國立臺北科技大學

技術及職業教育研究所

碩士學位論文

在臺印尼空中大學學生網路同步學習經驗之研究

Synchronous Learning Experiences:

Distance Learners' Perspectives

at Indonesia Open University

in Taiwan

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中華民國 **105** 年 **7** 月

Acknowledgement

摘　要

論文名稱：在臺印尼空中大學學生網路同步學習經驗之研究

頁數：118

校所別：國立臺北科技大學　技術及職業教育研究所

畢業時間：一百零四學年度第二學期

學位：碩士

研究生：Junedi

指導教授：蔡銘修

關鍵詞：網路同步學習、遠距教學、印尼

　　本研究探討不同背景在臺印尼空中大學學生對網路同步學習之觀點。共有 120 位管理、傳播及英文科系的大學生參與本研究。參與者填寫有關其背景、就讀原因、以及他們對網路同步學習觀點的調查問卷。大部分學生（70％）是女性，其工作時數比男性學生較長。取得教育學位、未來有更好的職業，以及工作時程是學生就讀空中大學的前三名因素。根據統計結果顯示在臺印尼空中大學學生對網路同步學習有正面的看法。另不同性別學生對網路同步學習之觀點亦有不同，其中女性對網路同步學習的看法較男性更正面。此外，一至二年級的學生對網路同步學習的看法亦較三年級以上學生更正面。然而，不同年齡或工作狀態的學生其看法並沒有顯著差異。而根據變異數分析結果亦表明：（1）就讀管理科系和就讀傳播科系的學生對網路同步學習之觀點有顯著差異；（2）每日學習時數小於或等於一小時的學生和學習時數介於一至二小時的學生對網路同步學習之觀點亦有顯著差異。

ABSTRACT

This study examines the differences of distance learners' perspectives of synchronous e-learning environment at the Indonesia Open University in Taiwan based on their demographic characteristics. The participants in this study are 120 undergraduate students from three programs (Management, Communication, and English) at the Indonesia Open University in Taiwan. Participants completed a questionnaire that investigated their demographic characteristics, enrollment factors, and their perceptions of synchronous e-learning environment. The majority of students (70%) are female, and female learners have longer working status than male learners. Degree or education level, better occupation in the future, and work schedule are the top three enrollment factors. Based on results of statistics, the results show that students at the Indonesia Open University in Taiwan have positive perceptions of synchronous e-learning environment. There were significant different perceptions on synchronous e-learning environment when students are compared by gender, where females perceived synchronous e-learning more positively than males. And when compared by class level, the 1st to 2nd year students have more positive perception than students of 3rd year and above. However, there were no significant differences in students' perceptions when students are compared by age and work status. The results of ANOVA show that: (1) there was significant difference in perception between Management students and Communication students; (2) there was also a significant difference in

perception between students who had daily study duration of less than or equal to one hour and students who had daily study duration of more than one hour and up to two hours.

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Chapter 1

INTRODUCTION

A. Research Background

The Information and Communication Technology has inevitably become the most powerful tool in almost every aspect. The web-based communication system has a great potential to increase individual participation and group collaboration and have been widely advocated as tools for collaboration that can support self-explanation, social negotiation, and shared knowledge construction among participants. The development of communication technology such as web-based collaboration tools or groupware have made the situation dramatically different (Park & Bonk, 2007). The use of web-based communication system as teaching and learning tool is also rapidly expanding into today's education system (Ali (2012); Ogunleye, 2010; Park & Bonk, 2007).

Through educational process, people are better prepared to live a life that is constantly changing with increasing competition, especially in world of work, and their education level will affect the progress of a country. Education often plays a key-roll in a person's career, and the key to breaking social class structures (China, 2015). The more education a person has, the better his or her chances of moving up the career ladder (Wanat, Vangulik, Pfeiffer, & Gulik, 1999). In addition, Tarigan (2009) reported that education improves personal capability, attitude, and behavior. In this Internet age, education should be available for individuals to face the future, especially to meet the needs of learners' demands. The education should be able to enhance the quality of the learner to generate, assess, access and apply knowledge and information to solve societal and other complex problems.

Education delivered through electronic media is becoming increasingly relevant in the educational system, particularly at the postsecondary level Institutions are making decisions to invest in the online program despite many questions about the online learning environment. Some organizations, including educational institutions, are using electronic learning (e-learning) as learning media. Ali (2012) discussed that there is increased pressure in universities and in the business community to use online methods for adult education. Ali also stated that with technological changes, educational institutions must also keep up in providing

the ideal learning environment to meet changing demands, from changes in the traditional classroom to the onset of the "Invisible Classroom". He stated that information technology has created a bridge so that many people who want to learn can become "invisible" students.

Since 2000, universities have created information and communication roles for learning activities, developing learning management systems (LMSs) to support e-learning (Hrastinski, 2008). Some countries, such as Canada and Australia, has given exclusive attention for technological applications in education. In 2010, more than 50% of the institutions offering online and face-to-face courses stated that they experienced increased enrollment in both types of courses. In 2013, more universities and colleges (approximately 70%) are turning to online education as part of their strategic plans to boost student enrollment (Allen & Seaman, 2013). The Australian Government's has plans and strategy for bringing schools and teachers into the information age (Jones, 2003; Pillay & James, 2014; Woodcock, Sisco, & Eady, 2015). The Kingdom of Saudi Arabia has given exclusive attention on technology application in education as well. Education institutions in the Kingdom of Saudi Arabia are preparing students for rapidly changing information and technology driven the world. In addition, the Kingdom of Saudi Arabia needs graduates who are ready for the workplace and who have a high level of knowledge and confidence in the use of technology to help them in their lifelong learning (Ali, 2012).

Lee, Hsiao, and Purnomo (2014) identified that e-learning is typically implemented in higher education to support administrative works, management, laboratories, digital libraries, and learning activities in Indonesia. The e-learning implementation model facilitates two primary function: face-to-face interaction between students and lecturers or teachers (interactive in-class activities), and student self-study (in laboratories and libraries, and providing expert consultations).

The advantage of e-learning includes flexible and meaningful interactions among participants (Ali, 2012; Ogunleye, 2010; Park & Bonk, 2007; Spears, 2014; Woodcock et al., 2015). In another word, the e-learning enables students to communicate with other students, teachers, and experts, as well to conduct collaborative work. In addition, e-learning enables a consistent delivery of content, improves tracking, and information in overload. Furthermore, Ali (2012) identified the advantage of e-learning into two categories:

1. Advantages of e-learning for learners include increase accessibility to information, better content delivery, personalized instruction, content standardization, accountability, confidence, on-demand availability, self-pacing, interactivity, and increased convenience.

2. Advantages of e-learning for faculty includes e-learning reduces cost, printed materials cost, and labor cost.

E-learning can be divided into a triad of synchronous, asynchronous and hybrid learning environments. Synchronous learning environments provide real-time interaction, which can be collaborative in nature incorporating e-tivities, students and teachers or instructors use the system simultaneously in real time (Perveen, 2016; Salmon, 2013; Spears, 2014). Asynchronous environments are not time bound and students can work on e-tivities on their own pace. Learners access programs online at different times, and cannot communicate without a time delay (AMA, 2003; Perveen, 2016). A hybrid online environment blends synchronous sessions with the asynchronous set of e-tivities. It can be called hybrid as it combines simultaneity with non-simultaneity as instructional design for both synchronous and asynchronous teaching may have altogether different patterns (Perveen, 2016).

Conventionally, in educational institutions, especially in higher education settings, e-learning has depended more on asynchronous systems, whereas synchronous conferencing system has often played a supplementary role of socializing, brainstorming, or virtual office hours in online courses (Branon & Essex, 2001; Park & Bonk, 2007). (Gedera & Williams, 2013; Hrastinski 2008; Perveen, 2016) identified that an asynchronous mode of learning/teaching has been the most prevalent form of online teaching so far because of its flexible modus operandi. Asynchronous environments provide students to access learning material anytime anywhere with the readily available material in the form of audio/video lectures, handouts, articles, and power point presentations. In contrast, Park and Bonk (2007) reported that delayed feedback, difficulty in communicating with others in different times zones, and lack of emotional connection were found in learning activity by asynchronous environments.

Some researchers point out that synchronous learning environment has many advantages over asynchronous interaction in distance learning. The synchronous learning environment or virtual classroom facilitated reciprocal communication among participants where they could clarify issues, and provide instant feedback as they were engaging in the

activity and the interactions with peers. The facilitator seem to increase motivation and student learning (Park & Bonk, 2007; Schullo, Hilbelink, Venable, & Barron, 2007). In addition, Spears (2014) point out that synchronous learning environments have more in common with the traditional classroom than asynchronous learning environment. For this reason, synchronous interaction is the most practical mode for courses adapted from traditional classroom to the virtual learning environment.

The Information and Communication Technology quality and Internet quality affect satisfaction on e-learning. Ali (2012) indicated that the quality of e-learning courses significantly affect satisfaction on e-learning, to the virtual characteristics of e-learning, including interactive discussion and brainstorming, the multimedia presentation for course materials, and management of learning processes, assist learners in establishing learning models effectively and motivating continuous online learning. E-learning environment has generated a need to transform the way of the educational system, which participants learn by using more modern learning media, more efficient, and effective alternatives.

B. Research Motivation

Distance education in Indonesia was introduced in 1955 with the establishment of correspondence diploma programs aimed at upgrading teaching qualification. Indonesia has started the implementation of e-learning focusing especially at the university level. However, in reality, a complete implementation is difficult to be done. The implementation of e-learning system is not easy. Many obstacles must be overcome (Kusumo, Kurniawan, & Putri, 2012). In addition, (Basuki, 2007; Hussein et al., 2007; Lo, 2013; Yuhetty (2004)) reported that e-learning in developing countries, especially in Indonesia should focus on improving their technological infrastructures such as accessibility and connectivity. Hussein et al. (2007) concluded that technology is a significant factor for the difference in Open Universities in developing countries and those in developed countries. Generally, the e-learning environment in formal education of Indonesia is merely offered as electronic learning media provided by education ministry for educational institutions. Some private universities such as Petra Christian University of Surabaya has provided lectures through the Internet for some courses by asynchronous e-learning environment, and the only institute using tutorial via Internet or synchronous e-learning environment is the Indonesian Open University. The university is still facing obstacles as described above, which still needs to be overcome.

In 1984, the Indonesian Open University or *Universitas Terbuka* was established as a 45th national university in Indonesia and fully supported by the government (Hussein, Aditiawarman, & Mohamed, 2007). Indonesia Open University in Taiwan was established in 2011 and has been applying the blended learning model. The following information is the curriculum of the Indonesia Open University in Taiwan.

1. Study Programs (Bachelor Degree)

a. Management has fifty courses (145 credits) in eight semesters.

b. English has forty-eight courses (144 credits) in eight semesters.

c. Communication has forty-nine courses (151 credits) in eight semesters.

2. Learning System

a. Distance learning, learning content delivered by electronic media and printed.

b. Open learning, there is no limitation on diploma year, age, academic year, and taking exam frequency.

3. Learning Method

a. Blended learning, through classroom and online delivery or a learning system which is a combination of face-to-face class and online class with eight class sessions at least (six sessions synchronous e-learning class for 2 hours, and two sessions face-to-face class for 2 hours), and the instructors are in Taiwan.

b. Online tutorial (asynchronous), some courses are delivered by Indonesia Open University own e-learning platform, named Tuton. The learning contents are from the Indonesia Open University Center, and the instructors are in Indonesia.

c. Self-learning, some courses delivered by electronic media and printed without face-to-face class and either synchronous e-learning session. However, for those courses, there is one advisor for all of the students. If students face obstacles in their study, the counselor would help them to overcome, the advisor provided by Indonesia Open University in Taiwan. This method also applied if the number of students does not qualify to open a class, to open a class should be there 3 students at least.

d. In the 7th semester, students have an advisor for writing a paper.

4. Learning Evaluation

a. Courses with class sessions (face-to-face class and synchronous e-learning sessions), the scores are 50% taken from class sessions and 50% from the exam.

b. Courses with asynchronous e-learning class only, the scores are 30% taken from class sessions and 70% from the exam.

c. Courses without online learning, neither synchronous e-learning sessions nor asynchronous e-learning class, the scores is 100% taken from the exam.

Since 2011, at Indonesia Open University in Taiwan have used 3 kinds of synchronous e-learning platform: (1) WizIQ for 3 years; (2) BigblueButton for less than 1 year; and (3) currently using Skype for Business.

Since the Indonesia Open University in Taiwan established in 2011, there is little study on students' learning process by the synchronous environment (Dzikria & 'Ulya, 2016). AMA (2003) identified that an e-learning needs analysis is very similar to the assessment process we would use for any other form of training delivery. The basic model includes:

- Determining training objective
- Analyzing the needs and skills of the audience receiving the training by collecting data
- Reviewing the data for trends and consistencies
- Designing a high-level course outline for the e-learning curriculum
- Developing training or learning recommendations based on the data collected
- Compiling a project plan and budget for the e-learning curriculum moving forward
- Summarizing the needs analysis results and presenting them to management

Based on discussions with Chief Executive of Indonesia Open Universities in Taiwan, the e-learning platform for distance learning process has been changed three times. E-learning system implementation is the best way for distance learning, and blended learning implementation for learners who have limited learning time is a necessity through technological developments. Therefore, some studies may be required since each program implementation with the goals achieve always requires research to find out the weakness and problem solving. Some researchers have done research on e-learning at open universities in

Indonesia. However, research on the Open University in Taiwan still needs to be done because of the very significant differences is systems, such as students' background, the Internet network and electricity grid.

According to Maynes (2014), online learning participants indicated a strong correlation between the course instructors' evaluation of their online work and their perception of overall satisfaction with learning in an online environment. Young & Norgard (2006) states that in order to assure quality and consumer satisfaction, institutions and their faculty must pay close attention to their students' perceptions of online courses and programs. Meyer (2014) also recommended that research on quality online learning focus on student perceptions. Johnson (2012) notes that it is important for researchers to understand the characteristics of students participating in online learning and how these characteristics may influence the learning outcomes that are achieved. The 2011 National Online Learners Priorities Report by Noel-Levitz stated that the colleges and universities should pay particular attention to their students' perceptions of online courses in order to offer courses that will meet students' expectations. Most studies of online programs have focused on their technical aspects, neglecting the importance of students' perceptions (Boekaerts, 2002). Supporting the need for more studies examining students' perception in online courses, Kuo, Walker, Belland, and Schroder (2013) stated that among the attitudinal constructs, student satisfaction, referring to student perceptions of learning experiences and perceived value of a course, may be particularly worthy of investigation. (Bolliger 2004; Tallent-Runnels et al., 2006) argued that the growth in online education should prompt more research that addresses students' satisfaction with online instruction.

Galusha (1998) indicated that since distance learning is student-centered, knowing the characteristics and demographics of the distance learners help us to understand the potential barriers to learning. Effective institutions survey their constituencies regularly, compare their data to their past performance, and then actively respond to the challenges. It is important to be aware of national trends for a broader perspective, but the perception of the online learners is the most meaningful (Noel-Levitz, 2006). Lee (2007) suggested that demographic characteristics might have influenced on individual students' online learning experience. Several researchers who studied about students' perspectives on synchronous systems discuss that there are different perspectives based on students' demographics, such as age, gender, class level, major, and work status. Thus, this research aims to determine the distance learners'

perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan and to examine their perceptions based on their demographic characteristics such as age, gender, class level, major, work status, and learning strategies (daily study duration). This study will conduct research survey about the students' perspectives on the synchronous environment at Indonesia Open University in Taiwan.

The success of utilization of Information and Communication Technologies is among others depends on the infrastructure which includes the telecommunication network, the availability of Internet facilities and the use of Internet. Generally, the development of Information and Communication Technologies in Indonesia nowadays is less encouraging (Yuhetty, 2004). In addition, Kusumo et al. (2012) reported that most of the Indonesian students in Indonesia still not familiar with e-learning. Kusumo et al. (2012) reported that in Indonesia, most of the students still has low independence learning level. In addition, while the development of Information and Communication Technology in Indonesia is less encouraging, Taiwan has had a great development of Information and Communication Technology (Akamai, 2015a, 2015b). By the significant differences of the technological factor between in Indonesia and Taiwan, thus this study aims to determine distance learners' perspectives on synchronous e-learning environment at Indonesia Open University in Taiwan.

C. Research Purposes

In this study, there are four main purposes, as follows:

1. To find out students' demographic characteristics at Indonesia Open University in Taiwan.
2. To find out the enrollment factors of importance for students enroll.
3. To find out the learners' perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan.
4. To compare the differences between different background students' perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan.

D. Research Questions

1. How do the demographic characteristics of learners at Indonesia Open University in Taiwan?
2. What are the Factors that contributed to enrollment?

3. What are students' perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan?

4. Is there any significant difference in students' perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan when students are compared through their demographic characteristics:

    4.1. Age

    4.2. Gender

    4.3. Class level

    4.4. Major

    4.5. Work status

    4.6. Learning strategies (daily study duration)

E. Benefits of Research

The expected benefits of this study are:

1. A better understanding of synchronous e-learning experiences from students' perspectives.

2. Assist Indonesia Open University in Taiwan understand the factors that motivate students and help them sustain enrollments.

3. As an input or information for Indonesian Open University in Taiwan and in other countries to choose learning media and learning system for distance learning.

4. Providing data or information for further research concerning the selection and use of learning media, learning strategy at Indonesian education system.

5. Providing data for decision-making about program modification, continuation, and/or expansion of Indonesia Open University in Taiwan and in other countries.

6. Provide a foundation for further research as a source for entrepreneurs desiring to start new institutions of higher education offering online programs.

F. Terms Definition

The following definitions are aimed to clear up and focus on the terms were pertained to this study:

1. **Learning Experience**

The meaning constructed and evaluated by learners of their learning environment (Knowles, Holton III, & Swanson, 2014). In this study, the participants are have already attended the synchronous e-learning environment. Their perceptions are focused on their experiences about: (1) Enhancement of a sense of connectivity; (2) Prompt support and feedback; (3) Learning strategies; (4) Perceived ease of use; (5) Perceived usefulness; (6) Time sessions; (7) Technological issues; (8) Competence; and (9) Learning content.

2. **Distance Education and Distance Learning**

Distance education is a form of education that focuses upon intertwining pedagogy, technology and information system to deliver education to the students who cannot be present physically in a classroom or in front of a tutor due to a number or circumstances (Jahan, 2010). ICR (2008b) explained that distance education is a formal education process in which the majority of the instruction occurs when students and instructor are geographically separated. Instruction may be synchronous or asynchronous. Content and communication may be exchanged through a variety of media. Distance learning is a form education with the situation in which the instructor and students are separated by time, location, or both. Distance learning courses can be synchronous or asynchronous in nature (AMA, 2003). The Indonesian Open University offered the distance education program for Indonesian workers in Taiwan who be present physically in a classroom for every day. Students attend the classroom only once per month.

3. **E-Learning**

E-Learning refers to learning that is electronic or computer based, but the term is often used to refer to learning via the Internet (ICR, 2008a). E-learning is essentially the network-enabled transfer of skills and knowledge. Rosenberg (2001) defined that e-learning is the use of Internet technologies to create and deliver a rich learning environment that includes a broad array of instruction and information resources and solutions, the goal of which is to enhance individual and organizational performance. Indonesia Open University in Taiwan has been using e-learning as learning media, the courses are delivered by synchronous. After synchronous session, recorded learning content would be uploaded to asynchronous platform. This study was focused on synchronous e-learning environment.

4. Online Learning

Online learning (or online education) refers to the use of online communication networks for educational, such as course delivery and support of educational projects, research, and access to resources and group collaboration. Online learning mediated by the web (Harasim, 2012). According to ICR (2008b), online learning is a learning situation that supported by a piece of software, running on an electronic network.

5. Hybrid e-Learning

A hybrid e-learning environment blends synchronous sessions with an asynchronous set of online activities, it can be called hybrid as it combines simultaneity with non-simultaneity as instructional design for both synchronous and asynchronous teaching may have altogether different patterns (Perveen, 2016; Salmon, 2013).

6. Blended Learning

Definition of blended learning is the integration of group and self-paced instruction, usually manifested through classroom and online delivery or a learning system which is a combination of face-to-face class and online class. AMA (2003) identified that blended learning is a formal education program in which a student learns at least in part through the delivery content and instruction via digital and online media with some element of student control over time, place, path, or pace.

7. Synchronous e-Learning

Synchronous also called virtual classroom e-learning, and asynchronous e-learning also called self-study forms of e-learning (Clark & Mayer, 2008). Synchronous e-learning technology as a Blended tool, one that incorporates some features of both asynchronous e-learning and instructor-led face-to-face classrooms (AMA, 2003). Synchronous e-learning is real-time, instructor-led, online learning in which all participants are logged on at the same time and communicate directly with each other and the instructor through the computer and possibly other means as well (ICR, 2008a, 2008b, 2008c, 2008d, 2008e).

8. Asynchronous e-Learning

Asynchronous e-learning is more or less self-paced learning event in which learners are accessing programs online at different times, and cannot communicate without a time delay (AMA, 2003).

Chapter 2

LITERATURE REVIEW

This chapter reviews the literature about online learning, blended learning, distance education, synchronous e-learning system, and asynchronous e-learning system. These reviews accordance to the conditions that applied at Indonesian Open University in Taiwan.

According to Harasim (2012), in such a technology-driven world, it is critical and timely to study the intersection of learning theory and technology. While the Internet and mobile communication technologies reshape the potential of our professional and personal communication modes, how we think about learning and how we practice our profession confront us in our personal lives, we have embraced new technologies for social communication.

A. Effectiveness of Online Learning

Education has changed from an orderly world of disciplines and courses to an info-sphere in which communication technologies are increasingly important (Molnar, 1997). In theory, the purpose of educational change presumably is to help schools accomplish their goals more effectively by replacing some structures, programs and/or practices with better ones (Fullan, 1991). Online learning is a fast-evolving, Internet-dependent method of learning and education. Tight coupling between changes in information technology and changes in e-learning provide opportunities and challenges. Successful change must involve strategic and plan, and the policies, procedures of learning process may need to be modified.

Online learning is rather different from traditional learning. Online learning is as much a social activity as an individual one. It usually provides the learner with a great flexible and self-learning. Online learning is flexible; learners and teachers could study without any time and place limitations (Cinkara & Bagceci, 2014). Online learning activities use online technologies, such as chat rooms, discussion boards, or email, to facilitate the participation of e-learners in meaningful exercises. Much like the activities and games used in traditional classroom training, e-learning activities can be used by instructors and trainers to accomplish a variety of goals, such as introducing learners to one another, sharing experiences, benefiting from team learning, increasing participation, or encouraging learners to develop constructive

online relationships throughout the course (Watkins, 2005). Nowadays, technology greatly affect the world of education, technology brings changes in the education system, and technology adoption in distance education has undergone a very significant increase. As educational technology and Internet access become ubiquitous in classrooms and new teachers (ICR, 2008b). Many researches on learning reports the growing number of online learners. Scholarly articles and papers dealing with the use of online learning technologies for teaching on the Internet have been produced since these tools have been made more widely available to the general public in the first decade of 21st century

Loyens, Magda, and Rikers (2008) identified that the growth in online education has heightened competition among postsecondary institutions. According to the report of Noel-Levitz, we can see the yearly report of growing number data of online learners from some institutions. With that competition, there has been increasing emphasis on attending to student satisfaction (Jackson, Jones, & Rodriguez, 2010). Noel-Levitz is a trusted partner to higher education, that helps systems and campuses reach and exceed their goals for enrollment, marketing, and student success. Over the past three decades, the higher education professionals at Noel-Levitz have consulted directly more than 2,700 colleges and universities nationwide in some areas (student retention, staff and advisor development, student success, marketing and recruitment, financial aid services, research and communications, and institutional effectiveness). The online learning population is a heterogeneous and diverse group from a variety of cultural and educational backgrounds. One of the main reasons they engage in online learning is because of the flexibility it provides to pursue their educational goals along with a number of other roles and responsibilities in their life. Noel-Levitz publishes the yearly *National Online Learners Priorities Report*, which includes a comprehensive examination of online learners. The 2009 study include 68,760 learners from 87 institutions and the diversity characteristics of online learners are showed in Table 2.1 (Noel-Levitz, 2005).

Table 2.1 Diversity Characteristics of Online Learners 2005 and 2009

Primary Diversity Characteristics	Learner
Gender (Noel-Levitz, 2009)	60% Female
	49% Male
Age distribution (Noel-Levitz, 2009)	20% under 24
	32% -25 -34
	26% - 35 - 44
	18% - 45 – 54
	4% - 55 and over
Ethnicity (Noel-Levitz, 2005)	74% White
	12% African American
	4% Hispanic
	3% Asian
	7% Other
Secondary Diversity Characteristics	**Learner**
Enrollment status (Noel-Levitz, 2009)	81% Primary online
	19% Primary on campus
Work status (Noel-Levitz, 2005)	70% Employed full-time
	17% Employed part-time
	13% Unemployed
Marital status (Noel-Levitz, 2005)	37% Married with children
	31% Single
	11% Single with children

Source: (Stavredes, 2011)

The majority of online learners are between the ages of 25 and 44, which is a wide age distribution that has implications for the types of instructional strategies that people used in the online courses. Although the largest number of learners is White, there is a growing number of African-American, Hispanic, and Asian learners, a trend to consider as my expectation the appropriate teaching strategies for Indonesia education system.

The majority of online learners in the 2011 National Online Learners Priorities Report are Caucasian females, they were primarily enrolled online with a full-time class load. A majority were at the undergraduate level and were employed full-time while working on their degrees. A little over half of the students were married and the majority own their own homes. Most of the students plan to complete their degrees online, but they were taking fewer than six credits. They were also new to online programs with the majority having taken fewer than three classes previously. Forty-two percent of the students had a graduate-level goal of obtaining a doctorate or master's degree (Noel-Levitz, 2011).

The results of the Priorities Survey for Online Learners (PSOL) of 99,040 students from 108 institutions include online learner responses over a three-year time period, from the

fall of 2008 through the spring of 2011. The diversity characteristics of online learners in 2010 and 2011 are showed in Table 2.2 and Table 2.3. Ethnicity was not reported in 2009 through 2015. Students enrolled primarily online comprise approximately 85,000 among these students, while students enrolled primarily on campus include approximately 12,000 students. Based on the results given by Noel-Levitz in 2011, we can see that from the 99,040 students from 108 institutions, there are 23% of students who are first-year students as an online learner. Noel-Levitz (2014) reported that since 2000, adult learners (students age 25 and older) have become one of the fastest growing college student populations. Between 2000 and 2011, their enrollment increased by 41 percent, and it is expected to grow another 14 percent through 2021. For characteristics can be seen in Table 2.2 through Table 2.5.

Table 2. 2 Diversity Characteristic of Online Learners 2010

Diversity	Learner
Gender	69% Female, 31% Male
Age	9% 24 and under 31% 25 to 34 26% 35 to 44 28% 45 to 54 6% 55 and under
Current enrollment status	83% primary online, 17% primary on campus
Number of learner and institution	84,000 students, 97 institutions

The class level and ethnicity was not reported in the 2010 report.

Table 2.3 Diversity Characteristic of Online Learners 2011

Diversity	Learner
Gender	67% Female, 33% Male
Age	15% 24 and under 30% 25 to 34 28% 35 to 44 20% 45 to 54 7% 55 and under
Current enrollment status	87% primary online, 13% primary on campus
Class level	23% first year 17% second-year 14% third year 12% fourth-year 30% graduate level 4% other
Number of learner and institution	99,000 students, 108 institutions

Class level was reported in the 2011 report, ethnicity was not reported in 2010 through 2015.

Table 2.4 Diversity Characteristic of Online Learners 2012

Diversity	Learner
Gender	68% Female, 32% Male
Age	17% 24 and under 41% 25 to 34 22% 35 to 44 20% 45 and over
Current class load	69% full-time, 31% part-time
Number of learner and institution	90,000 students, 228 institutions

In the 2012 report, class level and current enrollment status were not reported, in the 2012 report current class load was reported. According to the 2012 report, over one-half (69 percent) of the students took full-time online learning.

Table 2.5 Diversity Characteristic of Online Learners 2013

Diversity	Learner
Gender	70% Female, 30% Male
Age	10% 24 and under 29% 25 to 34 29% 35 to 44 23% 45 to 54 9% 55 and over
Current enrollment status	95% primary online, 5% primary on campus
Number of learner and institution	114,000 students, 104 institutions

According to the yearly report by Noel-Levitz, more than 60% of online learners were female, most of the online learners aged between 25-34 years old. Kolb (2005) found that the mean age of the online student was 27.97 years, more than 50% were female. Along these same lines, Colorado and Eberle (2010) and Tallent-Runnels et al., (2006) found that the majority of the online learners were between the ages of 30 or younger. In contrast, Tallent-Runnels et al. (2006) found that gender was split equally between men and women.

Annual data provided by Noel-Levitz shows that an increasing number of online students took courses primary online. Learners choose online learning because they are able to select a school or program that fits their educational goals rather than having to choose one

based on the best options available in their area (Stavredes, 2011). Many factors go into the decision of a student to enroll in an online course. According to Noel-Levitz (2014), as at least 80 percent of more than 122,000 graduate and undergraduate students in 2014-15 listed nearly all of these items as enrollment factors. Based on provided annual data by Noel-Levitz, the enrollment factors for students are listed in Table 2.6.

Table 2.6 Factors that contributed to enrollment

Factors	All	Undergraduate	Graduate
Convenience	96%	96%	97%
Flexible pacing for completing a program	93%	93%	93%
Work schedule	92%	91%	93%
Program requirements	89%	88%	90%
Financial assistance available	85%	88%	81%
Reputation of institution	85%	85%	84%
Ability to transfer credits	82%	85%	74%
Cost	82%	83%	80%
Future employment opportunities	81%	83%	79%
Distance from campus	62%	64%	58%
Recommendations from employer	58%	60%	51%

As seen in the table above, the convenience, flexible pacing for completing a program, and work schedule are the consistent top three enrollment factors. Online learners clearly require their courses to fit into their lives and to allow them to participate when it is convenient for the student. The last enrollment factor is the recommendation from the employer, thus, the students have an awareness of their own to enroll in online learning. Factors of convenience and flexibility are important factors. This finding is in accordance to Song, Singleton, Hill, and Koh's (2004).

Rashid, Jahan, Islam, and Ratna (2015) found that the flexible nature of the online distance learning system in regards to time and place is the top one factor that attracts students to enroll online distance learning at Open University. According to their findings, there are four factors that attract students:

a. The flexible nature of the distance online learning system in regards to time and place; instructional approach and resources; open entry or easy entry requirements; pace and collaboration; choice of learning style; and choices in content and assessment.

b. It is possible to continue their study and works simultaneously.

c. This second chance to education creates an opportunity for further study.

d. Students choose this program to achieve an ICT-based diploma in addition to their previous degree, which is not related to ICT. They need the course to complete with the job market and develop their professional skill.

Huang and Hsiao (2012) reported that online teaching is convenient and flexible, instructors enjoyed online teaching because of its convenience, flexibility, and a more diverse student population that could make discussions more interesting. Yukawa (2006) concluded that the combination of simple, flexible software tools used in the course effectively supported complex learning processes by allowing learners to learn freely and easily. Yukselturk and Yildirim (2008) reported that satisfaction with online learning was generally positive, and the major factors of online learning implementation are satisfaction with instructors and peers, course structure, institutional support, and flexibility. Dobbs, Waid, and del Carmen (2009) found that distance learning students are attracted by the convenience and flexibility of online courses. Along these same lines, some researchers (Asterhan & Schwarz, 2010; Collis, Moonen, & Vingerhoets 1997; Ling et al., 2001) concluded that flexibility is the main factor that attracts students to enroll in distance online learning.

Online learning usually provides the learner with a great deal of autonomy, the choices of when, where, and how to learn. Learners are given a lot of freedom to pursue their own interests and methods of learning. In the online learning process, learners must possess initiative and self-discipline to study and complete assignments; students who lack these skills are likely to do poorly with online classes (Kearsley, 2000). Yukawa (2006) discussed that for online learners, the impetus for solving their problems was not only an intellectual challenge but also an emotional one. Being a successful online learner depends on a number of factors, including having the necessary learning-to-learn skills, and adapting to the social milieu.

According to Kearsley (2000), there are seven factors to be a successful online learner. They are listed as follows:

a. To do well in online classes, students need to have good study and communication skills, be highly motivated, and be capable of learning to learn.

b. Online learning takes place in a social milieu that emphasizes interpersonal interaction and is sensitive to cultural considerations.

c. Engagement theory provides a framework for online learning that is based on collaboration, authentic content, and problem-based activities.

d. Netiquette provides a set of conventions for online behavior that everyone should follow.

e. Students need certain basic computer skills to be successful online learners.

f. Certain populations of learners, such as young children, older adults, and individuals with disabilities, have special needs in terms of computing.

g. Efforts need to be made to avoid gender bias in online education.

In addition, Çakıroğlu (2014) concluded that matching learning styles and study habits with teaching methods will serve academic performance. Some inventories should be administered at the beginning of the course so that course design and structure may be designed and implemented accordingly. This study was mostly directed to learning styles and study habits individually.

Based on the literature review above, it can be concluded that the online learning is more convenient and flexible, especially for long-distance students.

B. Synchronous E-Learning for Distance Education

In the college and university environment, distance education is an attractive option for adult and nontraditional students, students who need to be away from campus for a semester, or those who have difficulties scheduling required courses in resident programs. Gaining active participation of learners is accomplished both through the interest in the activity (that is, making it engaging and meaningful) and the integration of the activity with the other aspects of the course. The rapid adoption of the technology such as the Internet and electronic communication has enhanced the interactivity for distance learning systems. The rapid and pervasive incorporation of technology into all levels of education has been a significant degree led by those involved in distance education. According to (ICR, 2008b), the technology available in 2008 includes at least 250 versions of group communication software, many applications and tools have been developed to support the design and delivery of distance learning courses. The application of distance learning system has become one of the

best solutions to improve the education quality for everyone, especially for those who have no time to attend the school or college.

The role of synchronous is not limited to an optional support medium but rather has extended to an effective tool for fostering social learning processes for various knowledge domain and addressing diverse subject matters (Orvis, Wisher, Bonk, & Olson, 2002; Park & Bonk, 2007; Tonsmann, 2014; Veerman, Andriessen, & Kanselaar, 2000; Wu, Farrell, & Singley, 2002). When communication is extended and interactive, the potential for learning is thought to increase and is described as social interaction (Dabbagh, 2007; Perveen, 2016; Salmon, 2013).

For distance learning, synchronous e-learning can add an exciting and meaningful dimension to an online course. With a little contingency planning by both the instructor and learners, most technical problems can be overcome (Watkins, 2005). Although the software of online learning program is predominantly an asynchronous model, most programs also have the capacity to hold synchronous online conversations, which are commonly referred to as real-time or online chat (Bender, 2003). Distance learning is a form of instruction in which a geographical separation exists between the instructor and students. With synchronous e-learning system, distance learning activity will be more effective, between students and instructors, and between students and students (ICR, 2008d).

For distance learning process, there is a need for a very significant difference between subjects that require clarification theory only with the explanation that requires more than just theory. For subjects related to the formula would require more in-depth explanation, the media used to be able to provide space and time are more "real" to allow the instructor to explain, as in a real classroom, and students are also able to provide maximum feedback as in a real classroom.

Several studies such as Huang and Hsiao (2012) shows that the use of synchronous e-learning system is the best way to provide the possibility of distance learning that resembles a real learning process in the classroom. It is interesting to note that contrary to the perceived distance in a fully asynchronous-based online environment, synchronous web conferencing seemed to be able to effectively bridge the gap and help establish the instructor-student connection (Huang & Hsiao, 2012). Synchronous e-learning is very useful for distance learning, especially for real-time distance learning. The best advantages of synchronous online

instruction are that faculty and students can talk to each other using text, audio, and video and express emotion using emoticons (Kearsley, 2000; Martin, Parker, & Deale, 2012). According to Karal, Cebi, and Turgut, (2011), online learners define that synchronous e-learning had advantages in terms of being able to participate in a course from experts in a different space, learning new information in technology-intensive, interesting and comfortable environments, providing time savings for the teacher, compensating for a staff deficiency in the university, learning new ideas, being able to listen to the course records again, providing interactive environments and ensuring rapid access to information. In addition, VanDoorn and Eklund (2013) reported that synchronous e-learning was generally perceived positively by students. A quickly answered question allowed students to spend more time completing their assignment. Further, the students formulated questions and answers in writing. The immediacy of the response and the irrelevance of distance, along with anonymity, all helped the students in completing the unit.

Learning styles and study habits (concentration and planning of subjects) are very important in online synchronous learning process. Considering that it is difficult to control concentration in the online synchronous settings, it is deemed necessary for the instructors and the environment designers to take special measures in this respect (Çakıroğlu, 2014). Learning styles and study habits not only indicate how learners learn, but they can help an instructor to support individual students so that they might teach successfully (Tseng, Chu, Hwang, & Tsai, 2008). More reports of the research on online learning (McIsaac, Blocher, Mahes, & Vrasidas, 1999; Park & Bonk, 2007; Tallent-Runnels et al., 2006) found that instructors' prompt feedback, direct involvement in online learning (Synchronous and asynchronous) activities, facilitation of social interactions, and use of collaborative learning strategies influence learners' positive learning experiences. Grasha (1996) defined learning styles as personal qualities that influence a learner's ability to acquire information, interact with peers and the instructor, and otherwise participate in the learning experience. According to Stavredes (2011), Grasha's definition is focused on the social styles of learners and the interaction that occurs between peers and with the instructor in a given learning environment, all of which has an impact on learning. Learners' social characteristics have a direct impact on how they will engage in the online environment. According to Grasha (1996), the scale spans six categories and looks at preferences along three dimensions: independent-dependent, competitive-collaborative, and avoidant-participant, as shown in Table 2.7.

Table 2.7 Social Styles

Styles	Preferences
Independent	Prefers to work alone
	Not interested in discussion and other learner interaction
	Not interested in teamwork
Dependent	Looks to instructor and learners as guide
	Prefers an authority figure to tell them what to do
	Prefers highly structured environments
Competitive	Interested in learning for reward and recognition
	Prefer exams to projects
Collaborative	Learn by sharing and cooperating with instructor and learners
	Prefers group work and discussion
Avoidant	Not excited about attending class or studying
	Uninterested
	Overwhelmed
Participative	Interested in class activities and discussion
	Work hard
	Wants to meet instructor's expectations

According to Park and Bonk (2007), there are disadvantages perceived of synchronous e-learning, such as:

a. Time constraints and lack of reflection time, the available time for each session were about one hour. The time pressure sometimes led to superficial comments, not thoughtful feedback.

b. Network connection problems, students' network connection problems sometimes forced the students to be disconnected during the sessions.

c. Audio tool related issues, sometimes due to noise or echo occurring during the conferencing.

Park and Bonk (2007) also explained that language barriers kept the students from being active participants in the synchronous discussion. To promote Asian students learning in a synchronous course, several suggestions were made, as follows:

a. Regular face-to-face meetings

b. Use of slower speech than face-to-face discourses

c. Opportunities for asynchronous interaction

d. Inter-group activities

e. Summaries of discussions at the end of such synchronous classes

C. Asynchronous E-Learning for Distance Education

According to Denvir, Balmer, and Pleasence (2011), online learning has broadened the accessibility of education by the reduction of time-zone, employment commitment, and family obligation constraints, particularly with students who have left the traditional learning institutions. Smith et al. (2013) suggest that student-teacher interaction within classroom lecture-discussions may be partially responsible for the observed lower exam performance of classroom students as compared to the student-student interactions of online students in online discussion. In addition, online courses need to use and refine online asynchronous discussion in support of learning (Shibley, Amaral, Shank, & Shibley, 2011).

Asynchronous online is widely utilized as a teaching and learning tool in distance learning universities courses (Andresen, 2009). Asynchronous is an important online learning media, online class discussion tends to be done asynchronously via text in "forums" in which students post message and responses (Shibley et al., 2011). Some researchers (Garrison, Anderson, and Archer, 1999; Lapadat, 2002; Newman, Johnson, Webb, and Cochrane, 1997; Rosenberg, 2001) have suggested learning advantages for asynchronous discussion. Asynchronous discussion can be read in multi-time, students can take as much time as they wish to respond. By asynchronous discussion, no time limits are set by either outside constraints or limited attention spans; information can be read whenever and wherever the students wish to respond, and it can be reviewed, rescanned, and reprinted.

D. Blended Learning Using Synchronous and Asynchronous

The technology of media has changed drastically since the mid-1970s (Gagne, briggs, & Wager, 1992). Selecting and using media depends on a learning situation. The features of this situation impose constraints upon what media may be most effective. This study focused on synchronous e-learning environment. According to Gagne et al. (1992), selecting and using media is very important, and it was a part of the educational evaluation system.

Based on the results of several studies, which focus on synchronous and asynchronous e-learning, there are advantages of each medium in distance learning. It depends on the needs of each student based on individual learning styles or needs of each course. (Park & Bonk 2007; Yamagata-Lynch, 2014) reported that synchronous delivery modes can provide a stronger sense of connection among participants, and blended online synchronous and the asynchronous course can strengthen social presence. This perhaps is similar to what Shahabadi and Uplane (2015) reported in their study that participants were engaged within synchronous e-learning. According to Clark and Mayer (2008), synchronous also called virtual classroom e-learning, and asynchronous e-learning also called self-study forms of e-learning. A virtual learning environment is a designed information space for all. It is a social space; educational interactions occur in the environment, turning spaces into places (Ilin, 2013). Shahabadi and Uplane (2015) reported that asynchronous students prefer solving their problem and finding a solution for issues, the problems and deciding about them in the decision-making process. They prefer to be involved with technical issues rather than social and interpersonal issues. Kolb (2005) found that Individuals with this learning styles preferred organizing information into a logical and concise form, learn by watching and thinking, prefer reading, lectures, and analytical models, prefer logic values, information and science careers and prefer personalize learning. According to Stavredes (2011), it can be concluded that students have different learning styles, therefore the students require different media as well. Tonsmann (2014) described that Blackboard Collaborate provides a good alternative for traditional face-to-face and online offerings. It requires students the same time commitment as face-to-face classes but gives flexibility to remote students to connect from wherever they may be. A blended online synchronous and asynchronous course can strengthen social presence (Yamagata-Lynch, 2014).

Based on my experience as an academic staff at equality school of Indonesia in Taiwan, also known as C package school *(kesetaraan paket C)*, and based on my discussions with the academic team of Indonesian Open University in Taiwan, there are 3 class categories that are offered: self-learning classes, online learning classes, and face-to-face classes. According to the curriculum at equality school of Indonesia and Indonesia Open University in Taiwan, some of the courses are categorized into self-learning class, some courses are categorized into online learning (by synchronous) class, and some of the courses are categorized into combinations class between online-learning class and face-to-face class.

E. Students' Perceptions of Online Learning Environment

Many researchers (Adas, Shmais; Al Zumor, Al Refaai, Eddin, & Al-Rahman, 2013; A. Ali & Ahmad, 2011; Ali, 2012; Ashong & Commander, 2012; Brooks, 2015; Burns; Buxton, 2014; Buzzetto-More & Koohang, 2009; Çakiroğlu, 2014; Çakıroğlu, 2014; Chen et al., 2015; Ding, Bosker, & Harskamp, 2011; Fedynich, Bradley, & Bradley, 2015; Dilani Gedera, Williams, & Wright, 2015; Ghazal, Samsudin, & Aldowah, 2015; Jones-Ferguson, 2012; Karal et al., 2011; Kim, Liu, & Bonk, 2005; Lee, 2007; Liaw & Huang, 2013; Maynes; Nwankwo, 2015; Smart & Cappel, 2006; Song et al., 2004; Teh, 2001; Teng, Chen, & Leo, 2012; Ward, Peters, & Shelley, 2010; Wong et al., 2006; Yi Yang & Durrington, 2010; Yiadom-Boakye, 2011; Zhu, 2012) have conducted studies on students' perceptions of online learning, and examined the comparative value of face-to-face versus online courses. The majority of students have positive experiences with the online learning environment (Burns; Fedynich et al., 2015; Kirtman, 2009; LaPointe & Reisetter, 2008; Maynes; Navarro & Shoemaker, 2000; Neuhauser, 2010; Wyatt, 2005). Braun (2008) found that most participants believed that the quality of online instruction was equal to that of traditional instruction. In another hand, O'Malley and McCraw (1999) reported that students do not initially feel they learn as much in online courses as they do in traditional.

F. Themes Related to Learners' Perspectives of Synchronous e-learning Environment

Some studies have examined learners' views on synchronous e-learning environment (Park & Bonk, 2007; Perveen, 2016; Woodcock et al., 2015). They explained some several themes related to synchronous learning experiences, such as:

a. Sense of Connectivity

Senses of connectivity is an important thing in distance learning. By synchronous e-learning environment students jointly involved in online class, and good interaction in synchronous e-learning environment decreases feelings of isolation and helps students to feel more like insiders in online courses. Several studies results can reinforce that synchronous e-learning environment is complementary rather than an alternative to a physical classroom.

Learning in an online environment through web-based platforms can be a rewarding and rich experience for learners and teachers, especially if the tools used to conduct a class are effectively utilized (Lao & Gonzales, 2005). Moore (1989) enumerated three types of

interaction in distance education: learner-content interactions, learner-instructor interaction, and learner-learner interaction. Marks, Sibley, and Arbaugh (2005) examined the importance of student-student, student-instructor, and student-content interactions types as predictors of perceived learning and satisfaction with an online course.

i.   Learner-Content Interaction

The fundamental role of distance learning instructor is to design, foster and to maintain the interaction between learners with the subject matter of the courses (Saptaningrum, 2011). Moore (1993) defined that student-content interaction as the process of intellectually interacting with content that results in changes in the learner's mind and characterized it as the defining characteristic of education. Courses structure influences learning experience because it determines how well a given course meet the varied expectations of individual students (Nwankwo, 2015). Course content includes assignments, presentations, and assessment (Reisetter, LaPointe, & Korcuska, 2007). Highly structured content influences students' perception of their learning experiences in an online program. (Moore & Kearsley, 2011). Nwankwo (2015) concluded that learner-content interaction is the most important factor in the successful implementation of an online program. The fundamental role of distance learning instructor is to design, foster and maintain the interaction between learners with the subject matter of the courses, Instructors' role in distance learning is to assist students in performing interaction with learning content (Saptaningrum, 2011). Marks et al. (2005) identified examined that student-content interaction (i.e., individual and group projects) were significantly associated with perceived learning and students' satisfaction. Jigsaw activities can combine learner-content and learner-learner interaction and it is proved to be helpful in bridging the information gap, decision-making and opinion tasks (Blake, 2009). In addition, Ramos and Yudko (2008) revealed that student-content interaction was the most important for predicting learning outcomes.

ii.   Learner-Instructor Interaction

Swan (2001) found that students who had perceived a high level of interaction with the instructor also had high levels of satisfaction with the course, and had a higher level of learning than students who thought they had less interaction with the instructor. Learner-instructor interaction could become as vital to online education (Capra, 2011). Marks et al. (2005) examined that student-instructor interactions are the strongest predictors of perceived

learning. several researchers assert the importance of instructors' supportive role and constant interaction with students, as well as the collaboration between peer learners as most prominent ways for fostering learning in online contexts (Bernard et al., 2009; Borokhovski, Bernard, Tamim, Schmid, & Sokolovskaya, 2016; Borokhovski, Tamim, Bernard, Abrami, & Sokolovskaya, 2012; Darabi, Liang, Suryavanshi, & Yurekli, 2013; Gikandi, Morrow, & Davis, 2011; Joksimović, Gašević, Loughin, Kovanović, & Hatala, 2015; Koch, 2014; Roberts, 2011). In addition, Sebastianelli, Swift, and Tamimi (2015) examined that student-instructor interaction significantly positive impact on student satisfaction. (Aragon and Johnson, 2008; Edwards and Helvie-Mason, 2010) described the student-student relationship as vital in the successful implementation of online programs. Social presence is important since it helps not only to facilitate cognitive task-related ability but also to indirectly facilitate the critical thinking process performed collaboratively by community members (Garrison et al., 1999). Park and Bonk (2007) argued that to increase learning effectiveness, it is extremely important for online learning instructors to understand how to promote social interaction and group cohesion of learning participants under time-pressed condition.

iii. Learner-Learner Interaction

The academic performance mostly depended on student-instructors and student-student interaction in online learning settings (Agudo-Peregrina, Iglesias-Pradas, Conde-González, & Hernández-García, 2014). Online learning participants indicated a correlation between their ability to experience sharing of learning (student to student and student to instructor) to be connected to their perception of the knowledgeable stature or their online instructors (Maynes, 2014). This form of interaction between learners, one-to-one or in group settings, with or without the real-time presence of an instructor, and is believed to give advantages for knowledge development (Saptaningrum, 2011).

b. Prompt Support and Feedback

Synchronous communication is not automatically successful without the appropriate instructional support from instructors. If instructors are not suited for online delivery then it can be a disaster; students can be left hanging without guidance and feedback (Park & Bonk, 2007). Online instructors' roles are not only for supporting subject matter, but also for facilitating the learning process through scaffolds, feedback, and structure. The instructional supports and guidelines are helpful to learners progress in the class (Bonk & Dennen, 2003).

Besides receiving course materials distributed by technology, distant learners need to communicate with people at the teaching institution, particularly the people appointed as instructors. Capra (2011) asserted that learner-instructor interaction could become as vital to online education as learner-content interaction if instructors are able to provide more effective and immediate feedback, give clear instruction, and exercise diligence in response to students' questions. Graham, Cagiltay, Lim, Craner, and Duffy (2001) asserted that providing detailed feedback to each student ought to be one of the main targets of online instructors. Moore and Kearsley (2011) stated that feedback from instructors should be short, unambiguous, effective, and immediate. Çakiroğlu (2014) stated that feedback provides an opportunity to evaluate student improvements on learning. Tsai (2012) found that online feedback from teachers and course websites may enhance student learning. Students feel very strongly that most of the factors that influence online course success are attributable to course instructor's knowledge of their subject and skill with teaching that subject online (Maynes, 2014). According to Kim, Kwon, and Cho (2011), the emphasized media integration and instructors' quality teaching to be the significant predictors of both the social presence and student satisfaction.

c. **Learning Strategies (daily study duration)**

According to Park and Bonk (2007), the learners used similar approaches to complete the activity. In terms of strategies used before synchronous sessions, the learners: (1) read critique guidelines and course requirements before the meeting, (2) reviewed their own projects as well as other team members projects (if available) to be discussed during the critique, and (3) prepared the feedback and suggestion from team members' project. During the actual session, they (1) wrote down critique ideas and suggestion from team members, used questions to elicit more information from presenters, and (2) wrote down any feedback received from the group during critique. For before sessions, it can be concluded that the learning strategies is self-preparation before synchronous sessions, and it is related to the length of time they prepare for. In comparing students' study duration between online versus classroom instruction, Oh and Lim (2005) found that online students spent more time completing one week's course workload than students with classroom-based courses. However, Lim and Morris (2009) found that students who studied up to one hour had a significantly higher score for learning involvement than students who studied between one and two hours.

d. Perceived Ease of Use, Perceived Usefulness, and Perceived Intention to Use

According to Davis, Bagozzi, and Warshaw (1989), there are three variables of perceived ease of use, perceived usefulness, and perceived intention to use are combined as the basis of technology acceptance model (TAM). Woodcock et al. (2015) argued that ease of use depends on several factors, including technological issues, clarity of expectation, familiarity with tools, accessibility of online etiquette, and time consumption. Perceived usefulness and perceived of ease of use are two particular beliefs introduced by TAM, which is the important antecedents of behavioral intentions to use information technology (Lee et al., 2014).

e. Time Sessions

Time sessions refer to the accordance of learners' working time with the synchronous e-learning session schedule, and how instructors manage the time for each session. Time constraints and lack of reflection time are the disadvantages of the synchronous e-learning environment (Duemer et al., 2002; Park & Bonk, 2007). Thus it is important for instructors to manage time well.

f. Technological Issues

Technological support was crucial to having quality online experience, which is turn affects student success (Porter, 2015). Technological issues including network connection problems, audio screen tool related issues. Christensen, Anakwe, and Kessler (2001) clarified that technology accessibility is also important in that distance learners will have to access the technology used in online learning course. Some of the students' network connection problems sometimes forced the students to be disconnected during the discussion, or kept an entire group people from using more preferred voice conference tools (Park & Bonk, 2007). (Graham, 1995; Harter and Kim, 1996; Zhang and Estabrook, 1998) found that greater accessibility leads to the more frequent use of an information system, whereas low accessibility works as a barrier to using the system (Graham, 1995; Harter and Kim, 1996; Zhang and Estabrook, 1998). Easier information accessibility brings about the higher use of information and higher perceptions of ease of use (Lin & Lu, 2000; Park, 2009). Park and Bonk (2007) found that technical problems such as connection speed, microphone, noise, echo, and voice quality are the problems on synchronous tools.

g. Competence

E-learning competency is dependent on e-learning self-efficacy (Lambe (2007); Woodcock et al., 2015). Individuals with high self-efficacy are more persistent and devote more effort to achieving their goals, encouraging achievement and desirable learning outcomes (Bandura, 1977; Pintrich, 2000). Lee et al. (2014) described two kinds of self-efficacy: computer self-efficacy, and Internet self-efficacy. Computer self-efficacy is defined as individual's belief about their ability to use a computer in the context of information and technology usage (Compeau, Higgins, & Huff, 1999; Compeau & Higgins, 1995). Internet self-efficacy refers to an individual's beliefs in their ability to successful perform a distinct set of behaviors required to establish, maintain, and effectively utilize the Internet over basic personal computer skills (Eastin & LaRose, 2000). In addition, Lee et al. (2014) discussed that computer self-efficacy and Internet self-efficacy play crucial roles in affecting user beliefs about ease of use. Maynes (2014) noted that students' perceptions of their own skills with the technology needed to engage in online learning are perceived as a factor related to their perceptions of success in an online learning environment and their overall satisfaction with online learning courses.

h. Learning Content

According to Legutko (2007), online learning can be successful if the courses are developed for instruction, conducted similarly and yield a similar result as direct instruction. When it comes to perceived learning in online learning, course content is the most important factor. Sebastianelli et al. (2015) suggested that it is important for faculty who teach distance learners to provide content that adds value, is useful and applicable to the profession, and stresses important concept. Online learning content refers to the content of learning program (Lim, Lee, & Nam, 2007). Online learning participants indicated a strong connection between the instructional environment that was created online and the clarity of instructional materials that were provided and used during the course, including clarity of assignments and feedback. Students perceived the quality of online learning to be the prominent component of online course quality (Yi Yang & Durrington, 2010).

G. Students' Demographics in Online Learning

Johnson (2012) notes that it is important for researchers to understand the characteristics of students participating in online learning. In the current study a decision was made to consider five important student demographic characteristics: age, gender, class level, major, work status, and learning strategies (daily study duration).

a. Age

For several studies on online learning (Colorado & Eberle, 2010; Noel-Levitz, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014; Tseng et al., 2008), most of the online learners aged between 25-34 years old. Several researchers indicated that online students were typically 22 years old or older (Ali & Ahmad, 2011; Amro, Mundy, & Kupczynski, 2015; Ashby, Sadera, & McNary, 2011; Bennett, Padgham, McCarty, & Carter, 2007; Block, Udermann, Felix, Reineke, & Murray, 2008; DeVaney, 2009; Doyle, 2009; Melton, Bland, & Chopak-Foss, 2009; Millan, 2008; Solimeno, Mebane, Tomai, & Francescato, 2008; Wilson & Allen, 2011; Yan Yang, Cho, Mathew, & Worth, 2011; Yukselturk & Bulut, 2007, 2009). Colorado and Eberle, (2010) and Tallent-Runnels et al. (2006) found that the mean age of the online students was 28 years old. Along this same lines, Hussein et al. (2007) found that online students were typically 28 years old.

Age is one of the major variables that contribute to successful online learning (Ogunleye, 2010). Tinto (2001) indicated that individual attributes such as age, gender, and ethnicity impact student performance. Abdullah (2011) mentioned that younger students had a tendency to perform better than mature students in a college setting. Contreras (2004) predicts that age was a factor of computer self-confidence. In another hand, Colorado and Eberle (2010) found that students' age did not significantly affect academic performance in the online course.

b. Gender

According to the yearly report by Noel-Levitz, the demographics report section of the readiness scale reveals that the participants in their study, more than 60% of online learners are female. Gender is one of the important characteristics that impacts students' perceptions of online learning. Garland and Martin (2005) argued that learning style and gender of students must be considered when designing online courses after finding empirical evidence that

gender was a factor in the relationship between learning style and student engagement. Kay (1992) examined gender differences in behavior toward computers and found that males had more positive attitudes toward computer use, used computers much more frequently than females. Kay (2008) found that males significantly higher computer self-efficacy than females. Similarly, Comber, Colley, Hargreaves, and Dorn (1997) reported that males had greater experience and with more positive attitudes toward computers than females. Ong and Lai (2006) found empirical evidence that supports gender difference in perception and relationships among dominant of e-learning acceptance, males' ratings of computer self-efficacy, perceived usefulness, perceived ease of use, and behavioral intention to use e-learning were higher than females. Similarly, Li and Kirkup (2007) found that males were more self-confidence about their computer skills than females. In another hand, Lim and Kim (2003) examined that females students learn better than male students in online learning environment. Female students considered some instructional factors and learning activities more valuable for their learning than other factors, male students considered high interest and personal motivation to learning as more meaningful reasons for their learning. Tsai and Tsai (2010) found that females were more communication-oriented Internet users, seeking interaction with others, while males were more exploration oriented in their use. Females experiencing a richer, more connected, and more valuable online learning experience than males (Johnson, 2012). According to Rovai and Baker (2005), female students tend to the online learning more social and beneficial than male students with online learning . Lu and Chiou (2010) found that gender significantly influenced the perceptions of predictors and students' satisfaction with e-learning system. In another hand, Kolb (2005) found that gender was a factor in the relationship between learning style and the level of engagement.

c. Class Level

The class level in terms refers to differences by academic year. According to Lee (2007), there were remarkable differences among the group of students in difference academic year. Students who had higher class level were more satisfied with learning activities in online learning environment. Senior year students felt less technological difficulties with information and felt more freedom of speech while participating in online discussions. Lee also found that there were significant differences in students' self-confidence in learning productivity. More students in higher class level groups reported that they could enhance learning productivity and improve grades through the online learning community.

d. Work Status

Work status or job status in terms refers to working hours for pay. Lu, Yu, and Liu (2003) found that graduate students' learning styles and demographic factors, such as gender, age group, job status, and a number of Web-based classes taken did not have any significant impact on learning performance in the class. Colorado and Eberle (2010) found that the number of hours worked for pay per week did not significantly affect academic performance in the online course. On the other hand, Lu and Chiou (2010) found that job status has a significant influence on the perceptions of predictors and e-learning satisfaction. According to Tsay, Morgan, and Quick (2000), students who had longer full-time work experiences had a higher internal motivation, insight about self, self-directed learning, and readiness tended to keep taking distance learning. House et al. (2007) argued that students who work more would be more likely to prefer online courses.

e. Major

House, Weldon, and Wysocki (2007) found that major significantly influenced the perceptions of predictors and students' satisfaction with online courses. Buzzetto-More and Koohang (2009) found that there were relationships were revealed: (1) rank as a computer user and plan to take a fully online courses in the future, (2) frequency of visit to the course website with overall satisfaction, (3) preference for in-person courses and course Website satisfaction, (4) amount of time spent online with plans to take a fully online courses in the future, and (5) gender with plans to take online courses in the future.

Based on theory and references, then the null hypothesis can be formulated as follows:

H1: There is no significant difference in perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan when students are compared by their age.

H2: There is no significant difference in males' and females' perception of synchronous e-learning environment at Indonesia Open University in Taiwan.

H3: There is no significant difference in perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan when students are compared by their class level.

H4: There is no significant difference in perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan when students are compared by their work status.

H5: There is no significant difference in perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan when students are compared by their major.

H6: There is no significant difference in perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan when students are compared by their work status.

Chapter 3
RESEARCH METHOD

A. Research Method

This study adopts evaluation research method, a critical appraisal or assessment; a judgment of the value, worth, character, or effectiveness of something; measurement of progress. Evaluation research studies often include surveys of participants or clients. There are many educational research situations for which survey research is the appropriate methodology (Wiersma & Jurs, 2005). According to Best and Kahn (1993), traditionally evaluation studies has been called a school survey. Its purpose is to gather detailed information to be used as a basis for judging the effectiveness of the instructional facilities, curriculum, teaching and supervisory personnel, and financial resources in terms of best practices and standards in education. Evaluation research also known as evaluative research. Evaluative research refer to the procedures adopted to collect and analyze data concerning the effectiveness of a particular program (Verma & Mallick, 1999). Local school systems often conduct surveys called community surveys or school surveys. These surveys focus on numerous factors of school operation and the community's perception of the schools and how well they are being operated. Wiersma and Jurs (2005), also explained that a school census is also a survey, one designed to estimate future enrolments and needs of the school system. Additionally, McMillan and Schumacher (1997) explained that evaluation activities have always been an integral part of education. Frequently, professional judgments have been made about the placement of students in special programs, the extent of student learning, the selection of materials, and the modification of programs.

According to McMillan and Schumacher (1997), there are two types of evaluation. Formative evaluation and summative evaluation. In formative evaluation, researchers collect data to modify or revise a curriculum in a development stage, evaluation result may lead to a decision to revise the curriculum, to extend the field testing to gather more data, or to abort further development in order not to waste resources on a program that ultimately may be ineffective. Summative evaluation can be conducted once the program is fully developed that is when it functions well or does what the curriculum intended with few detrimental side effects. Both formative and summative evaluations are essential because decisions are needed

during the developmental stages of a program to improve it and again, when it is stabilized, to judge its final worth or determine its future.

For the present study, summative evaluation is conducted to examine students' perceptions of synchronous e-Learning environment and to examine the difference in perceptions when students are compared through their demographic characteristics. There are six independent variables: age, gender, class level, major, work status, and learning strategies. The dependent variable in this study is the students' perceptions of synchronous e-learning environment.

In this chapter, a research framework was built in order to clearly understand the complete content covered by the present study. The research framework describes four phases, as follows: research background and motivation; research purpose; literature review; and research methodology.
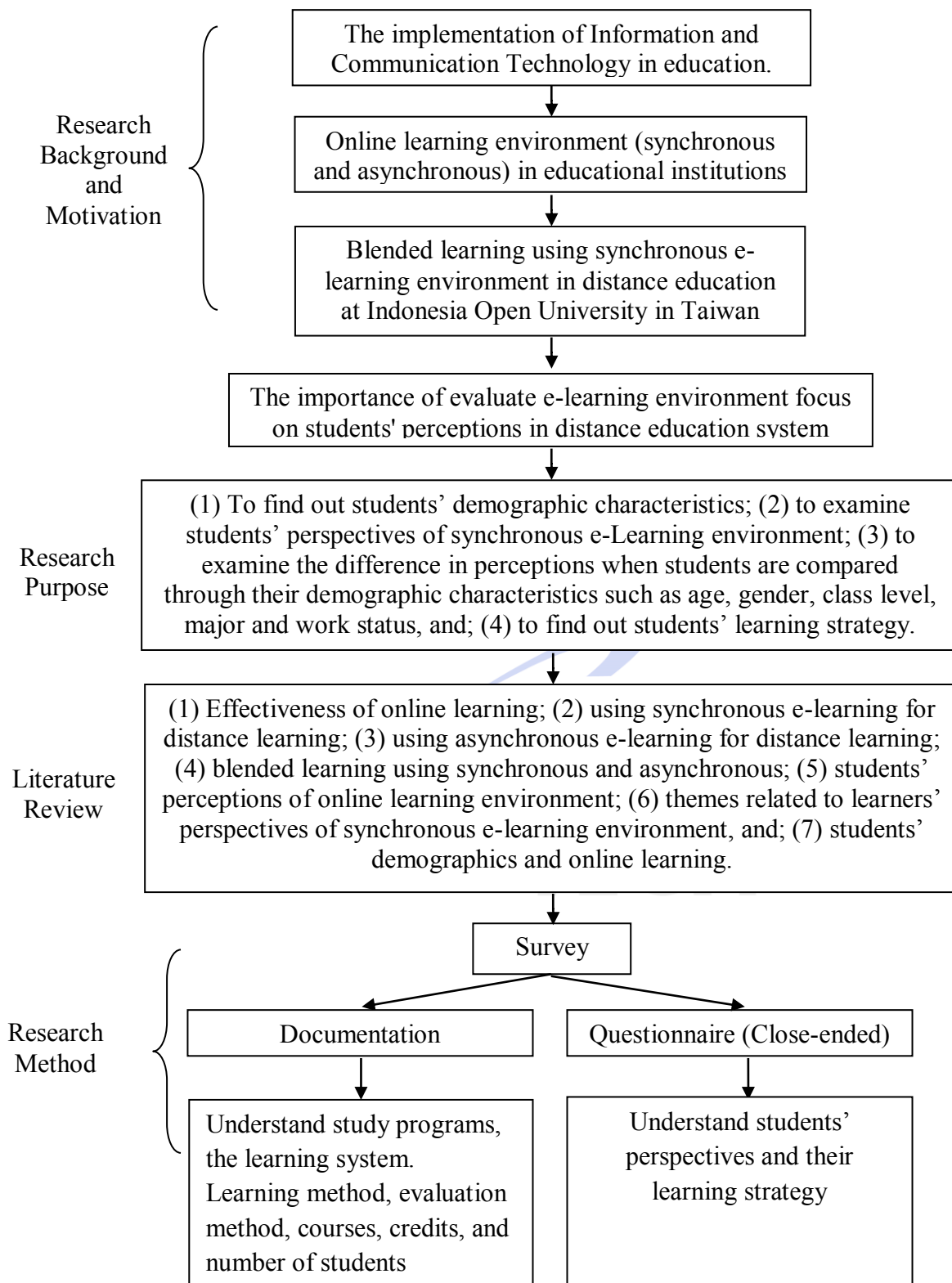
Figure 3.1 Research Framework

In this study, the research process was divided into seven steps: planning; development and application of sampling plan; construction of questionnaire schedule; data collection; translation of data; analysis; conclusion and reporting.
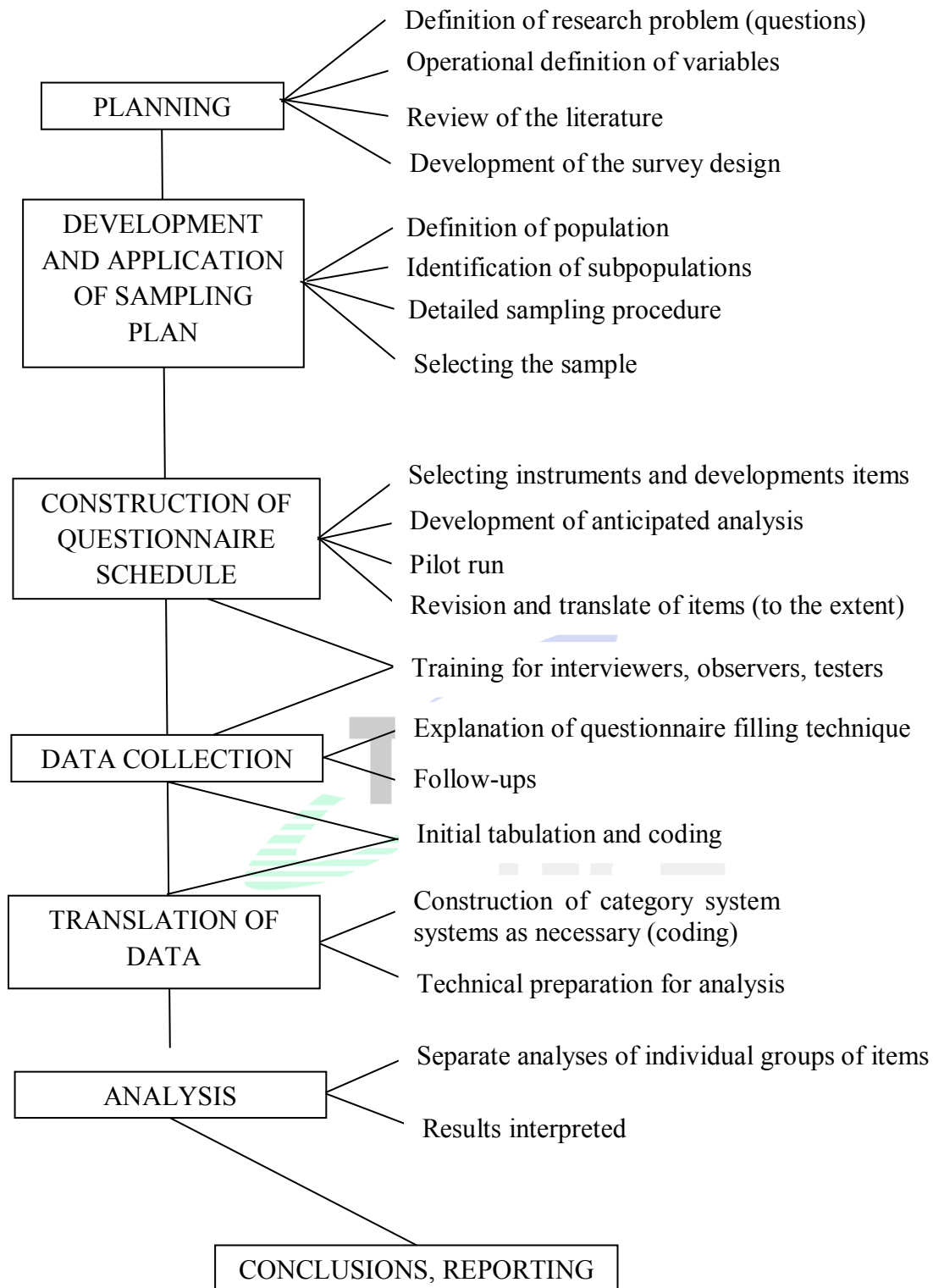
Figure 3.2 Steps in conducting a Survey (evaluation) study

B. Population and Sample

1. Population

Quantitative researchers attempt to discover something about a large group of individuals by studying a much smaller group. The larger group that they wish to learn about is called a population, and the smaller group they actually study is called a sample (McMillan & Schumacher, 1997). Best and Kahn (1993) addressed that the population is any group of individuals that have one or more characteristics in common that are of interest to the researcher. The population may be all the individuals of a particular type or a more restricted part of that group. The population in this study were all of the active 193 students at the Open University of Indonesia in Taiwan. All of the students at Indonesia Open University in Taiwan are Indonesian workers in Taiwan. Some of them were working as social welfare and some of them were working in industry.

2. Sampling and Participants

In this study, the researcher using a random sampling. A sample random sample involves what is called *probability sampling,* which means that every member of the population has a nonzero probability of being selected for the sample. In another words, all members of the population have the same chance of being included in the sample, subjects are selected from the population so that all members of the population have the same probability of being chosen (McMillan & Schumacher, 1997; Wiersma & Jurs, 2005).

In determining the number of participants in this study, Sample Size Calculator was used. Mostly researchers used the 95% confidence level and the confidence interval is 4. With 193 population, 95% confidence level, and confidence interval being 4, the sample size needed were 146 students. However, only 120 students completed the questionnaire.

C. Data Collection and Research Instrument

Data collection techniques are methods used to collect the necessary data. The data collection techniques used in this study are documentation and questionnaire. Sukardi (2003) states that the research instrument is a tool to obtain the necessary data when researchers have

stepped on the step of collecting information in the field. The researcher used a questionnaire as a research instrument.

1. Documentation (Reviewing Other Sources)

According to (Arikunto, 2010; Verma & Mallick, 1999), documentation is one way to obtain data from respondents, researchers may be possible to obtain information from written sources or documents already available. Documents, images, and artifacts are other types of data collection tools (Lodico, Spaulding, & Voegtle, 2006). There may be other sources of data that reflect on the research problem under study. These other sources often consist of records maintained on a routine basis by the organization in which the study is being conducted. Written resources such as records may provide data, and non-written sources such as videotapes, photographs, and artifacts also may provide data (Wiersma & Jurs, 2005). In this study, the documentation refers to data from the online database and printed document of Indonesia Open University about study programs, learning system. Learning method, evaluation method, courses, credits, and number of students.

2. Questionnaire

This study using open-ended items for gathering students' demographic characteristics, and for gathering data of students' perspectives using closed-ended questionnaire with multiple choice and dichotomous options. Closed-ended questions come in a multitude of forms but are defined by their need to have explicit options for a respondent to select from.

The categories of the questionnaire for students' perspective is showen in the table below, there are 10 categories with 49 *Likert scale* items before the pilot run, and 14 open-ended items for students' demographic information. All 49 items for students' perceptions of synchronous e-learning environment were positive statements. After the pilot run, 2 point *Likert scale* items were not valid. In this study, there were two ways of questionnaire distribution: 100 copies questionnaire were distributed in hard copy (printed version), and 30 of participants completed the hard copies, and 90 participants completed the online questionnaire.

Table 3.1 Category and item number of questionnaire before pilot run

No	Categories	Item number	Number of items
1	Students' demographic characteristics	1-14	14
2	Enhancement of a sense of connectivity	15-20	6
3	Prompt support and feedback	21-26	6
4	Learning strategies for synchronous e-learning	27-31	5
5	Perceived ease of use	32-37	6
6	Perceived usefulness	38-42	5
7	Time sessions	43-47	5
8	Technological issues	48-54	7
9	Competence	55-60	6
10	Learning content	61-63	3
Total			**63**

The printed questionnaire was distributed on May 8th, 2016, according to survey research permission letter from Indonesia Open University in Taiwan. On May 8th, 2016, the students at Indonesia Open University in Taiwan were taking their final exam, most of the students had no time to complete the questionnaire. Therefore, most of the students asked for the online questionnaire. The online questionnaires were shared on May 15th, 2016 and completed on June 22nd, 2016.

D. Research Instrument Test

1. Expert judgment

The questionnaire items were taken from several references and were slightly modified as needed. Several iterations were attempted before finalizing the survey. In developing the survey, before conducting pilot run, drafts of questions were revised based on the experts' analysis. In this study there are two experts: one is a lecturer at Graduate Institute of Technological and Vocational Education Department in National Taipei University of Technology, and another one is an instructor at Indonesia Open University in Taiwan.

2. Pilot run (try-out of items)

To establish instrument validity and reliability after the questionnaire items were revised based on the experts' analysis, the survey was pilot tested with 30 students at Indonesia Open University in Taiwan.

a. Validity test

Reliability and validity must be considered in establishing the appropriateness and usefulness of measurement instruments (Wiersma, 2005). To determine the validity of the questionnaire grains or items is to use Product Moment Correlation. Furthermore, the significant values are compared with r table at the significant level of 5%. If $r_{count} > r_{table}$, then the item is valid (Arikunto, 2010). r_{table} for questionnaire validity test of this survey is 0.361 (N = 30), and validity test using SPSS, there were 2 items (18 and 38) that were not valid.

Table 3.2 Validity of questionnaire items

Item	Categories	r_{test}	r_{table} 5%	Status
15		.527**	0.361	Valid
16		.496**	0.361	Valid
17	Enhancement of a sense of	.497**	0.361	Valid
18	connectivity	.344	0.361	Not valid
19		.680**	0.361	Valid
20		.663**	0.361	Valid
21		.794**	0.361	Valid
22		.756**	0.361	Valid
23	Prompt support and feedback	.718**	0.361	Valid
24		.380*	0.361	Valid
25		.500**	0.361	Valid
26		.811**	0.361	Valid
27		.496**	0.361	Valid
28		.768**	0.361	Valid
29	Learning strategies	.444**	0.361	Valid
30		.680**	0.361	Valid
31		.811**	0.361	Valid
32		.701**	0.361	Valid
33		.900**	0.361	Valid
34	Perceived ease of use	.700**	0.361	Valid
35		.848**	0.361	Valid
36		.700**	0.361	Valid
37		.814**	0.361	Valid
38		.326	0.361	Not valid
39	Perceived usefulness	.647**	0.361	Valid
40		.712**	0.361	Valid

43

41		.846**	0.361	Valid
42		.495**	0.361	Valid
43		.678**	0.361	Valid
44		.819**	0.361	Valid
45	Time sessions	.697**	0.361	Valid
46		.651**	0.361	Valid
47		.545**	0.361	Valid
48		.602**	0.361	Valid
49		.608**	0.361	Valid
50		.642**	0.361	Valid
51	Technological issues	.622**	0.361	Valid
52		.647**	0.361	Valid
53		.602**	0.361	Valid
54		.758**	0.361	Valid
55		.765**	0.361	Valid
56		.737**	0.361	Valid
57		.789**	0.361	Valid
58	Competence	.817**	0.361	Valid
59		.543**	0.361	Valid
60		.532**	0.361	Valid
61		.737**	0.361	Valid
62	Learning content	.789**	0.361	Valid
63		.817**	0.361	Valid

** Correlation is significant at the 0.01 level (2-tailed).
 * Correlation is significant at the 0.05 level (2-tailed).

b. Reliability test

According to Wiersma (2005), reliability means consistency of the instrument in measuring whatever it measures. It is the degree to which an instrument will give similar results for the same individuals at the different times. In the conceptual sense, an observed score can be seen as consisting of two parts: individual's "true" score, and "error" score. If score has large error component, reliability is low; but if there is a little error in the scores, reliability is high. In the educational measurement, it is desirable to obtain high reliabilities coefficients. Reliability coefficients can take on values of 0 to 1.0, inclusive. According to George (2003), a commonly accepted rule of thumb for describing internal consistency is as seen in Table 3.3.

Table 3.3 Reliability coefficient values

Cronbach's α	Internal consistency
α ≥ 0.9	Excellent
0.9 > α ≥ 0.8	Good
0.8 > α ≥ 0.7	Acceptable
0.7 > α ≥ 0.6	Questionable
0.6 > α ≥ 0.5	Poor
0.5 > α	Unacceptable

The Prompt support and feedback, learning strategies for synchronous e-learning, perceived ease of use, perceived usefulness, technological issues, competence, and learning content had high reliabilities, all Cronbach's α > .8. However, the enhancement of a sense of connectivity and time sessions had relatively low reliability, Cronbach's α < 8. For reliability of questionnaire categories and items can be seen in Table 3.4 and Table 3.5.

Table 3.4 Reliability of questionnaire categories

No	Categories	Mean	S.D.	Cronbach's α
1	Enhancement of a sense of connectivity	24.07	2.434	.796
2	Prompt support and feedback	25.47	2.849	.929
3	Learning strategies	20.47	2.596	.904
4	Perceived ease of use	24.13	3.256	.911
5	Perceived usefulness	20.63	2.141	847
6	Time sessions	20.33	2.916	.696
7	Technological issues	27.63	6.906	.972
8	Competence	23.30	5.260	.942
9	Learning content	11.83	2.692	.970

Table 3.5 Reliability of questionnaire items

Item	Categories	Mean	S.D.	Cronbach's α
15		3.83	.648	.756
16		4.00	.743	.747
17	Enhancement of a sense of	4.07	.450	.758
18	connectivity	4.00	.371	.783
19		3.97	.556	.744
20		4.20	.610	.796

21		4.13	.507	.923
22		4.07	.450	.913
23	Prompt support and feedback	4.50	.630	.918
24		4.27	.583	.914
25		4.37	.615	.914
26		4.13	.507	.916
27		4.00	.743	.894
28	Learning strategies	4.03	.615	.860
29		4.33	.606	.893
30		3.97	.556	.883
31		4.13	.507	.885
32		3.90	.607	.916
33		4.17	.747	.871
34	Perceived ease of use	4.00	.455	.914
35		4.10	.803	.887
36		3.90	.548	.890
37		4.07	.691	.880
38		4.20	.610	.833
39		4.00	.455	.805
40	Perceived usefulness	4.00	.371	.799
41		4.17	.648	.855
42		4.27	.583	.790
43		4.30	.794	.606
44		4.13	.629	.586
45	Time sessions	3.87	.681	.628
46		3.73	1.337	.757
47		4.30	.702.	.676
48		3.80	1.243	.964
49		3.90	1.094	.964
50		4.10	.995	.965
51	Technological issues	4.30	.837	.972
52		4.00	1.083	.963
53		3.83	1.177	.965
54		3.70	.988	.978
55		3.67	1.155	.926
56		3.87	.900	.920
57	Competence	4.03	.928	.913
58		3.93	.944	.918
59		3.73	1.112	.947
60		4.07	.907	.956
61		3.87	.900	.973
62	Learning content	4.03	.928	.937
63		3.93	.944	.955

E. Data Analysis

Analysis of the data focused on seven variables. There are six independent variables: age, gender, class level, major, work status, and learning strategies (daily study duration), and one dependent variable: students' perception. Statistical Package for the Social Sciences (SPSS) version 22 was used to perform the statistical analysis. To test statistical significant of the difference perceptions of synchronous e-learning environment when students are compared through their age, gender, class level and work status, independent t-test was performed. To test statistical significant of the difference perceptions of synchronous e-learning environment when students are compared through their major and learning strategies (daily study duration), One-Way ANOVA was performed.

Chapter 4

RESULT AND DISCUSSION

This chapter presents the result and discussion on students' demographic characteristics, the enrollment factors for students, and students' perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan.

A. Result

1. Demographic characteristics

Demographic data of 120 students at Indonesia Open University in Taiwan who took part in this study are described in the table below.

Table 4.1 Students' demographic characteristics

No	Demographic characteristics		Percentage	N
1	Job section	Industry	35%	120
		Social welfare	65%	
2	Age	Under 30 years	56.67%	120
		30 years and older	43.33%	
3	Gender	Female	74.17%	120
		Male	25.83%	
4	Class level	1st and 2nd year	55.83%	120
		3rd year and above	44.17%	
5	Work status	8 – 12 hours/day	45.83%	120
		More than 12 hours/day	54.17%	
6	Major	Management	49.17%	120
		English	25%	
		Communication	25.83%	
7	Learning strategies (daily study duration)	Less than or equal to 1 hour	32.5%	120
		More than 1 hour to 2 hours	37.5%	
		More than 2 hours	30%	

No			
		Friends	37.5%	
8	Information sources about Indonesian Open University in Taiwan	Internet	50%	120
		Printed publication	9.17	
		Indonesia Economic and Trade Office to Taipei (IETOT) or other Indonesian Organizations	3.33	

2. Enrollment factors

Based on data gathered, the enrollment factors for students are listed in table below.

Table 4.2 Factors that contributed to enrollment

No	Factor	All
1	Degree (education level)	78.3%
2	Future employment opportunities	69.1%
3	Work schedule	51.6%
4	Convenience	30.8%
5	Cost	25%
6	Flexible pacing for completing a program	23.3%
7	Recommendations from employer	0%

As seen the table 4.2, the first enrollment factor is the degree (education level). Degree or education level (78.3%), better occupation in the future (69.1%), and work schedule (51.6%) are the top three enrollment factors, while other factors less than 35% was chosen as enrollment factors (convenience 30.8%, cost 25%, flexible pacing for completing a program 23.3%, and recommendations from employer 0%). This finding totally contrasts with the yearly report by Noel-Levitz (2014). Based on the yearly report by Noel-Levitz (2014), convenience and flexible pacing for completing a program are the consistent top two enrollment factors. However, work schedule factor in this study corresponded to the yearly report by Noel-Levitz; it was the third factor of importance for students enroll. This finding shows that student participants' enrollment in the program in Taiwan was not due to the request from their employers to get a higher degree.

3. Students' general perceptions of synchronous e-learning environment

Table 4.3 Students' general perceptions of synchronous e-learning environment

	N	Minimum	Maximum	Mean	S. D.
Average enhancement of a sense of connectivity	120	2.00	5.00	3.85	.63
Average of prompt support and feedback	120	2.67	5.00	4.00	.62
Average of learning strategies	120	3.00	5.00	3.89	.53
Average of perceived ease of use	120	2.67	5.00	3.91	.58
Average of perceived usefulness	120	1.00	5.00	3.97	.61
Average of time sessions	120	2.20	5.00	3.78	.56
Average of technological issues	120	1.71	5.00	3.59	.69
Average of competence	120	2	5.00	3.81	.55
Average of learning content	120	1.67	5.00	3.83	.57
TOTAL Average	120	3.00	5.00	3.84	.41

As seen in table 4.3, students at Indonesia Open University in Taiwan generally have positive perceptions of synchronous e-learning environment; in other words, perception with synchronous e-learning was generally positive (ΣM=3.83). This finding corresponded to Yukselturk and Yildirim's (2008). This study using five point Likert scale: strongly agree" to "Strongly disagree" as a "5" to "1". Although mean score for some of the sub categories are less than total mean scores but they were still higher than 3.5. Based on learners' perceptions, the Indonesia Open University in Taiwan has good distance learning program. Table 4.3 shows that the highest mean score is on prompt support and feedback category (4 of 5), and the lowest mean score is on technological issues category (3.59 of 5). For other categories, the mean scores are between 3.81-3.97. Based on students' general perceptions, the synchronous e-learning environment at Indonesia Open University in Taiwan still need to be encouraged. The distribution histograms were provided to clearly understanding of the students' perceptions of synchronous e-learning environment at Indonesia Open University in Taiwan.
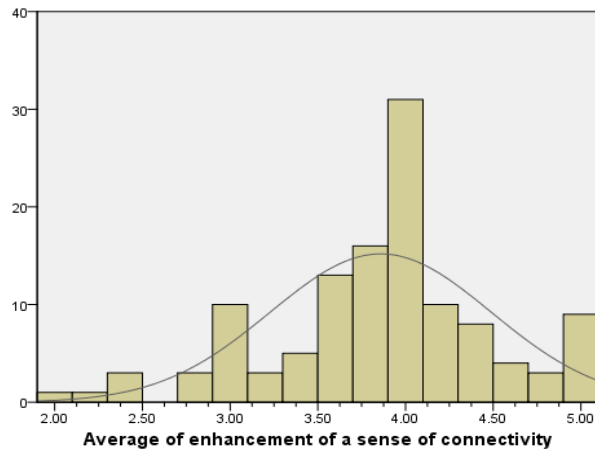
Figure 4.1 Average of enhancement a sense of connectivity

As seen in figure 4.1, the majority of students at Indonesia Open University in Taiwan was satisfied with synchronous e-learning environment, and they felt connected with other students and instructors in distance learning program. This finding shows that there were good social interactions in distance learning program at Indonesia Open University in Taiwan (Dabbagh, 2007; Perveen, 2016; Salmon, 2013).
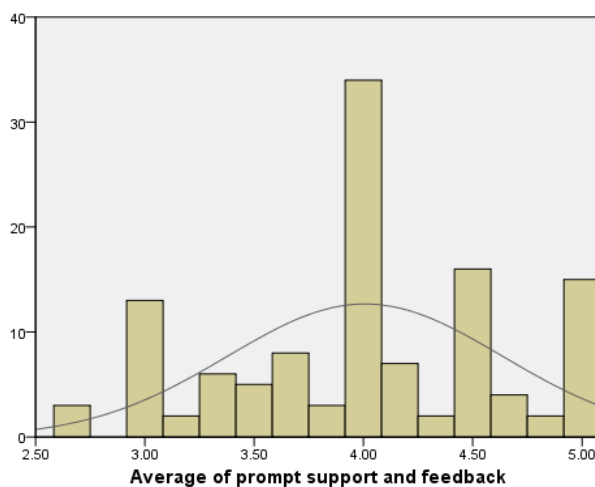
Figure 4.2 Average of prompt support and feedback

As seen in figure 4.2, the majority of students at Indonesia Open University in Taiwan received prompt support and feedback from instructors. The finding shows that the prompt support and feedback in distance learning program at Indonesia Open University were good interaction between students and instructors. Marks et al. (2005), found that student-instructor interactions are the strongest predictors of perceived learning. Several researchers such as Park and Bonk (2007) asserted the importance of instructors' supportive role and constant

interaction with students, as well as the collaboration between peer learners as most prominent ways for fostering learning in online contexts
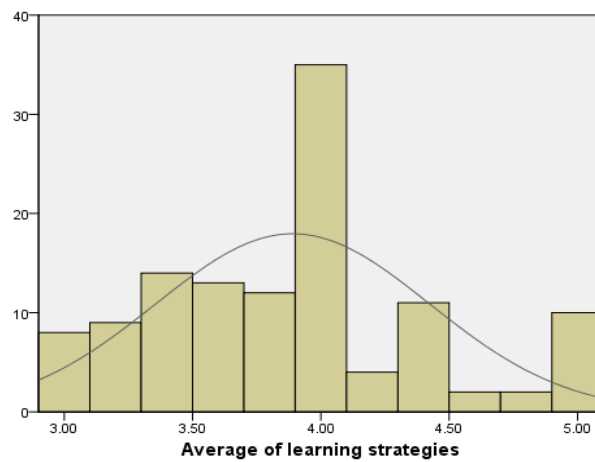
Figure 4.3 Average of learning strategies

Figure 4.3 shows that students at the Indonesia Open University in Taiwan have good learning strategies, such as: (1) learned the learning content according to previous and next topics; (2) reviewed their own projects as well as other team members projects (if available) to be discussed during the critique; and (3) prepared the feedback and suggestion. During the actual session, they (1) participated and active in the synchronous e-Learning session; (2) not hesitate to ask questions directly to instructors in synchronous e-Learning session; and (3) wrote down critique ideas and suggestion from other participants. After the actual session, they watched the recorded videos of synchronous e-Learning session after class
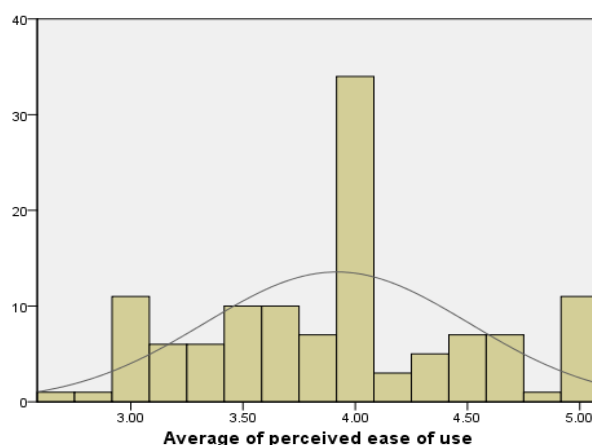
Figure 4.4 Average of perceived ease of use

As seen in figure 4.4, the majority of students at Indonesia Open University in Taiwan agree that synchronous e-learning platform they used was easy to use. This finding shows that majority of students had no difficulty in the synchronous e-learning environment.
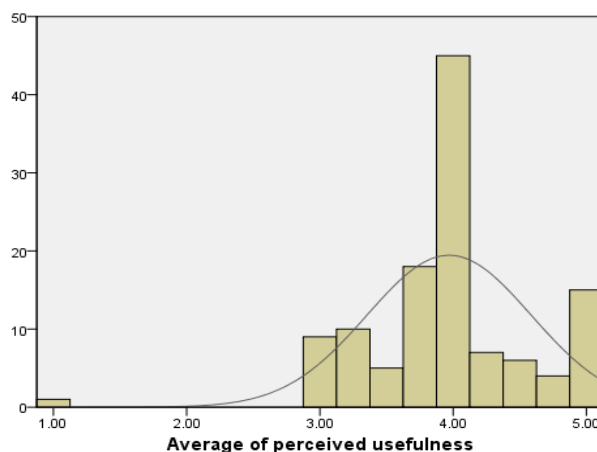
Figure 4.5 Average of perceived usefulness

As seen in figure 4.5, the majority of students at Indonesia Open University in Taiwan agree that synchronous e-learning platform they used was useful. This finding shows that synchronous e-learning is a good way to provide the possibility of distance learning at the Indonesia Open University in Taiwan.
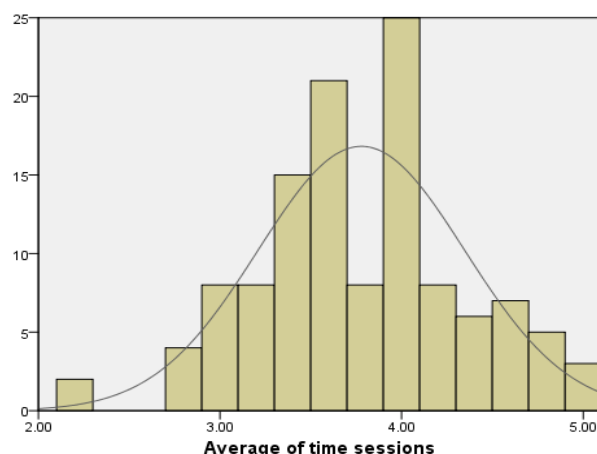
Figure 4.6 Average of time sessions

According to Park & Bonk (2007), time constraints and lack of reflection time is one of the disadvantages of synchronous e-learning, the available time for each session was about one hour. The time pressure sometimes led to superficial comments, not thoughtful feedback. As seen in figure 4.6, this study finding shows that a majority of students agree that they have

enough synchronous session time. This finding also identified that two hours was enough for synchronous e-learning sessions.
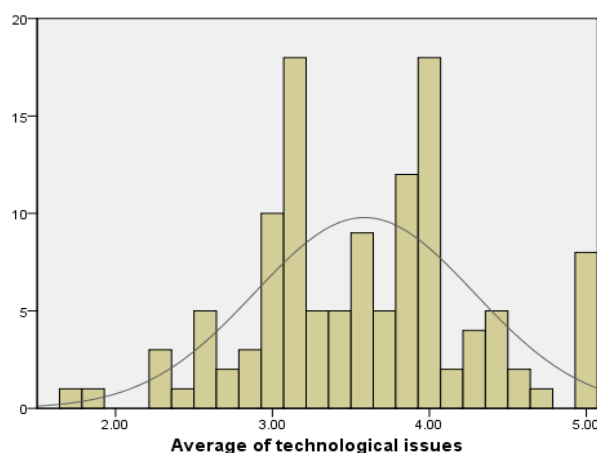
Figure 4.7 Average of technological issues

According to Park and Bonk (2007), there are disadvantage perceived of synchronous e-learning, such as network connection problems, students' network connection problems sometimes forced the students to be disconnected during the sessions, audio tool related issues, sometimes due to noise or echo occurring during the conferencing As seen in figure 4.7, a majority of students at Indonesia Open University in Taiwan have no technological issues.
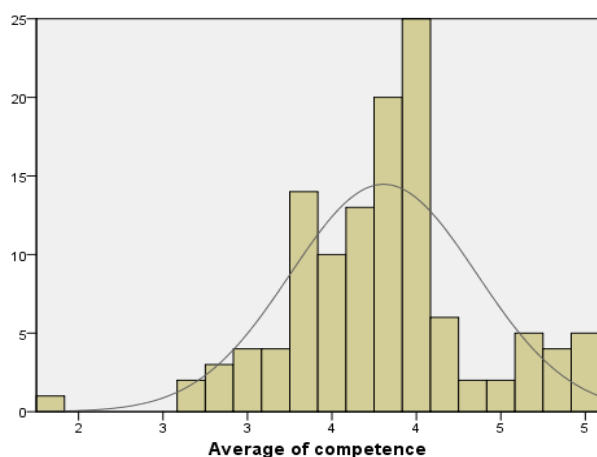
Figure 4.8 Average of competence

Figure 4.8 shows that students at Indonesia Open University in Taiwan generally had good competence in the synchronous e-learning environment. This finding shows that students' computer self-efficacy, and Internet self-efficacy was good.
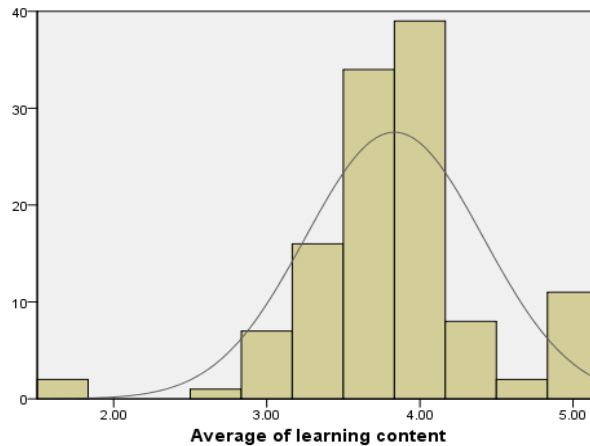
Figure 4.9 Average of learning content

As seen in figure 4.9, a majority of students at the Indonesia Open University in Taiwan agree that learning contents in distance learning program that was delivered by synchronous e-learning were useful and challenging. This finding shows that there were good student-learning content interactions.
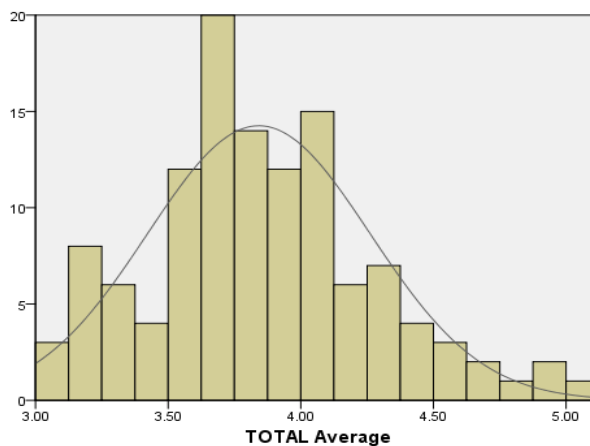
Figure 4.10 Students' general perception

Figure 4.10 shows that students' perceptions of synchronous e-learning environment were generally positive. Based on the sub-average (perception based on sub-categories) and total average (general perception), the synchronous e-learning environment at Indonesia Open University in Taiwan was good.

4. Students' perceptions of synchronous e-learning environment based on their age

Table 4.4 Students' perceptions of synchronous e-learning environment based on their age

	Age (year)	N	Mean	S.D.	Mean Difference	t	Sig
Average of enhancement of a sense of connectivity	< 30	68	3.82	.59	-.07	. -.631	.52
	≥ 30	52	3.90	.67			
Average of prompt support and feedback	< 30	68	4.00	.59	.00	01	.99
	≥ 30	52	4.00	.68			
Average of learning strategies	< 30	68	3.89	.50	.00	.03	.98
	≥ 30	52	3.88	.57			
Average of perceived ease of use	< 30	68	3.97	.56	.12	1.17	.24
	≥ 30	52	3.84	.61			
Average of perceived usefulness	< 30	68	3.98	.52	..03	.33	.73.
	≥ 30	52	3.94	.71			
Average of time sessions	< 30	68	3.86	.58	.19	1.92	.06
	≥ 30	52	3.66	.53			
Average of technological issues	< 30	68	3.68	.66	.22	1.79	.07
	≥ 30	52	3.45	.72			
Average of competence	< 30	68	3.94	.49	.30	3.07	.003*
	≥ 30	52	3.63	.57			
Average of learning content	< 30	68	3.94	.58	.26	2.48	.014*
	≥ 30	52	3.68	.54			
TOTAL Average	< 30	68	3.89	.41	.12	1.55	.112
	≥ 30	52	3.77	.42			

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

As seen in table 4.4, based on students' age, students generally have positive perceptions of synchronous e-learning. The mean scores ranged from 3.7 to 4. In other words, they still have positive perceptions of synchronous e-learning environment. When students compared through their age and questionnaire categories as seen in the table 4.4, they have positive perceptions of synchronous e-learning environment as well. However, students between ages 30 and older have negative perceptions for technological issues; older students have technological issues.

As seen in table 4.4, when students are compared by their age, there was no significant different in terms of students' overall perception of synchronous e-learning environment, *p* =

.112. According to this finding, then it could be concluded that for H1 (first hypothesis) the null hypothesis (H_0) is accepted.

However, on the sub-categories of perceived competence and learning content, there was a significant difference by age. Students between ages 29 and younger have significantly different perceptions on competence with students between ages 30 and older (p = .003). As seen in table 4.4, for competence students between ages 29 and younger have a higher mean score (M = 3.94) than students between ages 30 and older (M = 3.63). This finding shows that younger students had a tendency to perform better than older students, and this finding corresponded to Abdullah (2011), and is in contrast with Colorado and Eberle's (2010). Students between ages 29 and younger also have significantly different perceptions on learning content with students between ages 30 and older (p = .014). For learning content sub category students between ages 29 and younger have a higher mean score (M = 3.94) than students between ages 30 and older (M = 3.68).

5. Students' perceptions of synchronous e-learning environment based on their gender

Table 4.5 Students' perceptions of synchronous e-learning environment based on their gender

	Gender	N	Mean	S.D.	Mean Difference	t	Sig
Average of enhancement of a sense of connectivity	F	89	3.89	.64	.16	1.19	.23
	M	31	3.74	.58			
Average of prompt support and feedback	F	89	4.07	.60	.25	1.97	.051
	M	31	3.81	.65			
Average of learning strategies	F	89	3.95	.51	.23	2.14	.03*
	M	31	3.71	.55			
Average of perceived ease of use	F	89	4.00	.58	.31	2.65	.01**
	M	31	3.68	.52			
Average of perceived usefulness	F	89	4.00	.65	.15	1.19	.23
	M	31	3.85	.49			
Average of time sessions	F	89	3.82	.57	.17	1.44	.15
	M	31	3.65	.54			
Average of technological issues	F	89	3.60	.73	.08	.55	.57
	M	31	3.52	.59			
Average of competence	F	89	3.83	.59	.09	.96	.33
	M	31	3.74	.40			
Average of learning content	F	89	3.90	.59	.27	2.25	.02*
	M	31	3.63	.48			
TOTAL Average	F	89	3.89	.43	.18	2.16	.03*
	M	31	3.70	.35			

** Correlation is significant at the 0.01 level (2-tailed).

As seen in table 4.5, on total average, when students are compared through their gender, there was a statistical significant difference in perception of synchronous e-learning environment, p=.03. According to this finding, it could be concluded that the null hypothesis (H_0) is rejected. In another words, this finding corresponded to Lu and Chiou's (2010) study that gender significantly influenced the perceptions of predictors and students' satisfaction with e-learning system. On total average, female students have more positive perceptions (M = 3.89) than male students (M = 3.70). In other words, female students have higher satisfaction with synchronous e-learning environment.

On sub-average for enhancement of a sense of connectivity category, female students have higher mean (M = 3.89) score than male students (M = 3.74). This finding corresponded to González-Gómez, Guardiola, Rodríguez, and Alonso's (2012) and Lu and Chiou's (2010) studies. Females experience a richer, more connected, and more valuable online learning experience than males (Johnson, 2012).

As seen in table 4.5, for difference perceptions test based on their gender and questionnaire sub-categories, there were significant different perceptions on learning strategies, p = .03; perceived ease of use, p = .01; and learning content categories, p = .02. However, there were no significant difference in perceptions on other categories. On perceive of usefulness and perceive ease of use sub-average, females have a higher mean score than male students. This finding contrasts with Ong and Lai's (2006). As seen in the table 4.5, on the competence sub average, female students have a higher mean score (M = 3.83) than male students (M = 3.74), which contrast with Kay's (2008).

6. Students' perceptions of synchronous e-learning environment based on their class level

Table 4.6 Students' perceptions of synchronous e-learning environment based on their class level

	Class Level (year)	N	Mean	S.D.	Mean Difference	t	Sig
Average of enhancement of a sense of connectivity	1st - 2nd	67	3.96	.51	.16	2.07	.04*
	> 2nd	53	3.72	.73			
Average of prompt support and feedback	1st - 2nd	67	4.17	.56	.25	3.52	.001**
	> 2nd	53	3.78	.64			
Average of learning	1st - 2nd	67	3.95	.53	.23	1.44	.15

		N	M	SD			
strategies	> 2nd	53	3.81	.53			
Average of perceived ease of use	1st - 2nd	67	4.06	.54	.31	3.12	.002**
	> 2nd	53	3.73	.59			
Average of perceived usefulness	1st - 2nd	67	3.99	.68	.15	.47	.63
	> 2nd	53	3.93	.51			
Average of time sessions	1st - 2nd	67	3.89	.59	.17	2.59	.01**
	> 2nd	53	3.63	.49			
Average of technological issues	1st - 2nd	67	3.62	.74	.08	.64	.51
	> 2nd	53	3.53	.63			
Average of competence	1st - 2nd	67	3.86	.57	.09	1.17	.24
	> 2nd	53	3.74	.52			
Average of learning content	1st - 2nd	67	3.89	.49	.27	1.32	.18
	> 2nd	53	3.75	.66			
TOTAL Average	1st - 2nd	67	3.93	.40	.18	2.68	.008*
	> 2nd	53	3.72	.41			

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

In table 4.6 on total average, there was a significant different in students' perception of synchronous e-learning environment when they are compared by their class levels, p =.008. This finding corresponded to Lee (2007); there were remarkable differences among the group of students in different academic year or class level. According to this finding, it could be concluded that the null hypothesis (H_0) is rejected. On total average, the 1st to 2nd-year students have higher mean scores (M = 3.93) than students from 3rd and above (M = 3.72). Also on sub-average, for almost all categories, the 1st to 2nd-year students have higher means score than students from 3rd and above. This finding is in contrast to Lee (2007).

As seen on sub-average, when students are compared by their class level, there were significant different perceptions of synchronous e-learning environment on enhancement of a sense of connectivity sub-category (p = .04); prompt support and feedback sub category (p = .001); perceived ease of use sub-category (p = .002); and on time sessions sub-category (p = .01).

7. Students' perceptions of synchronous e-learning environment based on their work status

Table 4.7 Students' perceptions of synchronous e-learning environment based on their work status

	Work Status (hours/day)	N	Mean	S.D.	Mean Difference	t	Sig
Average of enhancement of a sense of connectivity	8 - 12	55	3.80	.61	-.09	-.81	.41
	> 12	65	3.90	.64			
Average of prompt support and feedback	8 - 12	55	3.96	.57	. -.07	-.69	.49
	> 12	65	4.04	.67			
Average of learning strategies	8 - 12	55	3.80	.46	-.15	-1.64	.10
	> 12	65	3.96	.58			
Average of perceived ease of use	8 - 12	55	3.86	.50	-.09	-.88	.38
	> 12	65	3.96	.64			
Average of perceived usefulness	8 - 12	55	3.96	.47	-.001	-.01	.99
	> 12	65	3.96	.71			
Average of time sessions	8 - 12	55	3.81	.54	.07	.64	.52
	> 12	65	3.74	.58			
Average of technological issues	8 - 12	55	3.57	.65	-.03	-.20	.83
	> 12	65	3.59	.74			
Average of competence	8 - 12	55	3.77	.47	. .07	-.65	.51
	> 12	65	3.84	.61			
Average of learning content	8 - 12	55	3.77	.51	-.11	-1.00	.31
	> 12	65	3.88	.63			
TOTAL Average	8 - 12	55	3.80	.32	-.06	-.81	.41
	> 12	65	3.86	.48			

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

As seen in table 4.7, on total average, students who had work status of 8 hours up to 12 hours, there was no significant difference in their perceptions of synchronous e-learning environment as compared to students who had work status of more than 12 hours/day (p =

.41). According to this finding, it could be concluded that for the fourth hypothesis, the null hypothesis (H_0) is accepted. This finding corresponded to Colorado and Eberle's (2010), and is in contrast to Colorado and Eberle's (2010). They found that the number of hours worked for pay per week did not significantly affect academic performance in the online course.

On sub-average, there were no significant different perceptions of synchronous e-learning environment when students are compared by their work status; however, on total average the students who work more have higher mean scores ($M = 3.86$) than those who had lower working hours ($M = 3.80$), and this finding corresponded to House et al. (2007).

8. Students' perceptions of synchronous e-learning environment based on their major

Table 4.8 Students' perceptions of synchronous e-learning environment based on their major

Dependent Variable	Major	N	M	(I) Major	(J) Major	Mean Different (I-J)	Sig.
Average of enhancement of a sense of connectivity	Management (M)	59	4.07	M	E	.22	.22
					C	.61	.00**
	English (E)	30	3.84	E	M	-.22	.22
					C	.38	.03*
	Communication (C)	31	3.45	C	M	-.61	.001**
					E	-.38	.03*
Average of prompt support and feedback	Management (M)	59	4.17	M	E	.11	.68
					C	.50	.001**
	English (E)	30	4.05	E	M	-.11	.69
					C	.38	.04*
	Communication (C)	31	3.66	C	M	-.50	.001**
					E	-.39	.04*
Average of learning	Management (M)	59	4.004	M	E	.21	.18
					C	.38	.01**

strategies	English (E)	30	3.83	E	M	-.21	.18
					C	.16	.47
	Communication (C)	31	3.66	C	M	-.37	.01**
					E	-.16	.47
	Management (M)	59	4.10	M	E	.24	.16
					C	.48	.001**
Average of perceived ease of use	English (E)	30	3.86	E	M	-.24	.16
					C	.23	.25
	Communication (C)	31	3.62	C	M	-.48	.00**
					E	-.23	.25
	Management (M)	59	4.11	M	E	.16	.47
					C	.40	.01**
Average of perceived usefulness	English (E)	30	3.95	E	M	-.16	.47
					C	.24	.29
	Communication (C)	31	3.70	C	M	-.40	.01**
					E	-.24	.29
	Management (M)	59	3.92	M	E	.19	.31
					C	.35	.02*
Average of time sessions	English (E)	30	3.73	E	M	-.19	.31
					C	.16	.51
	Communication (C)	31	3.56	C	M	-.35	.02*
					E	-.16	.51
	Management (M)	59	3.64	M	E	.25	.27
					C	-.02	.99
Average of technological issues	English (E)	30	3.39	E	M	-.25	.27
					C	-.27	.31

		N	Mean				
	Communication (C)	31	3.66	C	M	.02	.99
					E	.27	.31
Average of competence	Management (M)	59	3.89	M	E	.22	.20
					C	.10	.70
	English (E)	30	3.67	E	M	-.22	.20
					C	-.12	.70
	Communication (C)	31	3.78	C	M	-.10	.70
					E	.12	.70
Average of learning content	Management (M)	59	3.94	M	E	.18	.39
					C	.25	.14
	English (E)	30	3.77	E	M	-.18	.39
					C	.08	.87
	Communication (C)	31	3.69	C	M	-.25	.14
					E	-.08	.87
TOTAL Average	Management (M)	59	3.98	M	E	.20	.07
					C	.33	.001**
	English (E)	30	3.77	E	M	-.20	.07
					C	.13	.45
	Communication (C)	31	3.64	C	M	-.33	.001**
					E	-.13	.45

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

As seen in table 4.8 on total average, there was a significant difference in perception between Management students and Communication students, $p = .001$. According to this finding, it could be concluded that the null hypothesis (H_0) is rejected. In other words, this finding corresponded to House, Weldon, and Wysocki (2007). However, there was no significant difference in perception between Management students and English students, $p = .07$. On total average, table 4.8 also shows that there was no significant different perception

between English students and Communication students, $p = .45$. On total average, finding shows that Management students' mean scores were higher than English and Communication students' mean scores.

As seen in the table 4.8, for difference perceptions test based on their major and questionnaire categories, there were significant difference in perceptions for: (1) enhancement of a sense of connectivity categories between Management students' perception and Communication students' perception ($p = .000$), and between English students' perception and Communication students' perception ($p = .03$); (2) prompt support and feedback between Management students' perception and Communication students' perception ($p = .001$), and between English students' perception and Communication students' perception ($p = .04$); (3) learning strategies between Management students' perception and Communication students' perception ($p = .01$); (4) perceived ease of use between Management students' perception and Communication students' perception ($p = .001$); (5) perceived usefulness between Management students' perception and Communication students' perception ($p = .01$); and (6) time sessions between Management students' perception and Communication students' perception ($p = .02$). However, there were no significant differences for other multiple comparisons for all major.

9. Students' perceptions of synchronous e-learning environment based on their learning strategies (daily study duration)

Table 4.9 Students' perceptions of synchronous e-learning environment based on their learning strategies (daily study duration)

Dependent Variable	Daily Study Duration (hour)	N	M	(I) Study Duration	(J) Study Duration	Mean Different (I-J)	Sig.
Average of enhancement of a sense of connectivity	≤ 1	39	3.78	≤ 1	1 ≤ 2	-19	.35
					> 2	.001	1.00
	1 ≤ 2	45	3.98	1 ≤ 2	≤ 1	-20	.35
					> 2	.20	.37
	> 2	36	3.78	> 2	≤ 1	-.001	1.00
					1 ≤ 2	-.19	.37
Average of prompt	≤ 1	39	3.77	≤ 1	1 ≤ 2	-39	.02*
					> 2	-31	.09

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Variable	Group (I)	N	Mean	Group (I)	(J)	Mean Diff	Sig.
support and feedback	1 ≤ 2	45	4.15	1 ≤ 2	≤ 1	.38	.02*
					> 2	.07	.85
	> 2	36	4.08	> 2	≤ 1	.30	.09
					1 ≤ 2	-.07	.85
Average of learning strategies	≤ 1	39	3.78	≤ 1	1 ≤ 2	-.11	.64
					> 2	-.21	.21
	1 ≤ 2	45	3.89	1 ≤ 2	≤ 1	.10	.65
					> 2	-.10	.67
	> 2	36	4.00	> 2	≤ 1	.21	.22
					1 ≤ 2	.11	.67
Average of perceived ease of use	≤ 1	39	3.73	≤ 1	1 ≤ 2	-.31	.054
					> 2	-.22	.25
	1 ≤ 2	45	4.04	1 ≤ 2	≤ 1	.31	.054
					> 2	.09	.80
	> 2	36	3.96	> 2	≤ 1	.22	.25
					1 ≤ 2	-.09	.80
Average of perceived usefulness	≤ 1	39	3.79	≤ 1	1 ≤ 2	-26	.15
					> 2	-25	.20
	1 ≤ 2	45	4.05	1 ≤ 2	≤ 1	.26	.15
					> 2	.01	.20
	> 2	36	4.05	> 2	≤ 1	.25	.20
					1 ≤ 2	-.01	.20
Average of time sessions	≤ 1	39	3.59	≤ 1	1 ≤ 2	-.25	.11
					> 2	-.31	.06
	1 ≤ 2	45	3.84	1 ≤ 2	≤ 1	.25	.12
					> 2	-.05	.10
	> 2	36	3.90	> 2	≤ 1	.31	.06
					1 ≤ 2	.05	.90
Average of technological issues	≤ 1	39	3.53	≤ 1	1 ≤ 2	-.08	.87
					> 2	-.07	.91
	1 ≤ 2	45	3.61	1 ≤ 2	≤ 1	.08	.87
					> 2	.01	.99
	> 2	36	3.60	> 2	≤ 1	.07	.91
					1 ≤ 2	-.01	.99

		N	Mean				
Average of competence	≤ 1	39	3.68	≤ 1	1 ≤ 2	-.25	.10
					> 2	-.11	.65
	1 ≤ 2	45	3.93	1 ≤ 2	≤ 1	.25	.10
					> 2	.14	.52
	> 2	36	3.79	> 2	≤ 1	.12	.65
					1 ≤ 2	-.14	.53
Average of learning content	≤ 1	39	3.61	≤ 1	1 ≤ 2	-.33	.02*
					> 2	-.31	.06
	1 ≤ 2	45	3.95	1 ≤ 2	≤ 1	.33	.02*
					> 2	.02	.98
	> 2	36	3.93	> 2	≤ 1	.31	.06
					1 ≤ 2	-.02	.98
TOTAL Average	≤ 1	39	3.70	≤ 1	1 ≤ 2	-.24	.03*
					> 2	-.19	.13
	1 ≤ 2	45	3.93	1 ≤ 2	≤ 1	.23	.03*
					> 2	.04	.88
	> 2	36	3.89	> 2	≤ 1	.19	.13
					1 ≤ 2	-.04	.88

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

According to data analysis result, as seen in table 4.9, students have positive perception of synchronous e-learning environment. As seen in the table 4.8, when the students are compared through their majors, students also a have positive perception of synchronous e-learning environment, the mean score is higher than 3.7. The mean score of students who had daily study duration more than 1 hour up to two hours is higher than the mean score of students who had daily study duration more than two hours. This finding corresponded to Lim and Morris (2009).

On total average in table 4.9, there was significant difference in perception between students who had daily study duration less than or equal to one hour and those who had daily study duration more than one hour up to two hours ($p = .003$). This finding corresponded to House, Weldon, and Wysocki (2007). According to this finding, it could be concluded that the null hypothesis (H_0) is rejected. However, there were no significant difference in perceptions between those who had daily study duration less than or equal to one hour and students who

had daily study duration more than two hours (p =.13), and between those who studied more than one hour up to two hours and those who studied more than two hours (p =.88).

On sub average in the table 4.9, there were significant difference in perceptions for: (1) prompt support and feedback categories between perception of students who had daily study duration less than or equal to one hour and those who had daily study duration more than one hour up to two hours (p = .02); and (2) learning content between students who had daily study duration less than or equal to one hour and those who had daily study duration more than one hour up to two hours (p = .02). However, there were no significant differences for other multiple comparisons for all learning strategies (daily study duration) categories.

B. Discussion

This section discussed about students' demographic characteristics, enrollment factors and students' general perceptions of synchronous e-learning environment based on their demographic characteristics.

These findings show that the majority (65%) of students are working in social welfare section. Approximately fifty-six percent (55.6%) of the students were between the ages of 29 or younger. This finding corresponded to the findings of Kolb (2005), Colorado and Eberle (2010) and Tallent-Runnels et al. (2006). They found that the majority of online learners were between the ages of 30 years old or younger. More than 70% of students are female. This finding corresponded to yearly report by Noel-Levitz. According to the yearly report by Noel-Levitz, the demographics report section of the readiness scale reveals that the participants in their study, more than 60% of online learners are female. In the same line, Kolb (2005) also found that more than 50% were female. For class level, 55% of the students were between the class level of 1st and 2nd year. This finding corresponded to yearly report by Noel-Levitz. As seen in the yearly report by Noel-Levitz (2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014), the majority of online learners were between the class level of 1st and 2nd year. These findings are in accordance with an increasing number of online students who took online learning. In work status section of this study, it is difficult to understand the students' work status data. Fifty-four percent of the students are working for more than 12 hours per day, and working status is corresponded to their job section; those who work in social welfare section had longer working hours. Approximately forty-nine percent (49.1%) of the students are studying in Management program (25% in English program, and 25.8% in

Communication program). This finding shows that Management program is the favorite amongst study programs at Indonesia Open University in Taiwan. For learning strategies (daily study duration), the majority (37.5%) of students are studying for more than 1 hour to 2 hours per day, 32.5% of students are studying for less than or equal to 1 hour per day, and 30% of students are studying for more than 2 hours per day. As seen in the table 4.1, the majority of students got the information about Indonesia Open University in Taiwan from their friends and or from the Internet.

Findings show that Indonesian workers who are studying at Indonesia Open University in Taiwan thought that education degree is the way to reach a better future. This finding is in accordance to Wanat, Vangulik, Pfeiffer, and Gulik (1999), the more education a person has, the better his or her chances are of moving up the career ladder.

Degree or education level (78.3%), better occupation in the future (69.1%), and work schedule (51.6%) are the top three enrollment factors. While other factor less than 35% was chosen as enrolment factors (convenience 30.8%, cost 25%, flexible pacing for completing a program 23.3%, and recommendations from employer 0%). This finding totally contrast with yearly report by Noel-Levitz (2014). Based on yearly report by Noel-Levitz (2014), convenience and flexible pacing for completing a program are the consistent top two enrollment factors. However, work schedule factor in this study corresponded to yearly report by Noel-Levitz (2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014), it was a third factor of importance for students enroll.

Table 4.10 Students' general perceptions of synchronous e-learning environment based on their demographic characteristics

Independent variables		N	Mean	Dependent variable
Age	< 30	68	3.89	$p = .112$
	≥ 30	52	3.77	
Gender	Female	89	3.89	$p = .03*$
	Male	31	3.70	
Class level	1st - 2nd	67	3.93	$p = .008*$
	> 2nd	53	3.72	
Work status	8 - 12	55	3.80	$p = .41$
	> 12	65	3.86	

	Management	59	3.98	Management - English $p = .07$
Major	English	30	3.77	English - Communication $p = .45$
	Communication	31	3.64	Communication-Management $p = .001**$
Learning strategies or daily study duration (hour)	≤ 1	39	3.70	$\leq 1 - 1 \leq 2$ $p = .03*$
	$1 \leq 2$	45	3.93	$1 \leq 2 - > 2$ $p = .88$
	> 2	36	3.89	$> 2 - \leq 1$ $p = .13$
General perception	(all participants)	120	3.84	

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Based on students' age, they have positive perception of the overall synchronous e-learning environment. When students are compared by their age and the sub components of synchronous e-learning, their perception was positive as well. The finding shows that for enhancement of a sense of connectivity, students between the ages of 29 years or younger had means score of above 4, and for prompt support and feedback, students between the ages of 30 years or older had means score of above 4. However, for technological issues category, students between the ages of 30 years or older had means score under 3.5. In other words, students between the ages of 30 years or older had negative perception while students between the ages of 29 years or younger had positive perception. For other categories students had lower mean scores but they are still above 3.5 ranging 3.6 to 3.9. As seen in the table 4.4, for difference perceptions test based on their age and questionnaire categories, there were no significant different perceptions for enhancement of a sense of connectivity, prompt support and feedback, learning strategies, perceived ease of use, perceived usefulness, time sessions, and technological issues sub categories. For competence and learning content sub categories there were significant different perceptions. For competence category, students between the ages of 29 years or younger had means score 3.94, and students between the ages of 30 years or older had means score 3.63. For learning content category, students between the ages of 29

years or younger had means score 3.95, and students between the ages of 30 years or older had means score 3.6859. Based on this finding, it could be concluded that students at Indonesia Open University in Taiwan generally have positive perception of synchronous e-learning environment, and they have difference competence and perceptions of learning content. These findings shown that students between the ages of 29 years or younger had higher means score than students between the ages of 30 years or older. This finding corresponded to Abdullah (2011).

As seen in the table 4.10, female and male students generally have positive perception of synchronous e-learning environment, the mean score of female students is 3.89, and the mean scores of male students is 3.70. As seen in the table 4.5, when the students are compared through their gender and questionnaire categories, students also have positive perceptions of synchronous e-learning environment. For difference perceptions test based on their gender without questionnaire categories as seen in table 4.10, there were significant different perceptions of synchronous e-learning environment. This finding corresponded to Lu & Chiou (2010), gender significantly influenced the perceptions of predictors and students' satisfaction with e-learning system. Based on their gender and questionnaire categories, there were significant different perceptions for learning strategies, perceived ease of use, and learning content categories. However, there were significant different perceptions for other sub categories.

As seen in the tables 4.6 and 4.10, when students are compared through their class level, they have positive perception of the overall synchronous e-learning environment. Although the mean score is under 4, but still above 3.7. Almost for all categories, the 1st to 2nd year students have higher means score than students from 3rd year and above. This finding contrast to Lee (2007). For difference perceptions test based on their class level without questionnaire categories, there was significant different perception of synchronous e-learning environment. This finding corresponded to Lee (2007), there were remarkable differences among the group of students in difference academic year or class level. For difference perceptions test based on their class level and questionnaire categories, there were significant different perception for enhancement of a sense of connectivity, prompt support and feedback, perceived ease of use, and time sessions categories. However, there were no significant different perception for other categories. When the students compared through their work status and questionnaire categories, students also have positive perception of

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synchronous e-learning environment. For difference perceptions test based on their work status without questionnaire categories there was significant different. This finding corresponded to House et al. (2007).

As seen in the tables 4.7 and 4.10, students generally have positive perception of synchronous e-learning environment when they are compared through their work status, the mean scores of students who had 8 to 12 hours work duration per day is 3.80, and the mean scores of students who go to work more than 12 hours per day is 3.86. As seen in the table 4.7, on sub average and total average, students who had work status 8 hours up to 12 hours have no different perceptions of synchronous e-learning environment and those who had work status more than 12 hours/day, $p = .41$. Lu and Chiou (2010) found that job status has a significant influence on the perceptions of predictors and e-learning satisfaction. Although in the present study, there were no significant difference in perceptions when students are compared by their working status, however on total average the students who work more perceive synchronous e-learning more positively ($M = 3.86$) than those who had lower working hours ($M = 3.80$), and this finding corresponded to House et al. (2007).

Based on students' major, the students generally have positive perceptions of the overall synchronous e-learning environment. There was a significant difference between Management students' perception and Communication students' perception, which corresponded to House, Weldon, and Wysocki's (2007) findings. However, there were no significant different perceptions between Management students' perception and English students' perceptions; and English students' perceptions and Communication students' perceptions. For difference perceptions test based on their major and questionnaire categories, there were significant different perceptions for: (1) enhancement of a sense of connectivity categories between Management students' perception and Communication students' perception, also for English students and Communication students; (2) prompt support and feedback between Management students' perception and Communication students' perception; and between English students' perception and Communication students' perception; (3) learning strategies between Management students' perception and Communication students' perception; (4) perceived ease of use between Management students' perception and Communication students' perception; (5) perceived usefulness between Management students' perception and Communication students' perception; and (6)

time sessions between Management students' perception and Communication students' perception.

As seen in the table 4.9, when the students are compared through their learning strategies (daily study duration), students generally have positive perception of synchronous e-learning environment; the mean score is higher than 3.7. Based on total average, the mean score of students who had daily study duration more than 1 hour up to two hours is higher than mean score of students who had daily study duration more than two hours, which corresponded to Lim and Morris's (2009) findings. The mean score of students who had daily study duration less or equal to one hour is lower than mean score of students who had daily study duration more than one hour. For difference perceptions test based on their learning strategies (daily study duration) without questionnaire categories, there were significant different perceptions between perception of students who had daily study duration less than or equal to one hour and perception of students who had daily study duration more than one hour up to two hours; and between perception of students who had daily study duration more than two hours and perception of students who had daily study duration less than or equal to one hour, which corresponded to House, Weldon, and Wysocki's (2007) findings. However, there were no significant differences perceptions between those who had daily study duration less than or equal to one hour and students who had daily study duration more than two hours. For difference perceptions test based on their learning strategies (daily study duration) and questionnaire categories, there were significant different perceptions for: (1) prompt support and feedback between perception of students who had daily study duration less than or equal to one hour and perception of students who had daily study duration more than one hour up to two hours; and (2) learning content between perception of students who had daily study duration less than or equal to one hour and perception of students who had daily study duration more than one hour up to two hours. However, there were no significant difference in perceptions for other multiple comparisons for all categories.

Based on this study findings, it could be concluded that students at Indonesia Open University perceived positively with synchronous e-learning environment. Although some researcher such as Kusumo et al. (2012) found that most of the Indonesian students in Indonesia were still not familiar with e-learning and had low independence learning level, distance learning programs using synchronous e-learning environment could be a success in Indonesia if Indonesia has better Internet network and electricity grid. In addition, Indonesia

should have greater development Information and Communication Technology as Taiwan has (Akamai, 2015a, 2015b).

Chapter 5

CONCLUSIONS, SUGGESTIONS, LIMITATIONS AND FUTURE RESEARCH

A. Conclusions

This study has examined distance learners' demographic characteristics, factors that contributed to enrollment, and learners' perceptions of synchronous e-learning. The learners' demographic characteristics data showed that majority of students are female, and female learners have longer working hours than male learners. The findings showed that students who worked more would be more likely to prefer online distance learning. And the reasons may be that synchronous delivery modes can provide a stronger sense of connection among participants (Park & Bonk, 2007; Yamagata-Lynch, 2014) and that females are more communication-oriented Internet users, seeking interaction with others, while males were more exploration oriented in their use (Tsai & Tsai, 2010). According to the results, students' most favorite of study program at Indonesia Open University in Taiwan was the Management program.

Students at Indonesia Open University in Taiwan have positive perceptions toward synchronous e-learning environment. Based on learners' perceptions, the Indonesia Open University in Taiwan offers good distance learning programs. Findings show that there were significant differences perception when students are compared through their gender, class level, major (between Management and Communication), and learning strategies or daily study duration (between students who had daily study duration for less than or equal to one hour and students who had daily study duration of more than one hour to two hours, also between students who had daily study duration for more than two hours and students who had daily study duration for less than or equal to one hour). However, there were no significant differences on students' perceptions when students are compared though their age and their work status. However, with questionnaire categories there were significant differences on students' perceptions comparing their gender, class level, work status, major, and learning strategies (daily study duration).

B. Suggestions

1. Findings showed that younger students have more positive perception of learning content than older students. Younger students also perceive themselves to have better competence than older students see themselves. Therefore, learning content design shall take age into consideration and more support is needed to increase older students' competence.

2. This study finding showed that female students have generally more positive perceptions of synchronous e-learning environment than male. Female students have better learning strategies and have more positive perception of ease of use than male students, instructors should pay more attention to male students to facilitate their online learning experience.

3. The results showed that that students from lower class level have more positive perceptions of synchronous e-learning environment than students from higher class level. The Indonesia Open University in Taiwan should pay more attenetion to students from higher class level. Students from higher class level needs interativity, prompt support and feedback. Futhermore, students from higher class level needs skill training as well.

4. When students are compared by their major, findings showed that students who studied in Management program have more positive perceptions of synchronous e-learning environment than students who studied in Communication program, and also they have more positive perceptions of synchronous e-learning environment than student who studied in English proram. Therefore, the Indonesia Open University in Taiwan should look into the Communication program and English program and see how the synchronous e-learning experience can be more inviting and engaging.

5. In addition, the results suggest that the majority of students got the information about Indonesia Open University in Taiwan from their friends and the Internet. Therefore, to increase the number of students, the Indonesia Open University should do more promotion to Indonesian workers in Taiwan using printed publications. Furthermore, Indonesia Economic and Trade Office to Taipei (IETOT) or other Indonesian Organizations can provide more promotions.

C. Limitations

The results of the study are limited by data collecting tools. More open-ended items are needed to clearly understand students' perspectives on sub categories, and to clearly understand about enrollment factors.

There other issues during collecting the data, such as:

a. Some students did not complete the questionnaire, some of students does not like to be surveyed.

b. The printed questionnaire distribution was not effective. The printed questionnaire of this study could not be directly distributed. The questionnaire was distributed by the Instructors and staff at Indonesia Open University in Taiwan. The main reason was timing conflicts; students were having their final exam at same time of the data collection.

D. Future research

Based on this study findings, for future research the survey should be obtain more in depth data gathering to examine information about enrollment factors, and learners' perceptions of synchronous e-learning more clearly. For future research, the factors that contributed to major or study program need to be surveyed to make sure the factors of difference number of students in each major or study program.

According to findings of this study, there are some significant difference perceptions for some multiple comparisons for some and or all of categories, therefore for future research on the students' perceptions through qualitative research is suggested to go into details of the differences and reasons of their perception, and to examine the influencing factors on distance learners' perceptions.

Research on instructors' perception of synchronous e-learning environment at Indonesia Open University in Taiwan need to be done to enhance our understanding about the Indonesian distance learning program in Taiwan. In addition, research on distance learners and instructors' perception of synchronous e-learning environment of all of the Indonesia distance learning institutions in Taiwan such as equality school of Indonesia in Taiwan, also known as C package school *(kesetaraan paket C)* is strongly suggested.

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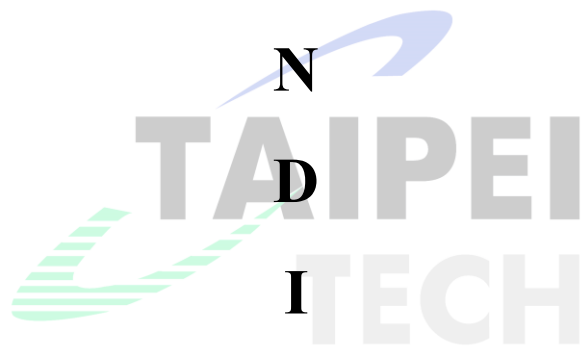
APPENDICES

Lucky No:
Date:

Questionnaire

Dear participants,

I am a master student in National Taipei University of Technology (Taipei Tech). I am on writing process of survey research about the Synchronous E-Learning system for my thesis. This questionnaire is a gathering data tool, not affect your academic issues. Please feel free to fill-up this questionnaire in accordance with the instructions provided.

Note: Synchronous e-Learning system in this questionnaire includes WizIQ, BigBluebutton, and Skype for Business/Lync.

A. Students' Demographic characteristics

No	Item	Response
1	Class level	
2	Gender	□ Male □ Female
3	Working time	Hours/day
4	Off day	Day(s)/month
5	Age	Years old
6	Place in Taiwan	City
7	Major	□ Management □ English (translator) □ Communication
8	Job sector	□ Productive industries □ Social welfare
9	Study background	□ High school □ Diploma □ Paket C (equality) □ Bachelor

10. I have been in Taiwan for ….. (Months).

11. The enrollment factors indicated in descending order of importance for you. ((Please numbering in the available space according to your choice).

   □   Degree (take higher education level)

   □   Convenience

   □   Work schedule

- ☐ Flexible pacing for completing a program
- ☐ Program requirements
- ☐ Cost
- ☐ Future employment opportunities

12. I know the information about Open University from…
- ☐ Friends
- ☐ Internet
- ☐ Printed publication
- ☐ Indonesia Economic and Trade Office to Taipei (IETOT) or other Indonesian Organizations

13. How long each day you currently dedicate to learning (preparation before sessions)? (Except class time).
- ☐ 0 – 60 minutes
- ☐ 61- 120 minutes
- ☐ 121- 180 minutes
- ☐ More than 180 minutes

14. What kind of devices did you used to access the online learning? (Please select all that apply)
- ☐ Desktop (PC)
- ☐ Laptop
- ☐ Cell phone
- ☐ Tablet

B. Enhancement of a sense of connectivity

15. There are good interactions between instructor and students in synchronous e-Learning sessions.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

16. There are good learner-content interactions in synchronous e-Learning sessions.
- ☐ Strongly agree
- ☐ Agree

- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

17. With synchronous e-learning system, distance learning activity is effective and engage instructors and students.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

18. With synchronous e-learning system, distance learning activity is effective and engage between students and other students.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

19. I feel emotionally connected with Instructors and other students in synchronous e-learning sessions.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

20. I feel more comfort to discuss in synchronous e-Learning session than face-to-face.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

C. Prompt support and feedback

21. Instructors give prompt feedback and responses in synchronous e-learning sessions.
- ☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

22. We get the support from Instructor in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

23. Prompt feedback, responses, and support from Instructors positively contributed to my study improvement effort in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

24. Instructors effectively controlling the pace and led us to focus on important points of our study in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

25. Instructors are patient and nice when we met certain difficulty during the synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

26. We get summaries of discussions at the end of synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

D. Learning strategies for synchronous e-Learning

27. I participated and active in the synchronous e-Learning session.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

28. Before the synchronous e-Learning session, I learned the learning content according to previous and next topics.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

29. I do not hesitate to ask questions directly to instructors in synchronous e-Learning session.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

30. During the synchronous e-Learning session, I write down critique ideas and suggestion from other participants.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

31. I watch the recorded videos of synchronous e-Learning session after class.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

E. Perceived Ease of Use

32. Learning how to use synchronous e-learning system is easy for me.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

33. It easy to learn what I have to learn by synchronous e-learning system.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

34. Our interaction in synchronous e-learning sessions is clear and understandable.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

35. I found that the synchronous environment is very flexible to interact with.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

36. It would be easy for me to become skillful at using synchronous e-learning system.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

37. Synchronous e-learning tool is easy to use.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

F. Perceived Usefulness

38. Participating in synchronous e-learning session in my study be enable me to accomplish tasks more quickly.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

39. Participating in synchronous e-learning session increase my learning performance.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

40. Participating in synchronous e-learning session make it easier to learn the learning content.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

41. I found that synchronous e-learning system useful in my study.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

42. Participating in synchronous e-learning session would enhance my learning effectiveness.

☐ Strongly agree

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   ☐ Agree

   ☐ Neither agree nor disagree

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☐ Agree

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   ☐ Strongly agree

   ☐ Agree

   ☐ Neither agree nor disagree

   ☐ Disagree

   ☐ Strongly disagree

63. The content in my synchronous e-learning courses is challenging.

   ☐ Strongly agree

   ☐ Agree

   ☐ Neither agree nor disagree

   ☐ Disagree

   ☐ Strongly disagree
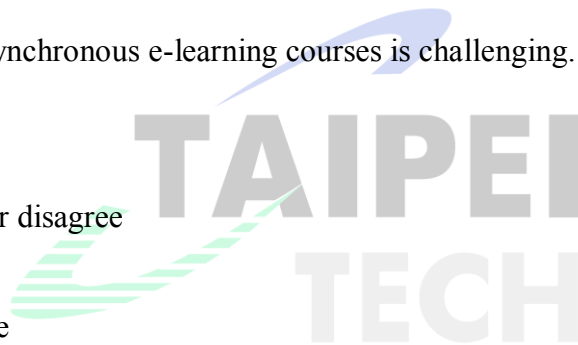
March 11, 2016

Mr. Junedi

No.8, BeiPing W.Rd, Zhongzheng Dist, Taipei City 100
Cell Phone No: +886978764430
Email: Junedi_7tumorang@yahoo.com

Dear Mr. M. Akamalul 'Ulya
Chief Executive of Indonesia Open University in Taiwan
6F, No. 550, Rui Guang Road, Neihu District, Taipei, 114, Taiwan, ROC

My name is Junedi, I am a master student at Institute of Technological & Vocational Education (TVE), National Taipei University of Technology (Taipei Tech). I am writing my thesis, entitled Synchronous Learning Experiences: Distance Learners' Perspectives at Indonesia Open University in Taiwan. According to some sources, Indonesia Open University *(Universitas Terbuka)* in Taiwan has been using synchronous learning media. Therefore, I want to do survey research at Indonesia Open University in Taiwan. In this study, I need the demographic data of students, and students' perspectives about synchronous E-Learning System, according to their experiences on online learning process by questionnaire. In this study, I need transcript (copied version) of the students as well. Those data will use for this study only, and will not abused. In this case, I will be responsible for any abuse of those data. Current study is my second study, previous study entitled Correlation of Students' Entrepreneurship Learning Outcomes & Behavior with Self-Interest on Entrepreneurship at Faculty of Mechanical Engineering Education, State University of Medan. For your consideration, abstract and cover letter of previous study are provided. Additionally, the questionnaires items of current study are provided as well.

Hopefully, you would give me the permission (written document) to do survey research at Indonesia Open University in Taiwan. Your response is very important to the success of this study. It is my pleasure if you would give me permission as soon as possible. The research result will be provided as document for Indonesian Student Association in Taiwan, Indonesia Open University in Taiwan, and for further study. Thank you very much.
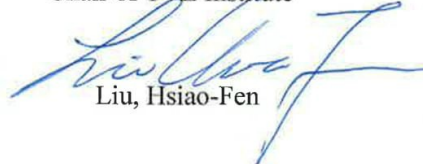
Sincerely,	Advisor,	Chair of TVE Institute
Junedi	Tsai, Ming-Hsiu	Liu, Hsiao-Fen

May 8, 2016

Mr. Junedi
No.8, BeiPing W.Rd, Zhongzheng Dist, Taipei City 100
+886978764430

According to your cover letter about a survey for your thesis entitled "Synchronous Learning Experiences: Distance Learners' Perspectives at Indonesia Open University in Taiwan." Based on policies in the Universitas Terbuka Taiwan, I decided that you are allowed to do a survey for your thesis with accordance to the explanation in your cover letter. The decided time for your research survey was on May 8, 2016. The questionnaires should be distributed at 09.00 - 10.00 and gathered at 16.00 – 17.00.

Sincerely,

M. Akamalul 'Ulya

UNIVERSITAS TERBUKA TAIWAN
UPBJJ-UT Layanan Luar Negeri – UT Taiwan – PPI Taiwan
Website: ut-taiwan.org, email: koordinator@ut-taiwan.org

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Appendix 4

<table>
<tr><td>Lucky No:</td></tr>
<tr><td>Date:</td></tr>
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Questionnaire

Dear participants,

I am a master student in National Taipei University of Technology (Taipei Tech). I am on writing process of survey research about the Synchronous E-Learning system for my thesis. This questionnaire is a gathering data tool, not affect your academic issues. Please feel free to fill-up this questionnaire in accordance with the instructions provided.

Note: Synchronous e-Learning system in this questionnaire includes WizIQ, BigBluebutton, and Skype for Business/Lync.

A. Students' Demographic characteristics

No	Item	Response
1	Class level	
2	Gender	□ Male □ Female
3	Working time	Hours/day
4	Off day	Day(s)/month
5	Age	Years old
6	Place in Taiwan	City
7	Major	□ Management □ English (translator) □ Communication
8	Job sector	□ Productive industries □ Social welfare
9	Study background	□ High school □ Diploma □ Paket C (equality) □ Bachelor

10. I have been in Taiwan for ….. (Months).

11. The enrollment factors indicated in descending order of importance for you. ((Please numbering in the available space according to your choice).

   □   Degree (take higher education level)

   □   Convenience

   □   Work schedule

- ☐ Flexible pacing for completing a program
- ☐ Program requirements
- ☐ Cost
- ☐ Future employment opportunities

12. I know the information about Open University from…
- ☐ Friends
- ☐ Internet
- ☐ Printed publication
- ☐ Indonesia Economic and Trade Office to Taipei (IETOT) or other Indonesian Organizations

13. How long each day you currently dedicate to learning (preparation before sessions)? (Except class time).
- ☐ 0 – 60 minutes
- ☐ 61- 120 minutes
- ☐ 121- 180 minutes
- ☐ More than 180 minutes

14. What kind of devices did you used to access the online learning? (Please select all that apply)
- ☐ Desktop (PC)
- ☐ Laptop
- ☐ Cell phone
- ☐ Tablet

B. Enhancement of a sense of connectivity

15. There are good interactions between instructor and students in synchronous e-Learning sessions.
- ☐ Strongly agree
- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

16. There are good learner-content interactions in synchronous e-Learning sessions.
- ☐ Strongly agree
- ☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

17. With synchronous e-learning system, distance learning activity is effective and engage instructors and students.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

18. I feel emotionally connected with Instructors and other students in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

19. I feel more comfort to discuss in synchronous e-Learning session than face-to-face.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

C. Prompt support and feedback

20. Instructors give prompt feedback and responses in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

21. We get the support from Instructor in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

22. Prompt feedback, responses, and support from Instructors positively contributed to my study improvement effort in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

23. Instructors effectively controlling the pace and led us to focus on important points of our study in synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

24. Instructors are patient and nice when we met certain difficulty during the synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

25. We get summaries of discussions at the end of synchronous e-learning sessions.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

D. Learning strategies for synchronous e-Learning

26. I participated and active in the synchronous e-Learning session.

☐ Strongly agree

- ☐ Agree
- ☐ Neither agree nor disagree
- ☐ Disagree
- ☐ Strongly disagree

27. Before the synchronous e-Learning session, I learned the learning content according to previous and next topics.
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Neither agree nor disagree
    - ☐ Disagree
    - ☐ Strongly disagree

28. I do not hesitate to ask questions directly to instructors in synchronous e-Learning session.
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Neither agree nor disagree
    - ☐ Disagree
    - ☐ Strongly disagree

29. During the synchronous e-Learning session, I write down critique ideas and suggestion from other participants.
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Neither agree nor disagree
    - ☐ Disagree
    - ☐ Strongly disagree

30. I watch the recorded videos of synchronous e-Learning session after class.
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Neither agree nor disagree
    - ☐ Disagree
    - ☐ Strongly disagree

E. Perceived Ease of Use

31. Learning how to use synchronous e-learning system is easy for me.
    - ☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

32. It easy to learn what I have to learn by synchronous e-learning system.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

33. Our interaction in synchronous e-learning sessions is clear and understandable.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

34. I found that the synchronous environment is very flexible to interact with.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

35. It would be easy for me to become skillful at using synchronous e-learning system.

☐ Strongly agree

☐ Agree

☐ Neither agree nor disagree

☐ Disagree

☐ Strongly disagree

36. Synchronous e-learning tool is easy to use.

☐ Strongly agree

☐ Agree

□ Neither agree nor disagree

□ Disagree

□ Strongly disagree

F. Perceived Usefulness

37. Participating in synchronous e-learning session increase my learning performance.

□ Strongly agree

□ Agree

□ Neither agree nor disagree

□ Disagree

□ Strongly disagree

38. Participating in synchronous e-learning session make it easier to learn the learning content.

□ Strongly agree

□ Agree

□ Neither agree nor disagree

□ Disagree

□ Strongly disagree

39. I found that synchronous e-learning system useful in my study.

□ Strongly agree

□ Agree

□ Neither agree nor disagree

□ Disagree

□ Strongly disagree

40. Participating in synchronous e-learning session would enhance my learning effectiveness.

□ Strongly agree

□ Agree

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G. Time sessions

41. There is no time pressure in synchronous e-learning session.

□ Strongly agree

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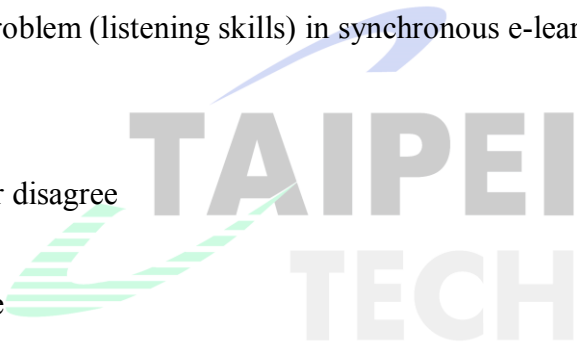☐ Neither agree nor disagree

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Appendix 5

Introduction of Author

Name: Junedi

Undergraduate Degree: Mechanical Engineering Education, Faculty of Engineering, State University of Medan, Indonesia

Graduate Degree: Graduate Institute of Technological and Vocational Education, National Taipei University of Technology (NTUT)

Working Experiences:

Vocational High School SMK N2 Pinggir-Riau, Indonesia	Automotive Teacher	2013
Equality school of Indonesia in Taiwan *(kejar paket C)*	Academic staff	2015

Contact Person: junedi_7tumorang@yahoo.com