPACE. In: Cribbin, J. (Ed.) *Lifelong learning in action: Hong Kong practitioners' perspectives.* Hong Kong: HKU SPACE. (to be published)

Conference Papers

Cheung, K. S. and Lam, J. (2009) A framework for developing e-learning solutions. In: *Proceedings of the International Conference on Semantics, Knowledge and Grid*, pp.294-297, October 2009, Zhuhai, China. Zhuhai, China: IEEE Press.

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Lam, J. (2015) Student experience of blended learning: From the perspective of community of inquiry framework. *Proceedings of 10th eLearning Forum Asia*, 17-19 June 2015, SIM University, Singapore. Singapore: SIM University. [Online]. Available at: http://elfa2015.unisim.edu.sg/parallel.html. [Access 15 July 2015]. [Presentation related to this EdD research study]

Lam, J., Lau, N., Yau, J. and Cheung, K. S. (2009) A review on the use of virtual classroom in support of blended learning. In: *Proceedings of the 17th International Conference on Computers in Education,* 30 November - 4 December 2009, Hong Kong. Hong Kong: Hong Kong Institute of Education.

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Appendix M: Node Table

Node Table Generated by NVivo

Name	Sources	References	Created On	Created By
MA Blended Learning	12	3836	27/4/2014 14:53	LAM
Traditional learning activity	12	465	26/4/2014 18:03	LAM
Class Exercise	10	27	26/4/2014 18:26	LAM
Home exercise	11	78	26/4/2014 18:26	LAM
Lecture	12	105	26/4/2014 18:26	LAM
Read material	12	116	26/4/2014 18:27	LAM
Online learning activity	12	605	26/4/2014 18:03	LAM
Chapter exercise	7	18	26/4/2014 18:11	LAM
Chapter preview	5	8	26/4/2014 18:12	LAM
Chapter quiz	9	39	26/4/2014 18:11	LAM
Chapter review	10	42	27/4/2014 14:28	LAM
Level quiz	11	101	26/4/2014 18:12	LAM
Matching game	9	41	26/4/2014 18:12	LAM
Online exercise	12	143	26/4/2014 18:11	LAM
Online material	11	29	3/5/2014 17:20	LAM
Online searching	10	42	26/4/2014 18:14	LAM
Thinking forum	9	41	26/4/2014 18:13	LAM
Warm-up quiz	8	37	26/4/2014 18:13	LAM
Learning process	12	388	27/4/2014 14:23	LAM
Additional knowledge	5	21	3/5/2014 17:54	LAM
Calculation	12	53	27/4/2014 14:55	LAM
Contextual	10	31	27/4/2014 16:41	LAM
Learning time	9	37	27/4/2014 16:46	LAM
Linking learning modes	11	110	18/5/2014 15:14	LAM
Pre-class learning	7	22	3/5/2014 16:06	LAM
Revision	12	41	26/4/2014 18:22	LAM
Theory	10	51	27/4/2014 14:55	LAM
Understanding verification	7	22	3/5/2014 19:12	LAM

Engagement	12	346	26/4/2014 18:04	LAM
Applicable	6	15	3/5/2014 18:17	LAM
Deep	6	19	3/5/2014 17:09	LAM
Encourage	7	21	3/5/2014 19:02	LAM
Flexible	8	26	26/4/2014 18:23	LAM
Helpful	12	83	26/4/2014 18:22	LAM
Like	12	45	26/4/2014 18:23	LAM
Most helpful	12	43	27/4/2014 14:48	LAM
Reinforce	8	24	26/4/2014 18:22	LAM
Understand	12	70	3/5/2014 16:22	LAM
Useful	0	0	18/5/2014 15:19	LAM
Learning outcome	5	69	4/5/2014 15:01	LAM
Knowledge	5	19	18/5/2014 15:21	LAM
Result	4	14	18/5/2014 15:21	LAM
Assessment	12	191	26/4/2014 18:25	LAM
Examination	12	100	26/4/2014 18:38	LAM
Online participation	12	80	26/4/2014 18:39	LAM
Collaborative learning	12	393	26/4/2014 18:15	LAM
Online student-student	12	114	26/4/2014 18:32	LAM
Online teacher-student	7	39	26/4/2014 18:31	LAM
Online tools	12	117	26/4/2014 18:33	LAM
Traditional student-student	12	63	18/5/2014 15:30	LAM
Traditional teacher-student	12	57	18/5/2014 15:30	LAM
Teacher's role	12	145	18/5/2014 15:36	LAM
Link learning modes	11	48	18/5/2014 15:33	LAM
Teacher engagement	12	93	26/4/2014 18:21	LAM
Teaching design	2	4	18/5/2014 15:33	LAM
Personal barrier	12	282	18/5/2014 15:01	LAM
Attitude	12	67	26/4/2014 18:15	LAM
Language	12	79	4/5/2014 14:41	LAM
Not understand	12	116	27/4/2014 14:20	LAM
Pressure	6	20	6/5/2014 23:09	LAM

Course problem	12	267	26/4/2014 18:04	LAM
Content problem	11	34	27/4/2014 14:37	LAM
Insufficient feedback	11	32	27/4/2014 14:36	LAM
Insufficient instruction	5	14	10/5/2014 20:41	LAM
Insufficient teaching support	8	27	27/4/2014 14:15	LAM
Insufficient time	11	48	3/5/2014 16:46	LAM
Not helpful	7	26	3/5/2014 18:28	LAM
Not in syllabus	4	8	3/5/2014 17:17	LAM
Technical problem	12	78	26/4/2014 18:16	LAM
Need	12	284	26/4/2014 18:04	LAM
Allow printing	3	16	27/4/2014 14:38	LAM
Better course design	7	22	4/5/2014 21:31	LAM
Better system	5	15	4/5/2014 18:07	LAM
More guide	6	16	4/5/2014 16:12	LAM
More learning hour	4	15	26/4/2014 18:19	LAM
More link of learning modes	6	27	26/4/2014 18:18	LAM
More online feedback	6	20	26/4/2014 18:41	LAM
More practical	3	21	26/4/2014 18:18	LAM
More question	8	24	26/4/2014 18:42	LAM
More teaching support	12	71	26/4/2014 18:18	LAM
Online class	10	37	26/4/2014 18:21	LAM
Preference	12	401	4/5/2014 21:41	LAM
Bi-lingual	12	112	26/4/2014 18:17	LAM
Ideal blended learning	12	57	26/4/2014 18:18	LAM
Integrated blended learning	11	97	26/4/2014 18:17	LAM
Keep traditional way	9	32	18/5/2014 15:43	LAM
Mobile learning	12	103	26/4/2014 18:17	LAM

Appendix N: Thematic Maps

Initial Thematic Map (22 Themes) Page 1/2
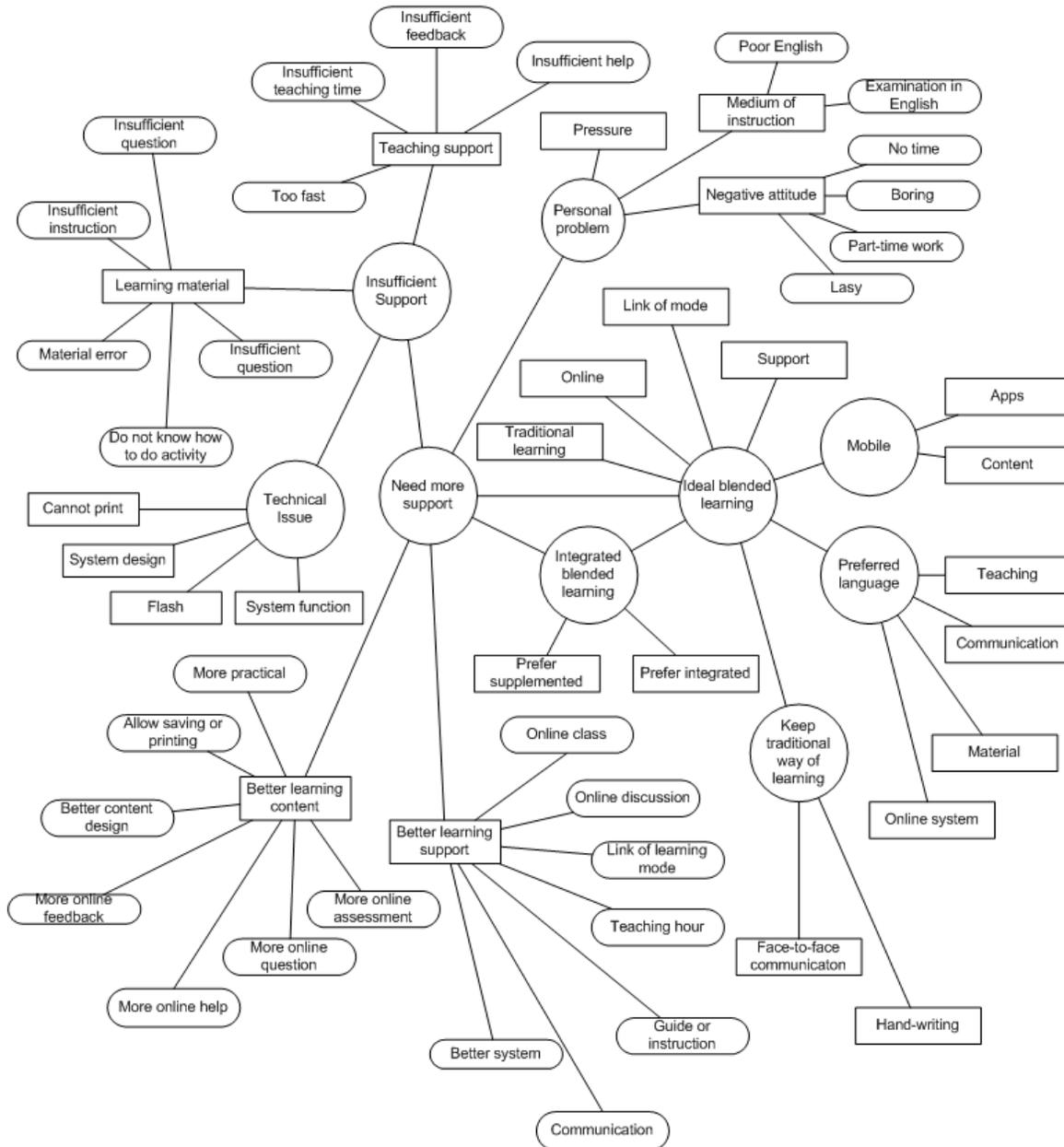
Developed Thematic Map (15 Themes) Page 1/2

Face-to-face class — Exercise, Lecture, Notes

Communication — Talk to student, Talk to teacher, Group discussion, Whatsapp, Online tools (Facebook, Email, Skype), Interaction (Ask teacher qestion, Talk among peers)

Self-learning — Material (Reference, Notes), Textbook, Homework, Assignment, Exercise

Teaching — Course design, Teacher, Linking learning modes

Intended learning outcome — Apply, Knowledge, Mark (GPA)

Learning process — Pre-class learning, Additional, Learning time, Learning content (Concept, Theory, Calculation, Contextual, Long question), Linking learning modes, Practice, Revision, Applicable, More way to learn, Check learnt or not

Assessment — Examination, Online

Online learning — MC (Calculation), Contextual, Long question, Matching game, Thinking forum, Warm-up quiz, Chapter exercise, Chapter preview, Weekly assignment, Chapter review, Chapter quiz, Quiz, Reference, Reliable, Time, Searching, Participation mark, Level quiz (Before examination, Most helpful, Most useful), Do not know how to do

Engagement — Helpful, Useful, Understand, Learn, Good, Like, Interest, Want, Reinforce, Memory, Deep, Think, Explore

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Developed Thematic Map (15 Themes) Page 2/2

Appendix O: Descriptions of the 12 Themes and 85 Sub-Themes

Theme/Sub-Theme	Description
Traditional learning activity	**Learning activities in traditional learning environment.**
Lecture	Teachers conduct lectures.
Class Exercise	Doing exercises in class.
Assignment	Doing assignment or exercise after class.
Read material	Reading textbook, lecture notes and referencing materials.
Online learning activity	**Learning activities in online environment.**
Chapter Preview	Pre-class activities include chapter preview and weekly assignment in the learning platform.
Warm-up quiz	Pre-class warm-up quiz in the learning platform.
Matching game	Matching game in the learning platform.
Thinking forum	Case studies in multi-media format for online discussion in the learning platform.
Chapter review	Slides with audio narration for summarizing the chapters in the learning platform.
Level quiz	Multiple choice exercises in the learning platform in which online participation is counted in overall assessment.
Chapter quiz	Multiple choice exercises in the chapters in the learning platform.
Chapter exercise	Multi-formatted exercises in the chapters in the learning platform.
Online exercise	General description of online exercises, including warm-up quiz, level quiz, chapter quiz and chapter exercise in the learning platform.
Online searching	Searching in the Internet.
Online material	Learning material in the learning platform or in the Internet, for example, referencing materials.
Learning process	**Student did during learning process.**
Revision	Do revision, practise more and revise contents.
Learning time	Time which learning take place, for example, at night and before examination.
Theory	Learning contents related to theory, for example theoretical content, idea, topic and concept.
Calculation	Learning contents related to calculation, for example, calculation exercise and multiple-choice exercise.
Contextual	Learning contents in contextual format, for example, long questions.
Additional knowledge	Additional knowledge outside the syllabus.
Learning verification	Check if content learnt or understood.
Link learning modes	Students link online and traditional learning.

Engagement	Reason for student's engagement in learning.
Helpful	Helpful for students' learning. E.g. useful, effective and helpful.
Most helpful	Most helpful for students' learning. E.g. most useful and most helpful.
Like	Students like, enjoy, want or feel interested when learning.
Encourage	Encouraged or motivated students' learning.
Flexible	Flexible learning, more options, convenient, and additional learning mode.
Applicable	Practical knowledge or applicable knowledge.
Reinforce	Related to reinforcement, memory and strengthen.
Understand	Understand or learn.
Deep	Learnt deeper, lead thinking, or deep learning.
Learning outcome	**Intended learning outcomes.**
Knowledge	Intend to learn, curious to learn, acquire knowledge or apply acquired knowledge.
Result	Obtain good result, pass the examination, good GPA or further study.
Assessment	**Assessment of the course.**
Examination	Examination mark, mid-term examination and test.
Online participation	Online participation or the 5% mark.
Collaborative learning	**Students' learning via collaboration.**
Traditional T-S communication	Teacher-student communication, for example, consultation and ask question after class.
Traditional S-S communication	Student-student communication, for example, group discussion in the class.
Online T-S communication	Teacher-student communication in online environment.
Online S-S communication	Student-student communication in online environment.
Online tools	Tools or software for online communication. E.g. Email, WhatsApp, Skype and Facebook.
Teacher's role	**Students' learning with teacher's engagement.**
Teacher's encouragement	Teachers encourage students to learn. E.g. Encourage them to learn or answer their questions.
Link learning modes	Teachers link online and traditional learning.
Teaching design	Course design and pedagogical design.
Personal barrier	**Problems relate to individual students.**
Language	Poor English of student or problems due to using English.
Attitude	Lazy, feel bored, no time, forget, etc.
Pressure	Heavy workload, burden or pressure.

Lack of understand	Lack of understand, cannot learnt, find difficult, etc.
Course problem	**Problems relate to course design and delivery.**
Content problem	Content error, activity error, etc.
Not helpful	Content not helpful, not useful, etc.
Insufficient feedback	Insufficient feedback during learning, for example, feedback in online question.
Insufficient instruction	Insufficient instruction to learn, for example, instruction in using the system.
Insufficient time	Insufficient teaching time or learning time.
Insufficient teaching support	Insufficient support from the school or teacher.
Technical problem	Problem in using the system, for example, cannot login and poor design.
Not in syllabus	The contents are not within the syllabus.
Student need	**Students' need in blended learning.**
Better system	Need better system design and better function.
Allow printing	Need allowing printing of online content.
Better course design	Need better course design.
More online feedback	Need more detailed feedback or hint in doing online question.
More online question	Need more online question or a larger question pool.
More practical	Need the content be more practical or get them prepared for future career.
More guide	Need more instruction or guide for online learning.
More learning hour	Need more teaching hour, consultation hour or learning hour.
More links for learning modes	Need more links for online and traditional learning.
More teaching support	Need more teaching support.
Online class	Need online class or online group discussion.
Preference	**Students' preference in blended learning.**
Keep traditional way	Keep traditional ways of learning, for example, hand writing for doing calculation.
Bi-lingual	Prefer using both English and Chinese during learning.
Mobile learning	Prefer having mobile learning support, for example, apps and mobile content.
Integrated blended learning	Prefer having integrated blended learning or supplemented blended learning.
Ideal blended learning	Ideal blended learning scenarios by the students.