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Teacher professional development in an online learning community : a case study in Indonesia

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TEACHER PROFESSIONAL DEVELOPMENT IN AN ONLINE LEARNING COMMUNITY: A CASE STUDY IN INDONESIA

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ABSTRACT

Over the past decade the rapid pace of technological innovation has changed the knowledge-based society and gradually changed the way teaching and learning are conducted (Hargreaves, 2003). Teachers are increasingly viewed as not only the knowledge providers, but also the facilitators of a learning process. These changes have been difficult for teachers to adapt to, requiring substantial amounts of professional development.

In Indonesia, the government has continually developed a number of strategic education policies and implemented various pathways to improve the professionalism of teachers. Nonetheless, there are still a large number of teachers who struggle to access the professional development support provided by the Indonesian government for a variety of reasons. This is particularly the case for teachers who work in rural and remote areas, because many of the current Teacher Professional Development (TPD) practices still focus on teacher-centred approaches instead of collaborative approaches, and often only in the format of face-to-face interaction.

Research has shown that an Online Learning Community (OLC) can support TPD and facilitate collaboration among teachers. As an open and voluntary form of gathering that involves education practitioners concerned with the general practice of teaching or specialist disciplines or areas of interest (Lloyd & Duncan-Howell, 2010), OLC promotes active and collaborative learning processes (Helleve, 2010) and gives an opportunity for teachers to engage in reflective practice that can lead to transformative professional development (Windschitl, 2002).

This thesis presents the results of a study that set out to develop and implement an OLC to support the current TPD practices in Indonesia. This online learning community was called the Online Learning Community for Teacher Professional Development (OLC4TPD). The study investigated the facilitating and inhibiting factors of OLC4TPD implementation in Indonesia, and analysed how OLC4TPD supported TPD within the Indonesian context.

The design and implementation of OLC4TPD was conducted within the methodological framework of Design-Based Research (DBR). A number of qualitative data collection techniques, such as interviews and community transcripts, were used. The data were then analysed from and across different times, environments (physical and virtual) and roles of educators (teacher educators, school leaders and teachers). Based on the results of problem analysis, each element of OLC4TPD (community, technology, learning and network) was contextually designed and implemented according to the ICT and socio-cultural conditions pertinent to teacher education in Indonesia.

Three in-depth narrative case studies that depicted professional development journeys of a teacher educator, a school leader and a teacher were written to reflect the analysis of ICT profiles, competencies and social learning interactions in OLC4TPD. The case studies aimed to demonstrate how these educators adopted, engaged with, faced challenges and benefited from OLC4TPD. The results showed that (1) the leadership role in an organisation or a community affected the participation of OLC4TPD members, (2) ICT competencies influenced one's engagement in OLC4TPD, (3) social media was a viable means to engage teachers and teacher educators in social learning.

The results of the data analysis also showed that there were six ICT and socio-cultural facets that influenced the formation and operation of OLC4TPD. These facets were ICT access, length of experience in using ICT, ICT skill, gender, leadership and synchronous interaction. Based on the data analysis, OLC4TPD demonstrated several positive impacts, such as facilitation of joint lesson planning, peer coaching, problem solving, reflective practice, collaboration, improvement of professional knowledge and empowerment. While the majority of OLC4TPD members benefited from the knowledge dissemination, there were still a number of educators who chose to take a passive role in the social learning process.

The research confirmed the viability of implementing an OLC to support TPD practices in Indonesia. This model could be implemented in other contexts that share similar ICT landscapes and socio-cultural heritages. With the limitation of OLC4TPD as a non-formal independent TPD initiative, it is imperative that this type of TPD receives support from government institutions, teacher training institutes and other educational

organisations and institutions to enhance the existing TPD practices and accelerate the process of improving teacher professionalism in Indonesia. At the same time OLC4TPD could be readily adapted for use in other countries taking into account differences in ICT landscapes and socio-cultural heritages.

ACRONYMS, ABBREVIATIONS AND DEFINITIONS

Acronyms and Abbreviations

3G	3rd generation mobile telecommunication protocol
ADSL	Asymmetric Digital Subscriber Line
AU	Australia
BECTA	Bringing Education Creativity for All
BERMUTU	Better Education through Reformed Management and Universal Teacher Upgrading Project
CoP	Community of Practice
D1	1-year Diploma
D2	2-year Diploma
D3	3-year Diploma
D4	4-year Diploma
DBR	Design-based Research
DB	Discussion Board
FB	Facebook
HDSPA	High-Speed Downlink Packet Access (enhanced 3G third generation mobile telecommunication protocol)
HSPA	High-Speed Packet Access
ICT	Information and Communication Technology
ID	Indonesia
IDV	Individualism Index
IKIP	Institute Keguruan dan Ilmu Pendidikan (Education and Teacher-Training Institute)
IMSO	International Mathematics and Science Olympiad
INT	Interventions
KKG	Kelompok Kerja Guru (Teacher Working Group)
LPMP	Lembaga Penjaminan Mutu Pendidikan (Educational Quality Assurance Council)
LPTK	Lembaga Pendidikan Tenaga Kependidikan (Institute of Teachers' Education)
LTO	Long-term Orientation
MAS	Masculinism Index
MeIni	Member Initiative
MeReply	Member Reply
MGMP	Musyawarah Guru Mata Pelajaran (Subject-matter Teacher Networks)
MoNE	Ministry of National Education
MoIni	Moderator Initiative
MoReply	Moderator Reply
RM	Researcher/eModerator
OLC	Online Learning Community
OLC4TPD	Online Learning Community for Teacher Professional Development

P4TK	Pusat Pengembangan dan Pemberdayaan Pendidik dan Tenaga Kependidikan (Development and Empowerment Centre for Teachers and Educators)
PBS	Public Broadcasting Service
PDI	Power Distance Index
PD	Professional Development
PiL	Partner in Learning
PISA	Program for International Student Assessment
RSBI	Rintisan Sekolah Bertaraf International (Leading to International Standard School)
SBI	Sekolah Bertaraf International (International Standard School)
SL	School Leader
SPG	Sekolah Pendidikan Guru (Teacher Training Vocational School)
TC	Teacher
TE	Teacher Education
TPD	Teacher Professional Development
TIMSS	Third International Mathematics and Science Study
UAI	Uncertainty Avoidance
UK	United Kingdom
UT	Universitas Terbuka (Open University)
USA	United States of America

Definitions

Community of Practice (CoP): a group of people who share a common profession that evolve because of a common interest in a particular domain or area or a common goal of gaining knowledge related to their field. The CoP members engage in the process of social learning to learn from each other and develop themselves personally and professionally.

Online Learning Community (OLC): a CoP that operates in an online environment.

Online Learning Environments: synchronous and asynchronous technologies that are used in this study to support social learning interactions in an online learning community, for example: Web Portal, Skype and Facebook.

Online Learning Tools: various tools provided in an online learning environment to support online learning interaction, for example wiki and discussion forum (Web Portal), web conference and chatting (Skype), and wall and chatting room (Facebook).

Online Learning Community for Teacher Professional Development (OLC4TPD): an OLC-based TPD initiative founded in 15th October 2009 to develop professional competencies of educators in Indonesia, particularly teachers and equip them in tackling the demands of the 21st century.

Social learning: learning that occurs through social interaction among community members to construct new knowledge through knowledge exchange and building.

Teacher Professional development (TPD): human resources management and development program in education that aims to seek professional growth and improvement of educators, particularly teachers in order to affect changes in education practice.

Teacher professional competency: professional competencies of a teacher that include subject and pedagogical knowledge, critical reflection, curriculum standard alignment, leadership and collaboration within their community of practice.
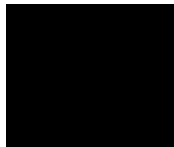
DECLARATION

I certify that this thesis does not, to the best of my knowledge and belief:

  (i)   incorporate without acknowledgment any material previously submitted for a degree or diploma in any institution of higher education.

 (ii)   contain any material previously published or written by another person except where due reference is made in the text; or

(iii)   contain any defamatory material.

I also grant permission for the Library at Edith Cowan University to make duplicate copies of my thesis as required.

Signature: ▇▇▇▇

Date: 12$^{\text{th}}$ March 2012

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CHAPTER 1

INTRODUCTION

Overview

This thesis is a result of a three and half-year study to investigate an alternative model of Teacher Professional Development (TPD) in Indonesia, using existing Information Communication Technologies (ICT) in order to support some of the TPD practices in place. For the purpose of this study, the researcher used a Design-Based Research (DBR) methodological framework to develop and implement an Online Learning Community for Teacher Professional Development (OLC4TPD). A feasibility study was conducted to examine how this new model could facilitate ongoing professional development and promote social learning interaction for educators in Indonesia. Within the framework of DBR, ongoing analysis to validate design decisions was iteratively conducted. Involving participants as design partners on regular basis also provided validity and reliability of the data collected and analysis. This introductory chapter presents the background of the study, the significance, the innovation, the research design and organisation of this thesis.

1.1   Background

The rapid pace of technological innovation has gradually shaped a *knowledge-based society* that requires "capabilities to identify, produce, process, transform, disseminate and use information to build and apply knowledge for human development" (Council of the World Report, 2005, p.27). Peter Drucker (1993), a futurist and management expert, suggested that knowledge is the essential capital of the knowledge society that needs to be produced and managed. Hargreaves (2003) said that this society is driven and stimulated by creativity and ingenuity.

Expectations for teaching and learning in this knowledge society have also undergone significant change. Teachers have had to move from their respected position in the society, as the sole knowledge provider, into facilitators who can prepare their pupils to be citizens of the world (Hargreaves, 2003). Teachers therefore need to shift their teaching models to incorporate learning capabilities, such as deep cognitive learning, creativity and ingenuity, problem solving, continuous learning and risk taking. Hargreaves further asserted that teachers need certain levels of skills and judgements far beyond merely delivering someone else's curriculum and standardised test.

Many teachers, however, are not ready to deal with the new challenges because they have been raised and educated in a conventional way (Friesen & Clifford, 2003), which Haberman (1991; 1992, p. 16) defined as the *Pedagogy of Poverty*. This model places the teacher in a prominent position, as information provider, task giver, or assessor. Instead, their model needs to place the teacher as a facilitator for the development of student skills for the 21st century, such as critical thinking, collaboration, and cross-cultural thinking skills. Thus, a paradigm shift is needed for transforming the practice of teachers.

Research has shown that pedagogical transformation of a teacher can be facilitated through ongoing Teacher Professional Development (TPD) (Darling-Hammond, 1994). TPD allows teachers to reflect on their own practice through interactions with other practitioners, which can improve their professional practice. Conventional TPD practices, however, may not be relevant to the needs of teachers in the knowledge society. Organised as a periodic activity (Lock, 2006), these conventional TPD practices employ a directive top-down approach to facilitate professional learning. These practices are also often characterised by a lack of effort; to

1) engage and motivate teachers in Community of Practice (CoP) (Joyce & Showers, 1980), 2) encourage teachers to reflect on their professional practice on ongoing basis (Helleve, 2010), and 3) provide ongoing support for teachers (Scott, 2003).

In Indonesia, many teachers work and live in dispersed geographical locations, including remote areas. While the Indonesian government is continually developing a number of strategic education policies and implementing various pathways to improve the professionalism of teachers, for a variety of reasons there are still a large number of teachers who struggle to access the professional development support provided by the government. This is particularly the case for teachers who work in rural and remote areas, because many of the current TPD practices still focus on teacher-centred approaches instead of collaborative approaches, and often only in the format of face-to-face interaction. The typical TPD model practiced in Indonesia requires a school to send one or a few representatives to periodic teacher forums, which are usually conducted in a distant town or city. This situation results in inflexibility for participating in TPD activities. Beside limited opportunities, there are other challenges of TPD related to existing policies and practices in Indonesia, such as financial and human resources, which will be discussed in the Section 1.6.

Research has shown that an Online Learning Community (OLC) can support TPD and facilitate collaboration among teachers. As an open and voluntary form of gathering that involves education practitioners concerned with the general practice of teaching or specialist disciplines or areas of interest (Lloyd & Duncan-Howell, 2010), OLC promotes active and collaborative learning process (Helleve, 2010) and gives an opportunity for teachers to engage in reflective practice that can lead to transformative professional development (Windschitl, 2002).

1.2   Purpose of the Study

The research set out to develop and implement an OLC-based model of TPD to support the existing practices in Indonesia. This online learning community was called the Online Learning Community for Teacher Professional Development (OLC4TPD). The research investigated the facilitating and inhibiting factors of OLC implementation in Indonesia, and later analysed how this model could support TPD. The feasibility of the

OLC4TPD to offer adequate flexibility for the Indonesian teachers who faced the following challenges was explored:

- Had limited time for TPD, due to enormous work commitments;

- Were unable to leave workplaces, due to limited human resources working at their institutions;

- Workplaces located at geographically challenged areas and thus coming to periodic face-to-face TPD meetings could be demanding and infeasible; and

- Had needs for ongoing professional learning, but their opportunities were limited, due to existing education policies and practices.

As OLC4TPD was implemented, the researcher also examined how the OLC4TPD impacted on the professional learning journeys of its members. As a result of the study, a set of design principles, guidelines and recommendation for further and wider implementation of OLC4TPD were constructed.

1.3   Research Questions

This research was designed to answer the following research questions.

Research Question 1: *What facilitating and inhibiting factors of OLC4TPD implementation contribute to the extent to which its members adopt and implement this model to support their ongoing professional development?*

The first research question was concerned with examining factors that facilitated and inhibited OLC4TPD members in adopting and implementing an online learning community model to facilitate their ongoing professional development activities. Data collected from preliminary ICT surveys, brainstorming workshop, interviews, participant observation notes, field notes as well as community transcripts were analysed to answer this first research question.

Research Question 2: *To what extent does social learning interaction in OLC4TPD online learning environments impact on members' professional development?*

The second research question aimed to investigate how OLC4TPD facilitated the social learning interaction of its members and to what extent these interactions

impacted professional development of its members. Data collected from community transcripts, interviews and participant observation notes were analysed to answer this second research question.

1.4   Significance and Innovation

The need for, and purpose of, this research was driven by a number of factors, including the recent poor performance of Indonesian students in national and international arena, such as TIMMS and PISA assessments; the urgent need to improve teachers' professional competencies and the existing TPD practices that have not yet answered the demands of the 21st century education. Further, many teachers in Indonesia had not attained their teachers' professional competencies and qualifications. While the government of Indonesia is continually developing a number of strategic education policies and implementing various pathways to improve the professionalism of teachers, there are still several challenges faced by the teachers to access the professional development support provided by the government. Some of these challenges included geographical constraints, time constraints and the predominantly teacher-centred paradigm of learning.

With the potential offered by the advancement of ICT, particularly social media and mobile technology, this research aimed to explore the feasibility of OLC-based TPD model to tackle some challenges of the current TPD practice. OLC was envisioned to provide a new alternative to improve teacher professional competencies, as some previous research had shown that this model could engage educators in a social learning process in both a flexible and a reflective manner (Barab et al., 2001; Windschitl, 2002). This model has shown its capabilities in supporting teachers who work individually across geographical areas, including the remote and rural ones. It was expected that OLC would complement the current TPD practice administered by the Indonesian government enhancing its support for teachers through flexible ongoing TPD activities.

In this geographically dispersed situation, it can be challenging for teachers in rural and remote areas to regularly travel to many places and participate in periodic TPD activities in big cities. It is also financially demanding and time consuming for teacher educators to facilitate TPD activities at each school or area on an ongoing basis.

OLC4TPD offered an alternative model of TPD using an ICT-based community concept. The concept of community is a part of the unique identity of a high collectivist country like Indonesia. Being a part of a group and helping each other to solve a problem demonstrates the unique quality of Indonesians. This aspect was taken into critical consideration when developing OLC4TPD.

The concept of community-based TPD using ICT had not been explored in Indonesian TPD prior the commencement of this research. Through this study, Indonesian educators have been empowered to explore the potential of various online learning environments, such as Skype, Facebook and Web Portal Discussion Forum to enhance their professional development. They could utilise the technology to facilitate social learning process, such as exchanging information and building professional knowledge with other teachers.

It was the right time to explore and adopt these technologies for TPD in Indonesia, because of the readiness of ICT infrastructure and literacy compared to several years before. In March 2009, the researcher investigated the use of social media (Facebook) in Indonesia for TPD. Facebook had just started to be popular in Indonesia, mostly among the younger generations between the ages of 13 to 25 years old (75 percent). Within a year (November 2010), the number of Facebook users in Indonesia had tripled and 17 million more users were added surpassing United Kingdom and becoming the 2nd largest market after United States. It was reported that Facebook also boasted 67 percent Internet penetration among the 45 million Indonesian Internet users, in which there was 9 million growth of accessing the Facebook via mobile devices (Cutler, 2010). Cutler forecast that Indonesia would be one of Facebook's key markets for years to come with 29.4 million users. Less than two years after Cutler's forecast, a recent report showed that the number of Facebook users in Indonesia has reached over 40 million, which made Indonesia as the third largest Facebook community after United States and India, and Jakarta as the Facebook capital of the world (Agence France-Presse, 2012). Regardless their education and socio-economic backgrounds, most Indonesian recently used Facebook on their mobile phones. The mobile telecommunication providers competed to provide lifetime services to use Facebook for their subscribers. Most Indonesians consider Facebook as the *Internet*, where they could get the latest updated information, and thus spent a considerable amount of hours everyday on this social media.

During the early phase of DBR *(Problem Analysis),* most teachers and teacher educators suggested that they used Facebook daily, particularly via their mobile phones. Yet, they expressed their objections to accept the idea that Facebook could be a viable means to support TPD, because Facebook was merely used for informal communication and entertainment purposes. Thus, the educators suggested the use of discussion forum, instant messengers and emails to build an OLC. At later stages of the research, Facebook was considered to have a unique role in bridging the digital divide among educators in Indonesia, while at the same time sustaining ongoing knowledge exchange.

1.5 Design of the Study

This study was designed using a Design-Based Research (DBR) methodological framework (Brown, 1992; Collins, 1992; Collins, Joseph, & Bielaczyc, 2004). This methodology has been used for educational and postgraduate research (Herrington, McKenney, Reeves, & Oliver, 2007) to address complex problems in real contexts in collaboration with stakeholders (Reeves, 2006; Van den Akker, 1999; Van den Akker, McKenney, Nieveen, & Gravemeijer, 2006). In this study, an iterative design and evaluation process was conducted to address the complex problems of TPD in Indonesia (Sari & Lim, 2012). Figure 1 and table 1 illustrate the DBR process that consists of four phases employed by this study, which were borrowed from Reeves (2006).

A preliminary ethnographic-inspired study was conducted prior to the design and development of the community to understand the current practice of TPD in Indonesia including its challenges. Several online technologies and online learning communities were trialled to facilitate professional development of Indonesian teachers. During the implementation, the researcher investigated the multi-layers of social learning interaction in the OLC, which is so called OLC4TPD (Sari & Lim, 2012; Sari, 2010; Sari, Lim, & Pagram, 2010).

a. Phase 1 - Problem Analysis

During the first phase of the study, the researcher conducted a field study to gather knowledge about the existing TPD practices and policies in Indonesia. An

extensive literature study on TPD theories and practices was conducted to investigate existing solutions and tackle similar TPD issues.
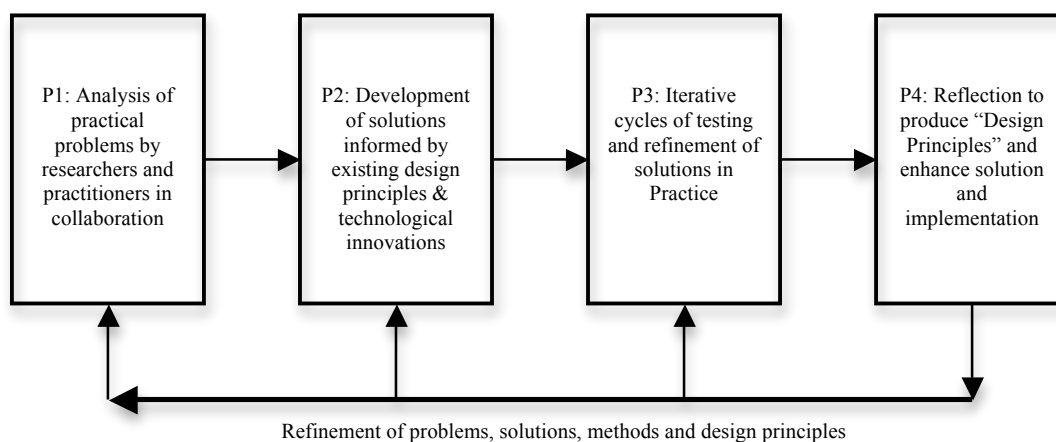
Figure 1 Design-Based Research (DBR) phases (Reeves, 2006, p. 59)

Table 1
Four Phases of Design-Based Research

DBR Phases in OLC4TPD Study		
Design and Development		Implementation and Testing
Phase 1	**Phase 2**	**Phase 3**
Problem Analysis	Design and Development	Iterative Testing and Refinement
Year 1/2	Year 2	Year 2-3
Phase 4		
Reflection and Documentation (Year 1-3)		

b. Phase 2 - Design and Development

Having analysed the key issues of TPD in Indonesia, the researcher engaged teachers and teacher educators in the design and development of OLC4TPD through several activities, including: a brainstorming workshop with twenty-three teacher educators, online discussions, ICT surveys and unstructured open-ended interviews. Based on the feedback and inputs from the prospective users, the researcher designed OLC4TPD using Tu and Corry's model of OLC (Tu & Corry, 2002; Tu & McIsaac, 2001). The researcher started to build the initial infrastructure, choose the online learning environments, plan the professional learning activities and launch OLC4TPD in October 2009 for testing and further refinement with the community members in Phase 3. Assuming the roles of a designer, facilitator and researcher, the researcher intended to seek the answer to the two main research questions.

c. Phase 3 - Iterative Testing and Refinement

In October 2009, the researcher launched the initial concept of OLC4TPD. There were three main interventions conducted during this study based on three main online learning environments being tested, which were Web Portal Discussion Forum, Skype and Facebook. The researcher investigated the process of social learning among educators in OLC4TPD through five stages of online teaching and learning, which are Access and Motivation, Online Socialisation, Information Exchange, Knowledge Construction and Development (Salmon, 2002, 2003). Community transcripts were collected and analysed using Scardamalia's knowledge building perspective (2002; Scardamalia & Bereiter, 2000) and Hofstede's Cultural Dimensions (1994, 2009).

d. Phase 4 - Documentation and Reflection

Documentation is an important part of the study. The researcher investigated the evolution of OLC4TPD from its conception. Therefore, iterative processes of reflection as well as documentation were conducted throughout the study. The purpose was to understand the process of change that had happened prior, during and after the design, development and implementation of OLC4TPD. Phase 4 aimed to reflect the whole research journey to investigate the implications of OLC4TPD for TPD practice in Indonesia.

1.6 Context of Education in Indonesia

The description about context of education in Indonesia is intended to give background information about the education system, quality and policies, in particular to emphasise the potentials and challenges of the existing system and policies for OLC-based TPD.

1.6.1 Education Quality

Education is critical to the economic competitiveness of Indonesia, the fourth most populous country in the world after China, India and United States. Having recovered from the Asian economic crisis of 1997, Indonesia has struggled to improve its education performance (Filmer, 1998). Recent studies have shown that the quality of

education outcomes continue to under-perform when compared to neighbouring countries. The results of the Third International Mathematics and Science Study (TIMSS) show that the performance of Indonesian eighth grade students in Mathematics and Science is quite poor. Out of 45 countries surveyed in 2003, students' performance in Mathematics ranked 34 out of 45, the rank worsened to 36 in 2007 (Mullis, 2008). In Science, Indonesian students were ranked 36 out of 45 in 2003 and improved slightly to 35 out of 47 in 2007 (Martin, 2008). In 2006, the Program for International Student Assessment (PISA) confirmed the poor performance of Indonesian students (OECD, 2007). This program assessed the performance of 15-year old students in Science, Reading and Mathematics. In Science, Indonesia ranked 52 out of 57 countries, followed by 41 out of 48 for reading and 51 out of 57 for Mathematics. The scores were lower compared to the median scores in all three subjects. A few Indonesian students have achieved remarkable results during the International Mathematics and Science Olympiad (IMSO) 2007 by winning six out of eleven gold medals, eight silver and twelve bronze medals (Jalal, Samani, Chang, Stevenson, & Ragatz, 2009). Yet, the Indonesian graduates from the current education system are generally still not competitive enough in knowledge and skills to build a strong society and economy (di Gropello, Kruse, & Tandon, 2011). di Gropello, Kruse, & Tandon suggested that PISA Skills do not negate the need for improving the cognitive skills of Indonesian students to bring them closer to international standards.

This poor performance of Indonesian students is a reflection of the Indonesian education system, which is influenced by poverty, unequal education support and facilities, and a shortage of teachers. Forty-five percent of Indonesian children do not attend school beyond the 7th grade (1st junior secondary level grade) due to poverty (Worldbank, n.d).

Indonesia is the largest archipelago that extends 5,120 kilometres from East to West and 1,760 kilometres from North to South with more than 17,500 islands separated by water. There are more than 300 ethnic groups and more than 700 living languages across the archipelago. Thus, there are many difficult and remote places with limited infrastructure, human and financial resources. Among all islands in Indonesia, Java is considered the most developed place. This most populated island and the centre of the nation (Dean, 2001) has received better education facilities and infrastructure compared with other island.

At the commencement of this research, the researcher found that there were still many underdeveloped schools in remote areas of Java. The numbers of teachers working in remote areas are limited. Across Indonesia, there are still more than 46 million students with only 2.7 million teachers working across 227,000 schools (Jalal et al., 2009). Teachers in remote areas sometimes have to teach more than one class or even the whole school because of the human resource shortage. Their professional competencies were often found to be underdeveloped, because they had not received adequate support, facilities, or resources.

1.6.2 *Existing Education Policies*

Previous research in Indonesia has shown that one of the key contributing factors for students' low achievement is teachers' professional competencies (Jalal & Mustafa, 2001; Nasainus, 1998). Two significant policies were introduced by the Indonesian government in response to the low performance in student academic achievement. The laws for the reforms in education sectors are the 2003 Education Law (Law No. 20/2003 on the National Education System) and the 2005 Teacher and Lecturer Law (Law no 14/2005 on Teachers and Lecturer).

The Teacher and Lecturer Law No. 14/2005 mandates that teachers need to have essential competencies, which are pedagogical, personal, professional and social (Jalal et al., 2009). In order to address these competencies, there are eight National Education Standards, which teachers, principals, supervisors and other educational personnel can use to evaluate progress. These standards include graduate competency, learning content, learning process, equipment and infrastructure, education management, cost and finance, educational assessment and evaluation (Jalal et al., 2009).

A significant implication of the new Teacher and Lecturer Law is that teachers and lecturers need to continually enhance and develop their professional skills in line with scientific, technological and artistic advances and to "renew their teaching certificates periodically through a competency examination. To be certified, teachers must attain a basic professional qualification (four-year diploma or bachelor degree) and they need to prove competence in their teaching field. Under-qualified teachers need to undertake further studies to upgrade their qualifications. Having been certified, teachers are entitled to get better recompense and work conditions (i.e. salary, professional incentives, and other fringe benefits).

Ministry of National Education statistics showed that in 2006 more than 65 percent of the 2.7 million teachers in Indonesia had not yet met their 4-year basic professional qualifications (Pannen, Riyanti, & Pramuki, 2007). Almost half of the practising teachers are primary school teachers and 47 percent of them only have a two-year diploma qualification. The number of secondary teachers who have a four-year diploma is higher, 61.3 percent of junior high school teachers and 83.4 percent of senior high school teachers have met the basic qualification level.

Prior to 1990, in order to become a teacher in Indonesia, one only need to attend a vocational secondary school specializing in teacher training called SPG (Sekolah Pendidikan Guru or Teacher Training School). Teacher training, however, did not meet the professional standard competency set by the Indonesian teacher-training institutes (Jalal et al., 2009). As SPG graduates do not meet standards of teacher professional competency, the previous national training system subsequently was deemed to be weak. From 1990, the bar was raised. The minimum education requirement was at least a two-year post secondary diploma (D2) for a primary school teacher, at least three-year post secondary diploma (D3) for junior secondary school teachers and at least four-year post secondary diploma or sarjana degree (D4/S1) for senior secondary school teachers.

The government of Indonesia has upgraded training pathways to improve the professionalism of its teachers. Some of the pathways include:

a. *Full University Attendance* - This program requires teachers to leave their classroom to complete full-time academic study in a local university. There are only a small number of teachers who are willing to take this costly option. Many teachers are unable to earn salary, whilst continuing study.

b. *Distance Learning Pathway through Open University (University Terbuka)* This traditional pathway of distance learning enables teachers to enrol in courses, receive packaged resources provided by Open University and attend workshops organised by the university. The central and district governments have provided assistance for teachers to pay for their courses through scholarships. There has been a significant increase of teachers choosing this pathway to complete their additional study.

c. *Attendance at courses conducted by the Development and Empowerment Centre for Teachers and Educators (P4TK) through Provincial Educational Quality Assurance Council (LPMP)* - Teachers have the opportunity to periodically attend in-service courses and lectures provided by the centre

through the council. The Centre provides specialist subject matter training for teachers and conducts the train-the-trainer activities. The Council, in addition to its role in quality assurance, also provides some courses and lectures to assist local teacher in the form of working group training. For teachers who work in remote and rural areas in Indonesia, attendance at courses organised by the Council can be challenging.

In addition to the above, there are a number of newer pathways starting to emerge and being developed, such as:

a. ***Distance Learning Program that is available at some teacher training universities*** - A consortium of teacher training universities expanded the role of the Open University in trialling programs to support elementary school teachers in upgrading their qualifications from 2-year diploma to 4-year diploma.

b. ***Local in-service activities provided through the schoolteacher working groups named Teacher Working Group (KKG) and Subject-matter Teacher Networks (MGMP) have been expanded*** - Cluster teacher working groups can submit funding proposals to the district and the Provincial Educational Quality Assurance Council to hold activities, such as course planning and on-demand teacher training.

c. ***Teacher forums organised by district to present and discuss exemplar-learning activities*** - In these periodic events, principals, school supervisors, *expert* teachers lead the workshops and activities in order to expand teachers' knowledge. Teachers who participate in these events can get academic recognition toward qualification upgrade.

d. ***Fostering Professional Teacher Associations to stimulate on-going teaching support and self-improvement*** - Through these training activities, teachers will be able to receive academic standing and certificates that can be included in their portfolio for certification. In cooperation with teacher training institutes, giant IT companies (e.g., Intel and Microsoft), other national and international NGOs and agencies, such as Dompet Dhuafa, Sampoerna Foundation, World Bank, UNESCO, JICA (Japan International Cooperation Agencies), a number of in-service TPD supports were given to teachers from across Indonesia in the forms of ICT training, lesson studies, teacher forums and mentoring (e.g.,

Hendayana, Suryadi, Supriatna, & Imansyah, 2009; Lim, Wong, & Quah, 2007)

e. ***Development of a mechanism to Recognised Prior Learning (RPL) of incumbent teachers*** - The current regulations allow teachers to fill up to 65 percent of the qualification gap using credit points given for prior learning experiences. The university can assess professional and work experience of teachers through portfolios submitted to determine if the advanced standing or credit could be given toward the completion of a training course.

1.6.3 Challenges

Based on a review of the literature, some fieldwork and analysis of current practice, several challenges of TPD are identified and discussed in this section.

a. Support and Evaluation Mechanism

The literature suggests that periodic TPD programs are not effective in providing opportunities for teachers to reflect on their own teaching practice in order to solve ongoing teaching and learning issues (Lock, 2006; Scott & Scott, 2010). Most existing TPD practices in Indonesia are held in the form of periodic teacher forums (organised district government), workshops (held by Open and Distance Learning program), and courses (run by Development and Empowerment Centre for Teachers and Educators through Provincial Educational Quality Assurance Council). The events usually run for only a couple of hours during a school day, over a weekend or several days in a row (see Photos on Appendix 10). After these events, teachers usually go back to their workplace and are expected to apply the new skills they have learnt. The challenge to these teachers is how to apply the skills without any ongoing support and evaluation mechanism available that can ensure a positive impact.

Some strategies introduced include several new pathways to facilitate ongoing grassroots TPD initiatives, such as local in-service teacher working groups and teacher' forums organised by districts (Jalal et al., 2009). These initiatives have a lot of potential to follow-up on what teachers have learnt in the seminar and how they implement the lessons they learnt. They can also share success stories and challenges the experience during the implementation process. These current practices show that in reality, activities are still organised as periodic events, a change of paradigm, system and socialisation of the new models needs to take place to ensure improvement in TPD practice.

b. Decentralisation

Decentralisation is a main aim of education reform. However, most current TPD was still held as face-to-face events in major districts. Teacher representatives come from various schools, including those who work in remote and rural areas to attend and participate in professional development events held by the Educational Quality Assurance Council in major districts. Attending professional development activities can often be challenging for those teachers who work in rural and remote areas, because it is costly in terms of time, financial and human resources.

An example is from a secondary teacher, Eko, who worked in a rural and remote school in West Java (Eko will be described further in Chapter 5). He had to travel at least 3 hours everyday on a motorcycle around a mountain in order to get to the school. His students had to walk about 4-6 hours to school everyday, because the road is not good and there is no public transportation. If he and his colleagues were invited for a one-day teacher forum in a major district, they had to drive for 10 hours (a round trip). There were small numbers of teachers in this school, therefore, they needed to find a substitute to teach the class or organise a holiday for the children if they wanted to attend a professional development event.

The government of Indonesia has realised the challenges faced by teachers in rural areas. They have introduced a number of ways to support these teachers, such as local in-service activities through teacher working groups and local teacher forums organised by schools. Although these concepts are good, many schools have not participated. Lack of information and facilitation sessions to start this type of professional development activities have hindered teachers to develop their professional capabilities on ongoing basis.

c. Structure

The current practice of TPD still models on the teacher-centred approach. The teacher-centred approach to learning is essentially non-reflective and non-collaborative practice. It does not give enough room for teachers to reflect on their professional practice and collaborate with other practitioners in order to solve the problems of their daily practice (Scott & Scott, 2010; S. Scott, 2010). Shifting the paradigm from this teacher-centred approach to a more collaborative and reflective learning process is

problematic due to decades of existing practice, which is supported by the existing socio cultural and political backgrounds of Indonesia.

For more than 350 years a number of countries, such as The Netherlands, Japan and Portugal colonised the archipelago that became Indonesia. The country declared its independence on the 17th August 1945 and the first president Soekarno led the country for more than two decades during the *Orde Lama* (Old Period). He laid a foundation for the country that was poor and weak largely due to colonial neglect and war. Two decades later, in 1968, his successor, Soeharto, started a new regime called *Orde Baru* (New Period) and led the country for three decades. Under the Soeharto regime, freedom of speech was banned, until a revolution in 1998 (McIver, 2008; McNair, 2006).

Living without freedom for many years has shaped the socio-cultural characteristics of the people. Hofstede (1994, 2009) using his *Cultural Dimension* indexes rated Indonesia as having an unequal hierarchy in society. This Cultural Dimension is called the *Power Distance Index* (PDI). At 78 out of 100 the Indonesian Power Distance Index is the highest among the three other cultural dimension indexes (*Masculinism, Uncertainty Avoidance and Individualism* indexes) with the lowest Individualism Index at 14 out of 100. This shows that there is a great inequality of power and wealth in the society that is accepted by the Indonesians. A leader is naturally expected to be a role model to provide guidance and direction for the community. This could be compared to other countries like United States and Australia, which both have similarly low Power Distance Index at 40 and 36 out of 100 respectively and a very high level of Individualism 91 and 90 out of 100 respectively. This implies that although there is a hierarchy within an organisation, superiors are always accessible. People are treated based on their expertise and communication among them is informal, direct and participative. In an individualist society like United States and Australia, people are expected to look after themselves and their close relatives, while in Indonesia; people belong to *in groups*, which take care of them in exchange for loyalty. Figure 2 illustrates the comparison of five cultural dimensions for the United States, Indonesia and Australia.

The current teacher-centred practice reflects the cultural character of the Indonesian people. Although there are positive aspects of the teacher-centred approach, such as centralisation of curriculum, assessment and class management, there is an urgent demand to improve this model, as Indonesia moves towards a knowledge

society, which requires teachers to be more creative, independent and innovative in their process of teaching and learning. This can only be achieved by providing a supporting mechanism that encourages innovation, creative and reflective thinking as well as increased efforts to develop teachers' professional competencies.
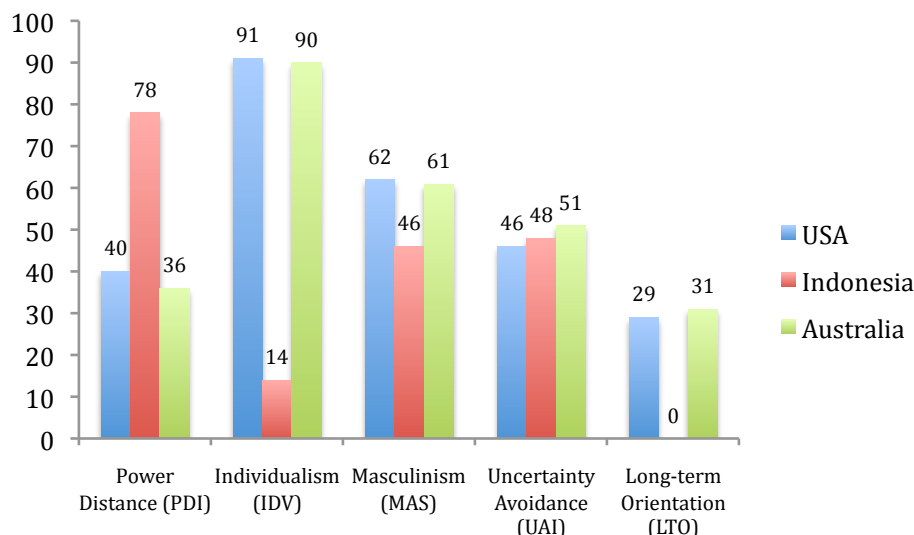
Figure 2. Five Hoftsede Cultural Dimensions: Comparisons of United States (USA), Indonesia (ID) and Australia (AU)

d. Continuity of Professional Development Growth

An individual's perspective on learning influences the individual's attitude and practice in professional development. This is reflected in the relationship between the civil service pay scale system and motivation to learn. As the process of gaining experience takes at least five years, many teachers tend to slow down in their efforts to improve their professional practice. A change of incentives paradigm is needed to change teachers' motivation in order to examine their practice and develop new ways of teaching on ongoing basis despite any incentives they may get.

The attitude toward professional learning is strongly connected to Hofstede' *Individualism Index* (IDV) (Hofstede, 2009). This suggested Indonesia has a low Individualism Index (IDV) at 14 out of 100, which is also lower than other Asian countries (average 23) and other countries in the world (average 43). The low IDV index indicates that Indonesia is a strong collectivist society. In a strong collectivist society, education is considered as a one-ride ticket to get a higher position in the society rather than self-respect that comes with mastering a subject. Education is reserved for the younger generations. Being senior, one is expected to pass on

knowledge and wisdom, but there is no expectation for lifelong learning. Therefore, when a teacher obtains five years of practice, they often consider themselves as more experienced and knowledgeable, so no further education is needed. Improving one's experience to maintain ongoing professional learning process may no longer a priority at this stage.

Another facet of this Cultural Dimension is the relationship between experience and reward. Years of practice are the door to a better professional reward. The new Law provides sufficient incentives for teachers to get their certification. A teacher will get at least double their base salary as a civil servant if they become professionally certified. Thus, a common purpose for TPD is to get certified and receive the reward rather than ongoing professional development benefits.

Ongoing professional learning is a part of a new vocabulary list for most Indonesian educators. These words need to be learnt and practiced in order to improve quality of teachers and subsequently education in Indonesia. Monetary incentives have been introduced to improve teachers' classroom performance. Providing new challenges, methodologies, incentives without addressing the core socio-cultural values of learning only will address the problems superficially.

1.6.4   The Role of Technology in Teacher Education

Indonesia has a unique ICT landscape, while many places in the archipelago have not yet been covered with sufficient ICT infrastructure, in other places, like Jakarta or other big cities, there has been a significant growth of technology adoption. In rural areas in West Java, a school might not have an Internet connection, because it is located on a mountain, whereas in the city next to it, like Bandung, the growth in technology is so significant that many people enjoy broadband Internet connections and hotspots.

In terms of Internet usage, there were about 30 million Internet users (out of a population of 243 million) in 2010. This figure grew significantly with up to 9.7 million new users in 2011 (Dewan, 2012) and is expected to triple by 2015 (Blomberg & JG, 2010; Nielsenwire, 2011). In terms of the mobile telephone market, Indonesia ranks the third largest in the world. More and more Indonesians across the archipelago adopt and use mobile technology as a part of their daily life (Soegiarto, 2011). The use of mobile Internet data is increasing and getting more popular. There is currently a tight

competition amongst mobile telecommunication providers to offer high-speed mobile Internet services using 3G and 3.5G HDSPA. Mobile technology and services have provided more options for Indonesians to get connected anytime and anywhere, including in remote and rural areas. The numbers of people using mobile phone and data connections exceed the numbers of computers or laptops users.

In TPD, ICT has been used to facilitate open and distance learning. The largest provider of open and distance learning in Indonesia is Universitas Terbuka (UT or Open University). They provide professional development programs for teachers who want to upgrade their qualifications using various delivery methods, such as mail, radio, fax, television, email and mobile technology. This program seems to answer the needs of teachers from remote and rural areas that cannot leave their workplace to study on campus. Several teacher-training institutes have also started to adopt this model for their teacher training programs. The open and distance learning program is considered to be more effective and efficient for teacher in-service. It can lower the cost by up to 60 percent compared to on-campus programs. The program, however, still faces a lot of challenges, such as ICT access and the ICT literacy of the teachers in rural and remote areas (Kvaternik, 2001; 2002).

With support from international organisations such as the World Bank, the government organised a project called Better Education through Reformed Management and Universal Teacher Upgrading (BERMUTU, which means *quality* in Indonesian). This project was to prepare a framework for teachers to upgrade their knowledge on the subjects they are teaching and their teaching skills through an accreditation system for teacher training course (Jalal et al., 2009; Pannen et al., 2007). This project involved a number of selected universities, which provide teaching and training programs, grants to improve their accreditation status and outreach programs to train teachers in remote and rural areas, mainly using ICT-based approaches through open and distance learning.

ICT companies have also worked in collaboration with the Ministry of National Education in Indonesia, National and Local government bodies and schools to improve teachers' ICT capabilities. One of the largest ICT in education projects in Indonesia was organised by Microsoft through their Partner in Learning (PiL) program. This program aims to empower students and teachers to realise the full potential of ICT-mediated learning. Under this program, teachers are trained in their own schools or districts,

leaders are engaged in collaboration with other leaders at national and regional levels to improve their leadership skills (Lim, Wong, & Quah, 2007).

At the grassroots level, a number of ICT-savvy teachers have started to explore the use of technology for various purposes including personal development. Various online technologies, such as online communities in yahoogroups, e-mail, mailing lists, blogs and online discussion forums have been used to support special interest groups. As this study aimed to investigate the use of OLC as a model for online informal TPD, the researcher conducted an initial review in March 2009 with yahoogroups online community to provide background on how this technology has been used in education. The review found that there were 748 online communities under 'Indonesian education' and 5,548 groups under *pendidikan*, which means education in Indonesian. From the top ten most popular communities under pendidikan, the smallest number of the members was 1,252 people, while the largest number was 10,784 members. However, the number of postings was incredibly less than the number of community members. For example, the average number of postings in the largest education community from January to March 2009 was 21 posting/month (0.2 percent). Most postings were announcements of events and business that were irrelevant to the purpose of the online communities.

The concept of Online Learning Communities (OLC) for TPD was still considered new by most Indonesian educators even though this was not the case for many Western countries. There are already a number of online learning communities in the world that have attempted to facilitate social knowledge construction among educators, such as BECTA (Bringing Educational Creativity for All), Math Forum, TappedIn, PBS (Public Broadcasting Service) for Teacher, EDNA (Education Network Australia), Oz-teacher and Classroom 2.0. The online learning communities have been used as a means to support TPD in Western countries, such as Australia (Duncan-Howell, 2007; Lloyd & Duncan-Howell, 2010; Scott & Scott, 2010; Scott, 2003), Canada (Friesen & Clifford, 2003; Lock, 2006; Scott, 2010), United States (Barab, Makinster, Moore, Cunningham, & Team, 2001; Dede, 2006; Whitehouse, McCloskey, & Ketelhut, 2010) and Finland (Arvaja, Hämäläinen, & Rasku-Puttonen, 2010). The existing studies advocate that OLC is a viable means to cultivate sharing and provide a sustainable support for teachers (Dede, 2000; Lock, 2006). OLC provides an opportunity for teachers to reflect and examine their practice, which can lead to transformative professional development (Windschitl, 2002).

1.7   Organisation of the Thesis

Following this introductory chapter (Chapter 1) is Chapter 2. **Chapter 2** provides a review of the literature for the study and includes critical reading of two main bodies of literature: Teacher Professional Development and Online Learning Community. The chapter concludes with a proposed model of OLC to be contextualised for Indonesia.

Chapter 3 describes the design of the research and the methods used to collect and analyse data. The chapter begins with a review of the literature of Design-Based Research (DBR) with justification of its choice for this study. Four phases of the study including three interventions are described in detail together with ethical consideration and a summary of the methods used to ensure reliability and validity of the analyses.

Chapter 4 describes the design and development of OLC4TPD, an OLC-based TPD model for Indonesian teacher education context. Starting from this chapter, the researcher uses the word *eModerator* in addition to *researcher* to identify her. The word *eModerator* is used to emphasise her role as a moderator who built and nurtured OLC4TPD community.

Chapter 5 presents the professional development journeys of three different educators throughout the study using in-depth narrative case studies to augment the use of OLC in ongoing TPD practice in Indonesia. These are stories of a teacher educator, a school leader and a teacher, who were chosen because of their ongoing participation from prior to after the development of the community.

Chapter 6 discusses the socio-cultural and ICT facets that facilitated and inhibited the development of OLC4TPD and social learning interaction in this community.

Chapter 7 discusses further the social learning interactions that occurred in OLC4TPD, its patterns and impacts on its members' professional development.

Chapter 8 discusses the implications of the study for TPD in Indonesia, its feasibility and a set of guideline for further implementation. The chapter concludes the dissertation, acknowledges the limitations of the current study and provides recommendation for future study.

CHAPTER 2
LITERATURE REVIEW

Overview

TPD in Indonesia faces challenges in fostering a significant change in classroom teaching practice and students' learning achievement. Some identified problems of the existing TPD policy and practice are related to the traditional practice of TPD that do not meet the demands of the 21st century education. This chapter starts by mapping the situation of TPD in Indonesia from the history of TPD and what examples of TPD solutions have been developed to tackle the challenges. As a common concept, community and collaboration seems to be significant in new TPD models. This is followed with further discussion on the concept of online learning community (OLC) as the proposed solution of this study. The researcher will first formulate the concept, describe the key characteristics and finally conclude with a theoretical framework for implementation in Indonesia.

2.1   The Evolution of Teacher Professional Development Practices

Research has shown that many teachers are not ready to deal with the new challenges because they have been raised and educated in a *conventional way* (Friesen & Clifford, 2003), which Haberman (1991; 1992, p. 16) defined as the *Pedagogy of Poverty* (p.16). For the first half of the 20th century, teaching was a matter of recitation, lecturing, note taking, questions and answers. Hargreaves and Fullan (2000) described this as the *Pre-professional Age*. A professional teacher should be able to master the subject, get it across to students, and control the students. Becoming a teacher was an apprenticeship, involving trial and error processes. Only in the 1960s did children start to be considered as significant subjects in the teaching process. In this age of the autonomous professional, teachers had more autonomy in choosing their pedagogical methods. According to him, teachers during this period still held their main roles as the information providers in the classroom. Hargreaves' definition regarding the Pre-professional Age has been taken from the global point of view, however, in reality, there were still many teachers and policy makers in Indonesian education institutions, who still practiced this pre-professional practice when the researcher commenced her study in 2008.

The next period was called the *Age of the Autonomous Professional* (1960s-onward). The improvement of teachers' status and standing during this period gave teachers more autonomy, and the autonomy to be able to use teaching principles that they thought best for their students. The challenge of this period was individualism (Hargreaves 1980). Isolation in teaching without any intervention from other colleagues marked the teaching culture during this period. Collaboration only occurred in small ways and with a small number of colleagues (Hargreaves, 2000). In many Indonesian contexts, teachers started to develop their autonomy in managing their classroom, but in general, the teaching process was still managed centrally by the leadership of the schools and the government.

In mid to late 1980s, Hargreaves (2000) described that there was a significant growth of awareness for collaboration among teachers as a means for professional development processes. He called this age as the *Age of the Collegial Professional.* Pupils were no longer considered as an object in the teaching and learning process, for there was a societal change that pupils should be included in decision-making. The

policy makers mandated the new collaborative structures among teacher colleagues in schools to improve teachers' professionalism. During this period, there were a number of studies conducted to establish a solid knowledge base about the effectiveness of the TPD process in changing teachers' behaviour and influencing student outcomes (Guskey, 1986; Joyce & Showers, 1982). However, Scott (2010) identified in her study that there was a significant gap between the theory of effective TPD and the reality of practice within educational system.

As the fourth period, Hargreaves called it the *Age of Post-professional*, which began at the beginning of the 21st century (Hargreaves, 2000). This period is characterised by globalisation of economics and rapid development of educational technology. This significant change in the world has caused an uncertainty among teachers as well as policy makers, concerning what knowledge is, and what kind of knowledge is valuable to pass on from one generation to the next. Hargreaves (2000) considers this fourth period as a crossroad for teachers' professionalism and the way professional development for teachers should be perceived and interpreted.

The transition from one period to another differs from one country to another - from one school to another. Based on Hargreaves' periodic division, we are currently in the fourth period. Yet, a lot of teachers' mindsets are still in the previous periods. In Indonesia, a large number of teachers still believe strongly in the teacher-centred process of teaching and learning (*pre-professional age*), while the others have started to move to the *age of the collegial professional*. When the researcher started the study in 2008, she encountered several groups of teachers who had been, or had just started, growing their awareness about the importance of collegial collaboration to develop their professional competencies. In 2010, she had an opportunity to meet a group of teachers and school leaders, who have just moved into the post-professional period. The last group of teachers was from RSBI school *(Leading to International Standard School)*. RSBI in Indonesia is a chosen state school that is funded by the Indonesian government to practice teaching and learning process that follow standard practices of an international school, such as bilingual teaching and learning process in English and Indonesian, implementation of international curriculum, such as Australian-school curriculum.

2.2 Teacher Professional Development Reformation

Regardless of its stage, each TPD practice aims to bring a change in classroom practice. TPD is a systematic effort to change teachers' attitudes, beliefs and subsequently the learning outcomes of the students (Guskey, 2002). Teachers' individual epistemological beliefs influence the way they construct knowledge and develop their understanding of learning, knowledge and teaching. For some teachers, learning through one-shot workshops or conferences can inspire a change in a classroom, while the others need to the role of peers or colleagues to keep them progressing or need assistive tools, such as technology to enhance the process of reflective thinking. Despite individual epistemological beliefs, ongoing process of reflective learning (Darling-Hammond, 1994) is an essential element of TPD that needs to present in order to initiate a change in education.

The existing practice of TPD is, however, often carried out as a short-term isolated event, such as one-shot workshop or conference, lecture with guest speakers, and staff meetings focused on policy implementation or pragmatic matters of school procedures (Scott, 2010). This type of TPD usually also applies a top-down approach with gives limited opportunities for teachers' collaboration and reflection. The literature suggests that the traditional forms of TPD are no longer effective in facilitating change of teachers' behaviour in the classroom (Darling-Hammond, 1998; Joyce & Showers, 1980, 1982; Lieberman & Pointer-Mace, 2008).

A significant reformation on the practice of TPD is thus required to address the challenges of the 21st century. A number of recent studies have been undertaken to explore how to conduct TPD in a more effective manner to ensure continual support for 21st century teachers, so that they can enhance their professional competencies and fulfil critical demands of educating students in this era of globalisation (Barab et al., 2001; Duncan-Howell, 2007; Helleve, 2010; Lloyd & Duncan-Howell, 2010; Scott, 2010)

Continuous reflection is one of the crucial elements of TPD to help teachers improve their professional competencies. Helleve (2010) believes that TPD is a continuous reflective activity conducted in a learning community. Instead of holding a TPD as an exclusive activity or in isolation, she suggested to conduct TPD as a collaborative activity in a learning community. Teacher educators from the teacher education institutions and experienced teachers from schools are involved in continuous

reflective activity through action research, where student teachers and novice teachers are included in order to benefit from this social learning interaction. In Asia-Pacific context, the role of mentor teacher/cooperating teacher/supervising teacher is significant for the professional experience of the pre-service teachers (Northcote & Lim, 2009).

Social learning interaction through collegial collaboration in TPD promotes different ways of thinking and empowers teachers. Peer Coaching Study Teams (PCST), a model initiated by Showers and Joyce (1996), emphasised the importance of sustained, in-context, student-focused and collegial support. Instead of going for a TPD workshop or seminar, teachers would only need to go to their peers' classroom and observe the way they implement their teaching strategies and interact with students, while reflecting on their own practice during school hours. They might share teaching materials/resources and have the ability to jointly develop lesson plans. This model has successfully reduced teachers' isolation, fostered novel ways of thinking about practice and reduced teachers' workload through joint planning and resources development.

Collegial collaboration within a school team is a profound practice for a school learning community to improve the quality of learning on an ongoing basis. DuFour and Eaker (2004) introduced the Professional Learning Community (PLC) as a community-oriented model to foster mutual cooperation, emotional support, personal growth and synergy effort. This approach involves the whole teacher community to improve student outcomes together by examining their teaching practice, assessment and student achievement data. This ongoing activity can be conducted within the normal school workdays throughout the year to ensure that all teachers can participate.

Communities within and outside the school have a significant role in influencing the professional development journey of teachers. In the 21st century era, the reality of being a teacher is like undertaking a journey. Lloyd and Duncan-Howell (2010) explained that the social and technological changes of this era are reflected in contemporary schooling. Teachers nowadays have to cope with these changes and master the subjects of teaching. As a result, they suggested that the online learning community (OLC) is a *"flexible, authentic, reflexive and personalised model of TPD to support, guide and inspire teachers"* (p. 60). In an OLC, community members are immersed directly within the context of teaching and learning, which subsequently affects their personal development both *over* time and *in* time. Lloyd et. al. (2005) and Duncan-Howell (2007) used the metaphor of a *journey* to illustrate the learning path that teachers need to undertake in order to reach their professional destination.

Amongst the three examples of TPD from 1996 to 2010, the common denominator in reforming TPD is collaborative practice among teachers in a learning community. Starting from an internal school community, teachers should continually engage themselves in a social learning interaction with external communities of practices (CoPs), where ICT is applied to facilitate TPD process. The next section discusses further the concept of TPD through CoPs.

2.3   Community of Practice (CoP)

Community-based TPD stems from the concept of CoP, which was initially developed by Lave and Wenger (1991), who first discussed CoP as a notion of *legitimate peripheral* participation. CoPs are groups of people who share a common concern or a passion for something they do, and learn from each other to their practice (Wenger, McDermott, & Snyder, 2002). CoPs have three main elements that distinguish them from other communities. These elements are (1) a shared domain, (2) community and (3) practice. A shared domain of interest defines the existence of a CoP. A CoP is not just a gathering or a network of people or clubs or friends. Each participant involved is a member and has a commitment to the domain. The participants must be practitioners, not just a group of interested people. They engage with each other and build relationships in shared activities using shared tools and environments. They help each other and share information within the community. As practitioners, they learn together, develop common practices and share repertoires of resources. These include stories, helpful tools, experiences, and ways of handling typical problems together. The CoP uses a variety of methods like problems solving, request for information, seeking experience of others, coordination and synergy, mapping knowledge and gap, visiting members, and discussion developments.

In TPD, CoP is believed to stimulate the improvement of teachers' professional practice (Lieberman, 1996; Rényi, 1996). CoP is a common place to promote collaborative learning among its members to define problems impacting their professional practice, make decisions in order to solve problems in work practice (McNeil, 1997). In a CoP, teachers are equipped in order to promote continuous inquiries, reflecting and evaluating their, and their peer's, beliefs. Their social interactions with other practitioners in the CoP build their identity and expand their knowledge through the social learning process. This process of social learning is

situated and deeply rooted in a cultural context. This model of learning, as asserted by Barab (2001), cultivates sharing and provides sustainable support for teachers.

The use of ICT in a CoP has added significant value to the process of TPD. There have been a number of recent studies that investigated the use of ICT for an online TPD (Arvaja et al., 2010; Barab, 2006; Duncan-Howell, 2007; Lloyd & Cochrane, 2006; Scott & Scott, 2010; Scott, 2010; Whitehouse et al., 2010). In these studies, ICT has been used extensively to facilitate effective processes of knowledge sharing and construction among CoP members across geographical locations. Some of the identified potential includes flexibility for teachers as community members to engage in ongoing reflective and collaborative learning, anytime and anywhere and sustainable ongoing support for the teachers. Dede (2000) argues the potential of ICT in facilitating the process of knowledge transfer and knowledge construction in the community. He said the following:

> Emerging information technologies enable a shift from the transfer and assimilation of information to the creating, sharing and mastery of knowledge. Active collaboration among educators in developing insights about an innovation is more powerful in fostering effective implementation than simply receiving data about what someone else has done. This shift from assimilation to sharing about the best practices potentially increases both the speed and the effectiveness of generalizing and applying educational innovations. Knowledge mobilization and use must itself mirror the types of shifts desired in educational practice, moving from passive assimilation of information to active construction of knowledge, so that the process is consistent with its content (p. 1).

The next section discusses further the concept of CoP that is built and nurtured in an online environment, which is known as called Online Learning Community (OLC) or *Online Learning Network* (Hiltz, 1998).

2.4   Online Learning Community (OLC)

The concept of OLC has been used in many different ways, including in online education. The idea of learning together in an online environment has been accepted as an *Online Learning Community*. However, some researchers have argued that OLC is more than obtaining information (Schlager, Fusco, & Schank, 2000; Tu & McIsaac, 2001). They have argued that OLC affects how individuals apply pertinent information to knowledge construction and assists them to proceed to the stage of a community that learns together rather than just a community for information sharing. Researchers have

tried to define OLC from four main elements: community, learning, network and technology (Office of Learning Technologies, 1998). Figure 3 illustrates this concept that has been adapted from Tu and Corry's perspective (Tu & Corry, 2002). In this model, social learning is illustrated as a fundamental factor to ensure online participants and the community will grow in their knowledge acquisition.

The concept of CoP (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002) dominates the meaning of OLC. In an OLC, people gather to conduct social learning interaction and share a means of communication because of their common belief. The geographical difference among the participants is not considered as a challenge in this situation.
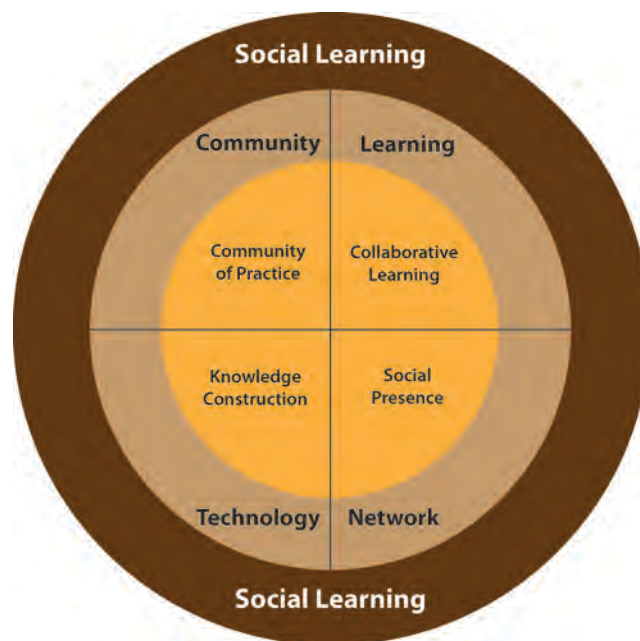
Figure 3. Online Learning Community model (Tu & Corry, 2002)

2.4.1 Community

Becoming an OLC member is the first key step to be part of the CoP. It nurtures a sense of connection and belonging to the community, which provides members with the *"comfort of home, a safe climate, and atmosphere of trust and respect, an invitation for intellectual exchange, and a gathering place for like-minded individuals who are sharing a journey that includes similar activities, purposes and goals"* (Conrad, 2005 p.2).

The members are informally bound through a common problem, a similar pursuit of solutions, for example: to improve student's learning, a passion for continuous knowledge exchange and sharing (Lave & Wenger, 1991; Tu & Corry, 2002; Tu & McIsaac, 2001; Wenger, 1998). Their active participation and integration into a community of practice critically define the survival and procreation of the community (Renninger & Shumar, 2002; Schwier, 2001). Their initial participation as newcomers is perceived as legitimate peripheral participation, which slowly develops, as they become experienced members.

OLC needs to ensure that each of its new members could easily integrate themselves into the online learning environment. As they integrate into the online learning system, they are expected to increase their conviction and engagement in the community. A strong feeling toward the CoP increases the willingness of community members to share information, support each other in a collaborative spirit and efforts and to conclude join activities (Gannon-Leary & Fontainha, 2008; Rovai, 2001). As an effort to facilitate this process, well-planned online learning activities and e-moderating strategies (Salmon, 2002; 2003) need to be developed.

2.4.2 Learning

Learning can occur within an individual through the process of education, yet knowledge, skills, and attitudes can also be obtained through an interactive social interaction. According to Sfard (1998), learning consists of two metaphors, which are *Acquisition* and *Participation*. The acquisition metaphor means the process of knowledge acquisition by the individual learner, while the participation metaphor conveys that cognition and knowing are distributed over individuals and their environments. Learning in a CoP comprises these two metaphors; yet, the emphasis of a CoP is on its social interaction. The social interaction characterises a community. Lave and Wenger (1991) use the term *Situated Learning* to explain that learning happens in context; in interaction with other community members. The idea of gaining value in education through becoming a element of a social group, however, had been conceptualised by Dewey (1938).

The process of learning in a community does not only enrich someone (Tu & Corry, 2002), but also solves problems and changes practice. McNeil (1997) explains that through the process of social learning over time, community members can build a common understanding and unique perspective on particular topics, knowledge,

practices or approaches, which are useful to solve their problems and improve their practice together. This social learning process, as suggested by Bandura (1997), happens through the observation, mental states (intrinsic reinforcement) and modelling.

Each member of a CoP has a unique role to support each other in the social process of learning. Their dynamic individual collaboration in a CoP promotes the process of knowledge building (Scardamalia & Bereiter, 2000). Stahl (2000) considers that knowledge building is a key indicator for an online collaborative environment. If the process of knowledge happens in a CoP, a continual process of idea production and improvement, which are valuable and significant for community members, also happen.

The process of knowledge building in a CoP is a constructivist process. Scardamalia (2002) considers the knowledge building activity in a CoP as a collective responsibility of its members. The success of knowledge production in a community is distributed across all the members rather than being concentrated in the leaders.

This study borrowed the concept of collective cognitive responsibility of knowledge building to investigate the process of social learning in OLC4TPD. The *Twelve Socio-Cognitive Determinants of Knowledge Building determinants* (Scardamalia, 2002, p. 9-12) that was employed to analyse the discourses of OLC4TPD forums is illustrated in the Table 2.

2.4.3 Network

The network in an OLC is described as the pattern of communication and relationship (Schuler, 1996). The network is essential to facilitate the social learning process (Tu & Corry, 2002), which means that through a community network members are empowered to access, share information and motivate to construct knowledge easily.

A network for an OLC can be built and nurtured through the activities conducted, methods of community facilitations and e-moderation applied. A community network does not grow by itself. A development process must take place before it can sustainably support its community members. Salmon (2002, p.11) developed a model of online teaching and learning, which is appropriate for developing nurturing a community network. There are five stages from the access and motivation to the development, which consists of several elements of e-moderation and technical support. These progressive stages of online teaching and learning are applied to

facilitate networked learning, support mechanism, information exchange and knowledge construction process in the OLC. Figure 4 illustrates Salmon's model of online teaching and learning, which are further explained in Table 3.

Salmon's model of online teaching and learning describes crucial phases to enable the community network to empower its members in accessing the OLC environment, engage in the social learning activities to exchange information, construct knowledge and continuously grow their professional development.
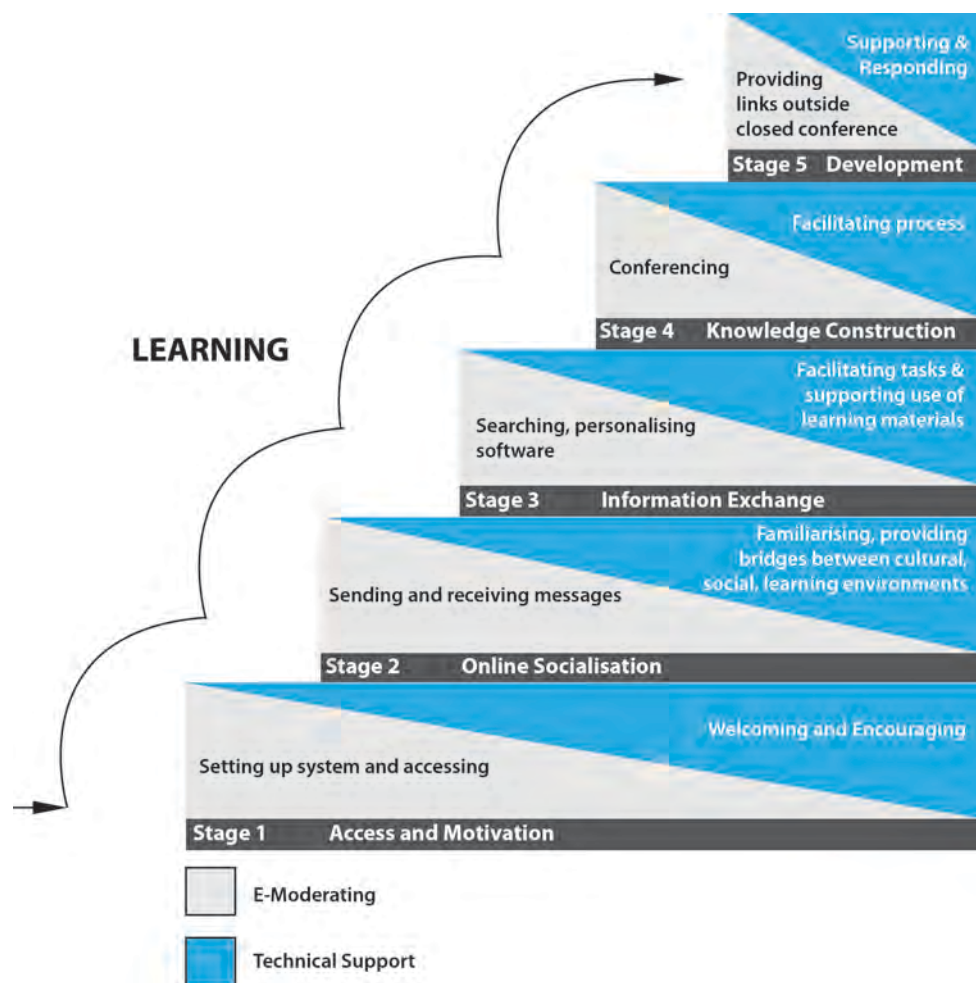
Figure 4. Model of online teaching and learning (Salmon, 2002; 2011)

Table 2
Scardamalia's Twelve Socio-Cognitive Determinants of Knowledge Building

Real Ideas, Authentic Problems (KB1)	Knowledge problems arise from efforts to understand the world. Ideas produced or appropriated are as real as things touched and felt. Problems are ones that learners really care about—usually very different from textbook problems and puzzles.
Improvable Ideas (KB2)	All ideas are treated as improvable. Participants work continuously to improve the quality, coherence, and utility of ideas. For such work to prosper, the culture must be one of psychological safety, so that people feel safe in taking risks—revealing ignorance, voicing half-baked notions, giving and receiving criticism.
Idea Diversity (KB3)	Idea diversity is essential to the development of knowledge advancement, just as biodiversity is essential to the success of an ecosystem. To understand an idea is to understand the ideas that surround it, including those that stand in contrast to it. Idea diversity creates a rich environment for ideas to evolve into new and more refined forms.
Rise Above (KB4)	Creative knowledge building entails working toward more inclusive principles and higher-level formulations of problems. It means learning to work with diversity, complexity and messiness, and out of that achieve new syntheses. By moving to higher planes of understanding knowledge builders transcend trivialities and oversimplifications and move beyond current best practices.
Epistemic Agency (KB5)	Participants set forth their ideas and negotiate a fit between personal ideas and ideas of others, using contrasts to spark and sustain knowledge advancement rather than depending on others to chart that course for them. They deal with problems of goals, motivation, evaluation, and long-range planning that are normally left to teachers or managers.
Community Knowledge Collective Responsibility (KB6)	Contributions to shared, top-level goals of the organisation are prised and rewarded as much as individual achievements. Team members produce ideas of value to others and share responsibility for the overall advancement of knowledge in the community.
Democratizing Knowledge (KB7)	All participants are legitimate contributors to the shared goals of the community; all take pride in knowledge advances achieved by the group. The diversity and divisional differences represented in any organisation do not lead to separations along knowledge have/have-not or innovator/non-innovator lines. All are empowered to engage in knowledge innovation.
Symmetric Knowledge Advancement (KB8)	Socio-cognitive dynamics: Expertise is distributed within and between communities. Symmetry in knowledge advancement results from knowledge exchange and from the fact that to give knowledge is to get knowledge.
Pervasive Knowledge Building (KB9)	Socio-cognitive dynamics: Knowledge building is not confined to particular occasions or subjects but pervades mental life—in and out of school.
Constructive Uses of Authoritative Sources (KB10)	To know a discipline is to be in touch with the present state and growing edge of knowledge in the field. This requires respect and understanding of authoritative sources, combined with a critical stance toward them.
Knowledge Building Discourse (KB11)	The discourse of knowledge building communities results in more than the sharing of knowledge; the knowledge itself is refined and transformed through the discursive practices of the community—practices that have the advancement of knowledge as their explicit goal.
Embedded and Transformative Assessment (KB12)	Assessment is part of the effort to advance knowledge—it is used to identify problems as the work proceeds and is embedded in the day-to-day workings of the organisation. The community engages in its own internal assessment, which is both more fine-tuned and rigorous than external assessment, and serves to ensure that the community's work will exceed the expectations of external assessors.

Table 3
Stages of Online Teaching and Learning

Stages Name	E-moderating	Technical Support
Stage 1 **Access and Motivation**	**Welcoming and encouraging** • Engage participants in online learning activities, while showing the how systems work • Provide a gentle but interesting introduction to using technological platform • Develop e-tivities that enable participants to involved, contribute and start do develop skills for themselves • Mobilise participant's understanding about why they are learning, why in this way as well as what they have to do to take part • Stage 1 is considered over when all participants can get online and frequently visiting the online learning environment	Setting up system and accessing
Stage 2 **Online Socialisation**	**Familiarising and providing bridges between cultural, social and learning environment** • Build bridges and create own micro-CoP through active and interactive online activities. • Promote webs of trust that do not depend on physical meeting – cross-cultural differences • Stage 2 is over when participants start to share themselves online	Sending and receiving messages
Stage 3 **Information Exchange**	**Facilitating tasks and supporting use of learning materials** • Facilitate members in using three main online learning environments for purposeful information retrieval • Develop short activity like 'spark' to initiate action and interaction so participants can become more adept in online learning • Provide ongoing support to participants by responding to problems, replying emails and messaging. • Stage 3 is over when participants learn how to find and exchange information productively and successfully through e-tivities.	Searching, personalising software
Stage 4 **Knowledge Construction**	**Facilitating process** • Develop e-tivities to promote the process of active thinking and online social interaction • Facilitate participants to build their own internal representation of knowledge and link it directly to their personal experience. • Respond and weave together key points of the participants' discussion • Stage 4 is considered over when participants were able to produce a joint outcome together in an independent collaborative activity	Conferencing
Stage 5 **Development**	**Supporting and Responding** • Develop e-tivities that promote and enhance reflection and maximising the value of online learning for each participants (Williams et al, 2001) and group learning experience (Salmon, 2002) • Engage in critical and self-reflective discussion with the community members • Collaborate with participants in guiding newcomers	Providing links outside closed conference

An online network is strongly related to the contextual situation. The socio-cultural aspects influence how a network in a community can grow and sustain the community. Understanding the context is crucial in informing the strategy of building a network for an OLC. Hofstede (1994) with his Cultural Dimension's theory provides a great framework to start an understanding for the context where OLC is built. However, this Cultural Dimension is not the only aspect that defines the sustainability of a community. Community leadership is a crucial aspect for building an OLC network. Regardless of the level of the Power Distance Index of a context, an OLC always need a community leader, who is a well-respected person with special knowledge, has a significant role in building a good relationship with the members, has passions to facilitate discussion on the topics relevant to the domain among the community members (Tu, 2004).

2.4.4   Technology

ICT (CMC or Network Technology) is the main medium of communication in an OLC, which differentiates it from a physical CoP. An OLC can apply both asynchronous and synchronous communication whichever suits its needs. Each type of technology-based communication has it own advantages and disadvantages, which is illustrated in Table 4 (UBC Wiki, 2010).

Asynchronous communication technology uses a time-delayed system (Jonassen, Peck, & Wilson, 1999; McIsaac & Gunawardena, 1996) and is often known as the first generation of the technology (Scott & Scott, 2010). The asynchronous communication technology provides a participant with a space to develop ideas, questions, foster higher order thinking (eg. reflection and synthesizing) and store the members' discussion as resources for further support (Hannafin, Land, & Oliver, 1999), however, the responses from CoP members are not in real time. Some examples of the first generation of communication technology include web 1.0 technology, such as WWW and its user interface, in which users can to retrieve unlimited information from the Internet through the websites, but do not have a lot of freedom to alter the content, and some of early web 2.0 technologies, such as online bulletin boards, forums, blogs and wikis, where users can do more than just retrieving information and have more control over the data (read/write possibilities). These

online learning environments allow members to lodge their postings in an online repository system, to read and comment when desired at their own convenience. Some of the forums can also be synchronous if participants post in the same time frame. Blogs and wikis are the natural progression from bulletin boards and forums that are used to facilitate asynchronous knowledge construction in an OLC. Similar to online journals like bulletin boards, blogs allow writers to share thoughts, activities, documents and photos and other participants to respond. Unlike a blog, a wiki is like a web page, but it is alterable. Wikis have been used for encyclopaedias that are reliant on their contributors' knowledge.

Table 4

Synchronous vs. Asynchronous Communications Technology

Asynchronous		Synchronous	
Advantages	**Disadvantages**	**Advantages**	**Disadvantages**
Available anytime, anyplace.	No immediate feedback.	Real-time collaboration. Immediate response and feedback.	Interactions can be focussed on task-related issues.
Can incorporate a variety of media (e.g., LMS, Google Wave and Elluminate).	Difficult to keep track of collaboration (email overload).	Many low-cost and free solutions.	Lack of reflection between collaborators.
Documentation of collaboration process (ex: cloud technology).	Technology can be costly.	Most useful for 1 to 1 communication.	Instant messaging does not allow for tone of voice or body language.
Can be used for 1-to-1 communication and one to many communication.	Information must be organised and searchable or the information can be lost.	Video/web conferencing allow for body language and tone of voice.	If technology fails the collaboration session not possible.
			Large time commitment for collaborators.
			Difficult for 1 to many communications.
			Lacks documentation.

The second generation of the technology emphasises synchronous (real-time) interaction. Synchronous technology aims to address the drawbacks of the first generation of technology, which is a lack of spontaneity and synergy (Scott & Scott, 2010). With synchronous technology users can have more possibilities to express and communicate their feelings online. Some of the early synchronous online tools

include MSN messengers, AOL instant messenger, Yahoo! Messenger. All of these tools are feasible to access and use easily and they are financially viable. The next step of the second generation of the technology was Voice-over-Internet Protocol (VoIP) technology, like Skype. This technology enables users to have one-to-one and collective communication over the Internet. The recent development of Skype also allows online face-to-face communication over the Internet with multiple users. In addition to that, there were a lot of specific web-conferencing technologies, such as Elluminate Live!, Horizon Wimba and Centra, which can also provide facilities for real-time virtual lectures, online meetings and discussions, Power Point presentations, white-board and more facilities required to support a lecture (Peter & Bell, 2006).

Further development of web 2.0 technologies in form of social networking sites (i.e. Facebook), microblogging tools (i.e. Twitter), social bookmarking sites (i.e. Delicious and Diigo), and self-publishing sites (i.e. Wordpress and Blogger) were considered as alternative tools in this study. These mediums are more popular than the previous web 1.0 or early web 2.0 tools currently, because they generate content from users through virtual communities and are easily accessible through many devices, particularly mobile technologies. Each social media offers a different way of connecting and communicating with other members of community via status updates, short comments, sharing of photos, useful web links or more extensive articles (Cantwell, 2011). The literature suggests that social media have created unique social interactions in online environments (Carter, Foulger, & Ewbank, 2008) and shows a lot of potential to support teachers meeting their needs, such as having a collaboration across geographical locations with local and global colleagues, getting an ongoing leadership support if face-to-face communication with the leaders are limited, enjoying continuous discovery of new information through interaction with other people (Ferriter, Ramsden, & Sheninger, 2011; Roberts & Pruitt, 2003). Scott (2010) added social media is an *elastic* online tool that enables individuals to merge between personal and professional interactions within many organisations. They can share their personal experiences, stuffs and ideas, while collecting ideas and inspiration, reflecting their professional practice.

The use of mobile technology should also be considered a significant factor to facilitate synchronous and asynchronous interaction. The number of people spending time on PCs and mobile phones determine how community members would adopt

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ICT to engage in OLC activities. In a country like Indonesia, the recent research has shown that mobile phone owners and mobile Internet users are surging and increasing every quarter (Eddy & Pratignyo, 2012). The ability of using mobile phones in this context does not guarantee the ability of using computers. As the price of mobile devices and mobile services are going down, more activities are run and more tasks are accomplished through the mobile devices. Technology has become *everyone's toy* and a seamless part of life.

The recent advancement of technology has opened up more possibilities to provide ongoing support for teachers. According to Scott and Scott (2010), the use of ICT in TPD reduces teachers' isolation caused by geographical distance, financial constraints and negative school culture The technology in an OLC engages teachers in the wider process of sharing experience, insights, ideas and suggestions to other members. However, there are a number of challenges that are anticipated in the adoption of the technology for OLC, such as resistance and reluctance of the teachers to adopting the ICT to support their professional development journey (Scott & Scott, 2010), poor technology literacy (Havelock 2004), ICT access, time constraints, and a lack of experience and exposure to use interactive technology for social learning interaction.

2.5 Online Learning Community for Educators in Indonesia

There is now a growing body of literature supporting the need for teachers to be engaged in collaborative working to

> … build strong professional cultures of collaboration to develop common purpose, to cope with uncertainty and complexity, to respond effectively to rapid change and reform, to create a climate which values risk-taking and continuous improvement, to develop stronger senses of teacher efficacy, and to create ongoing professional learning cultures for teachers that replace patterns of staff development which are individualised, episodic, and weakly connected to the priorities of the school (Hargreaves, 2000 p. 165-166).

OLC for TPD is one of the proposed models that support teachers' professional collaboration. It is an open and voluntary form of gathering that involves education practitioners concerned with the general practice of teaching or specialist disciplines or areas of interest (Lloyd & Duncan-Howell, 2010).

OLC is one of the community-oriented models introduced and investigated during the last decade, the Post Professional Age (Hargreaves, 2000), to tackle the challenges of TPD of the 21st century (Friesen & Clifford, 2003; Helleve, 2010; Ketelhut, McCloskey, Dede, Breit, & Whitehouse, 2006; Lock, 2006; Scott, 2003; Wenger et al., 2002). This model has been used to provide ongoing support for teachers to educate their students, while providing teachers with opportunities to reflect on their practice (Barab et al., 2001), especially in several Western countries, such as Australia (Lloyd & Duncan-Howell, 2010; Scott & Scott, 2010), Canada (Friesen & Clifford, 2003; Lock, 2006), Europe (Arvaja et al., 2010) and USA (Barab & Squire, 2004). These studies advocate OLC as a viable means to cultivate sharing, provide sustainable support for teachers and an opportunity for teachers to reflect and examine their practice, which can lead to transformative professional development (Windschitl, 2002). OLC promotes active and collaborative learning processes of teachers with their colleagues to build their professional capabilities on ongoing basis (Helleve, 2010). It offers teachers a forum to discuss change and gather evidence of how successful a change has been made in a classroom (Duncan-Howell, 2007).

The use of ICT (Network Technology or ICT Technology) as a medium of communication in CoP is a crucial factor in facilitating an OLC. ICT has been used to reach out to more educators across geographical locations and time differences, so that they can have greater possibilities to engage in ongoing professional development activities with other educators who share common interests and purposes. In the largest archipelago, Indonesia, teachers and education practitioners live in dispersed locations, which may not be easily accessible. The use of ICT in OLC has shown its potential in alleviating teachers' isolation within classroom, within school district and potentially geographically in remote areas (Guskey, 1986; Scott, 2003) and to provide ongoing support for teachers at their own convenient time (Sorge & Russel, 2000).

Considering the potential of OLC model for TPD in the 21st century, this study investigated the concept of OLC to tackle the current challenges of TPD in Indonesia. An OLC contextualised for TPD in Indonesia was developed based on the model introduced by Tu and Corry (2002). Figure 5 presents a framework for this OLC for TPD study in Indonesia, which was later, called OLC4TPD. This concept was implemented to facilitate non-formal TPD in Indonesia.
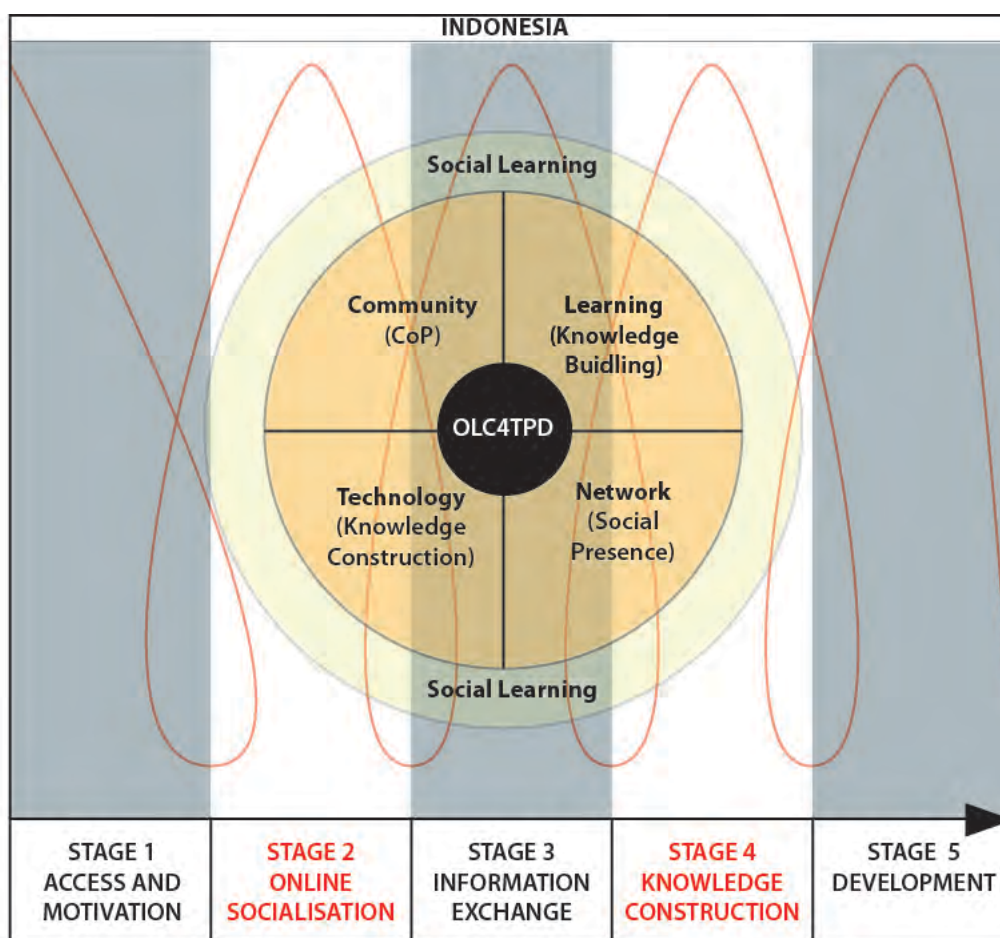
Figure 5. Conceptual framework of OLC in Indonesia

The development and implementation of OLC4TPD was conducted as an iterative Design-Based Research process (Brown, 1992; Collins et al., 2004; Reeves, Herrington, & Oliver, 2005) from the period of 2009 to 2011, which will be discussed in detail in Chapter 5.

Two research questions that guided the study were:

- **Research Question 1**: What facilitating and inhibiting factors of OLC4TPD implementation contribute to the extent to which its members adopt and implement this model to support their ongoing professional development?

- **Research Question 2**: To what extent does social learning interaction in OLC4TPD online learning environments impact on members' professional development?

Salmon's model of online teaching and learning was applied to examine multi faceted aspects of online TPD from different stages of online teaching and learning. Some of the aspects included how the online CoP was built, which technology supported the social learning interaction in the OLC4TP, and how social learning interaction among community members was facilitated through online learning activities.

Figure 5 illustrates the development process of OLC4TPD within the Indonesian context. It involved an iterative collaboration process with users and stakeholders, whose interactions with the researcher were represented with helixes on the Figure 5. The iterative collaboration process particularly happened during the Design and Development (Phase 2) and Iterative Testing and Refinement (Phase 3). The model of OLC4TPD was developed with social learning as the fundamental factors, with Scardamalia's (2002) knowledge building as the lens to investigate it. The process of knowledge building is considered as collective responsibilities of OLC4TPD members instead of an individual's activities. As a new model for TPD in Indonesia, the development of OLC4TPD followed the five stages of online teaching and learning developed by Salmon (2002; 2011).

2.6   Summary

In this chapter, the researcher discussed the shift of TPD practice as a result of societal changes in the 21st century. The *post professional age*, which started in the last decade, has shifted the role of teachers from sole knowledge provider to facilitator of knowledge exchange. Changing perspective of teachers through TPD practice is crucial in answering the growing demands for competent teachers in this knowledge society.

In a knowledge society, social interaction among practitioners (i.e. educators) has been encouraged. Through social interaction, information is exchanged, knowledge is built, problems are solved and innovations are made. The concept of Community of Practice (CoP) has been used frequently to facilitate the social learning interaction among practitioners, including for TPD. Chapter 2 discussed further the significance of CoP to foster social learning among educators.

A CoP can be built on either physical or virtual environment. The focus of this thesis was to develop an online CoP environment, which is often called an Online Learning Community (OLC). Four main elements of an OLC discussed include community (CoP), learning (knowledge building), network (social presence), and technology (ICT – synchronous and asynchronous online learning environments).

The final part of this chapter connected all information from the literature to present a framework for this study. Based on this framework, the researcher designed the study with DBR research methodological framework (Chapter 3), developed the concept of online CoP for TPD in Indonesia (Chapter 4), conducted a feasibility analysis (Chapter 6), analysed the social learning process and impacts of OLC4TPD for members' professional development (Chapter 7) and reflected on the process and developed design principles (Chapter 8).

CHAPTER 3
METHODOLOGY

Overview

The literature review in the previous Chapter 2 provided a foundation for the development of OLC-based TPD in Indonesia. This chapter discusses the methodological framework applied in this research. The researcher applied the Design-Based Research (DBR) methodological framework to address the complex issues of TPD in Indonesia. The DBR methodology tackles education issues through making inquiries and discoveries, in order to seek for new understanding and solutions to tackle problems across disciplines. Based on the existing TPD practices, the researcher developed an OLC for TPD, which was implemented and tested with a number of educators in Indonesia. Further discussion regarding the development and implementation process of OLC4TPD can be found in the Chapter 4, while the design methodology that framed development and implementation will be discussed in this chapter.

3.1   Nature of the Study

The literature suggests that an OLC has a lot of potential to enhance information exchange, learning support, group commitment, collaboration, and learning satisfaction among its members (Dede, 1996; Stein & Glazer, 2003; Wellman, 1999). A number of prior studies on OLC for TPD have been conducted in Western countries, but none had been conducted in Indonesia (2009). Although several early participants indicated that they had been in an online community, the majority of them still considered this a new concept. Thus, there was a wider open door with a great range of possibilities for a further exploration.

In this study, the researcher developed an OLC for supporting existing TPD practices in Indonesia through ongoing TPD facilitation for teachers. The development of the OLC was conducted based on existing theories and TPD practices with OLC in other countries as well as contextual information and feedback from prospective members of the community during the early phase of the study. The development of OLC4TPD consisted of Problem Analysis (Phase 1) and Design Development Processes (Phase 2). The implementation and testing of OLC4TPD in its natural setting consisted of Iterative Testing and Refinement (Phase 3) (see Table 5). During the study, how OLC4TPD could be adopted and applied by educators in Indonesia was investigated. The researcher also investigated the impact of OLC on TPD, its potential and challenges of implementation. The next section discusses further the application of this formative methodological framework.

3.2   Why Design-Based Research?

DBR is a formative research methodology framework initially based on the work of Alan Collins (1992; 2004) and Ann Brown (1992). This methodology has been used to address complex problems in educational settings and make significant impacts in teaching and learning practices. This approach is different from clinical experimentation in the laboratory. A DBR study is conducted on a real world environment to develop *usable knowledge* (Lagemman, 2002).

The learning scientist has increasingly used DBR as their research methodology for the past two decades. There are a number of leading researchers in this field who have consistently introduced this methodology as a framework in improving research in educational technology. This methodology often comes with different names, such as *design experiment* (Brown, 1992; Collins, 1992), *design research* (Bannan-Ritland, 2003), *development research* (DBRC, 2003; McKenney, 2001; Reeves et al., 2005; Van den Akker, 1999; Van den Akker et al., 2006), and *formative research* (Newman, 1990). There has been no consensus on the exact definition of DBR, however, in this research, Barab and Squire's (2004) definition on DBR seems to cover most variations of educational design research*:* "Design-Based Research is not so much an approach as it is a series of approaches, with the intent of producing new theories, artifacts, and practices that account for and potentially impact learning and teaching in naturalistic settings" (p. 2).

What makes DBR different from other research methodologies are its characteristics, which are summarised by Reeves, Herrington and Oliver (2005) as the following:

a. DBR focuses on complex problems

Much of the existing research has failed to provide a robust set of design principles to guide the integration of educational technology into teaching and learning (Reeves et al., 2005). DBR takes educational technology one-step ahead as it is conducted in a natural pedagogical setting. Applying Dewey's inquiry-based learning approach (Dewey, 1938), DBR researchers are involved in a process of making discoveries, in search of new understanding and solutions, in order to tackle complex and difficult problems, across multiple disciplines. Dewey's theoretical work suggested that outcomes from inquiry-based learning are more robust and transferable.

This study focused on complex problems of existing TPD practice in Indonesia, which required multiple perspectives from different stakeholders and tried to find solutions using educational technology. As the study was conducted in its natural pedagogical setting, there were a lot of uncontrolled factors that could not be considered prior the commencement of the study. Readiness of the DBR research to tackle the unknown territory was important. As Brown and Collins stated (Brown,

1992; Collins et al., 2004), these *uncontrolled factors* could also be new opportunities for implementation of new models, such as OLC.

By addressing complex problems in their natural pedagogical settings, DBR aims to make a significant *progressive refinement* (Collins et al., 2004) to existing practice. This study aimed to address several problems of TPD practice, including periodic, top-down; de-centralised practice and one-ride perspective of TPD by introducing an alternative model to support collaborative and ongoing professional development activities. It was anticipated that in-service teachers would be able to shift their perspective about learning through participation in ongoing TPD practice using the OLC. By doing that, teachers' quality would be improved.

b. Integration of design principles with technological affordances

The emphasis of DBR is on its pedagogical methods and not technology that directly influences learning (Clark, 2001). To achieve this purpose, Reeves, Herrington and Oliver (2005) suggested that the role of technology is as a learning support system, which might be developed using a commercial course management system or open source tool kit. In this project, the researcher investigated the use of OLC to support ongoing TPD practice of teachers in Indonesia through social learning interaction.

c. Inquiry to refine the learning environment and reveal new design principles

DBR researchers conduct numerous small and large-scale studies in order to test and refine prototypes of learning environments, while at the same time investigating the feasibility and effectiveness of the pedagogical methods being trialled in the research. In this study, the researcher conducted three interventions in order to test and refine the concept of OLC for TPD.

d. Long-term engagement and refinement of research method

The process of DBR does not happen in a month, a semester or a year. Reeves et. al. (2005) suggested that the normal cycle of DBR is two to five years and it

sometimes becomes an ongoing enterprise for a longer time period. Thus, the use of DBR in the time scale of doctoral research can be difficult to map, therefore a careful project plan was needed to make a feasible study that could contribute to knowledge in the field (Herrington et al., 2007).

e. Intensive collaboration

DBR encourages intensive collaboration of multidisciplinary stakeholders from different organisations or departments. In order to undertake this project, multiple stakeholders from different organisations with a wide range of professional backgrounds, such as in-service teachers (primary and secondary) from schools across Indonesia, pre-service teachers, school leaders (principals, superintendents), government education officers, teacher educators, education researchers, and ICT officers. Their participation in the community opened up a new perspective on how an OLC could be developed and implemented in Indonesia.

Social interaction is one of the key characteristics of DBR. Collins (1992) suggests that this type of research does not endorse social isolation as in laboratory study of learning. This research into OLC was conducted investigate the social learning interaction amongst different stakeholders within an online learning environment. These social learning aspects could only be observed through intensive interaction amongst the participants of the study. Members of the community should be considered as 'partners' in this design process. Their interaction with other participants and with the researcher had helped in creating better design solutions.

f. Theory construction and problem solution

DBR applies existing theoretical perspectives to address problems in reality through iterative design processes. Cobb, Confrey, diSessa, Lehrer and Shauble (2003, p. 10) said *"theory must do real work"*, which implies that design solutions must be derived from theoretical foundations and claims. Reeves, Herrington and Oliver (2005) argued that the core of DBR approach is theory informing practice, and the development of design principles and guidelines in order to transform research outcomes to educational practice. In seeking innovative solutions, it is important that the design researcher interact with practitioners, not only to test the theory, but also to

make practical and effective interventions for existing problems (Van den Akker et al., 2006). In this study, the researcher applied DBR phases to formulate the problems in collaboration with the prospective stakeholders, so that design solutions could be developed.

3.3 Design-Based Research Phases

The stages of DBR process are typically cyclical, which includes problem analysis; design and development; evaluation and revision; and reflection and documentation activities. The cycle is iterated until there is a balance between the ideal and realisation. In this study, the researcher applied Reeves' design-based process (Reeves, 2006) (see Figure 6).
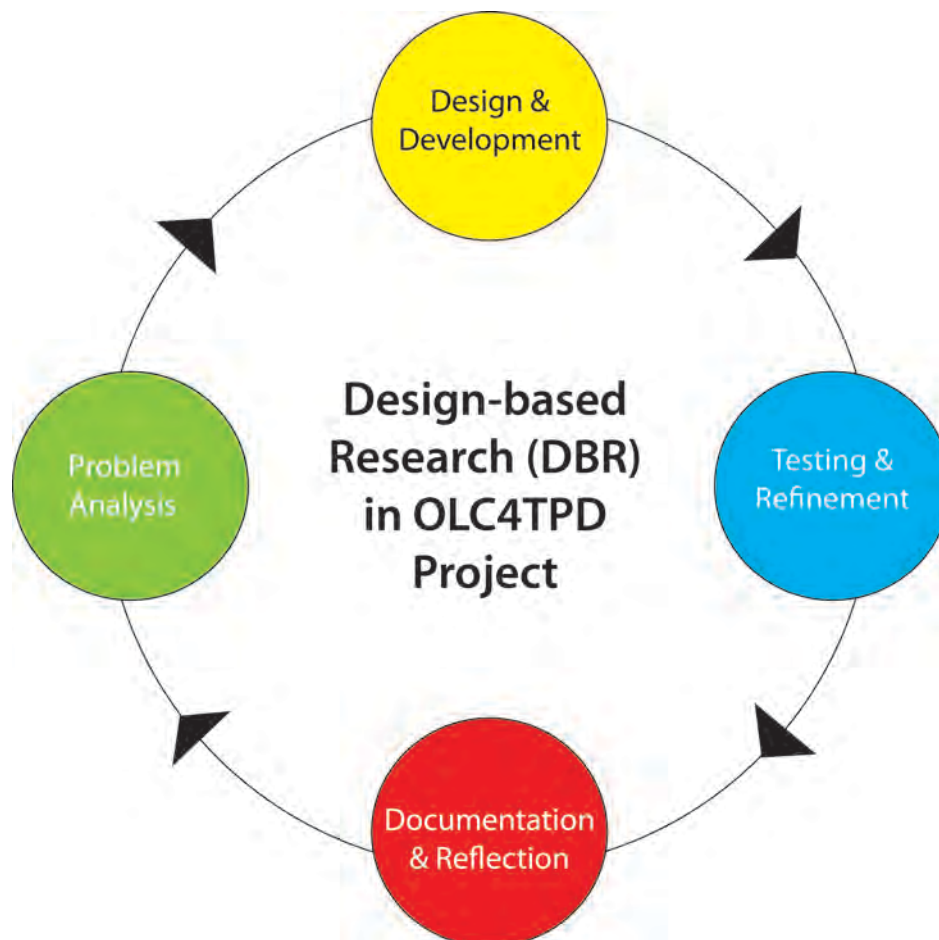
Figure 6. DBR process in OLC4TPD research (adapted from Reeves, 2006)

- **Phase 1 Problem Analysis**: Analysis of practical problems by authors and practitioners in collaboration (See Figure 7)
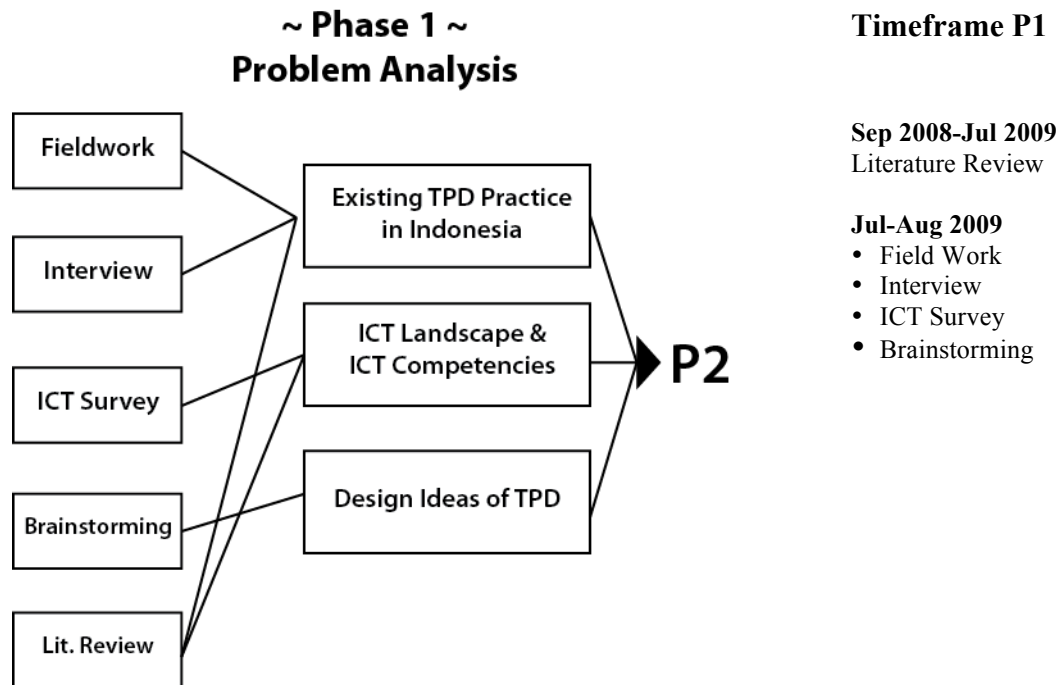
Figure 7. DBR Phase 1 – Problem Analysis

- **Phase 2 Design and Development**: Development of solutions informed by existing design principles and technological innovations (See Figure 8)
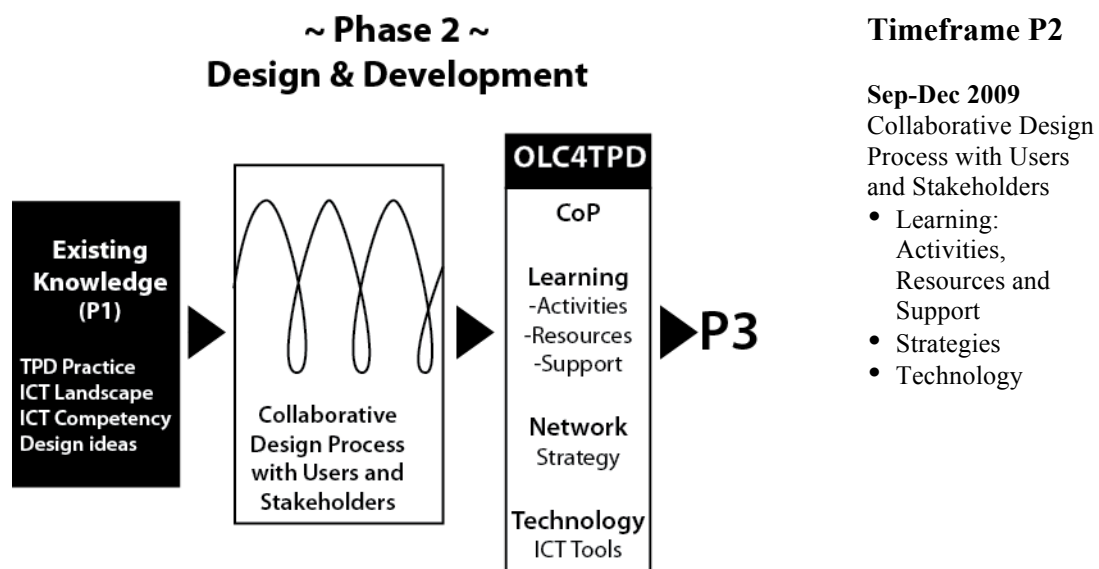
Figure 8. DBR Phase 2 – Design and Development

- **Phase 3 Iterative Testing and Refinement:** Iterative cycles of testing and refinement of solutions in practice (See Figure 9)
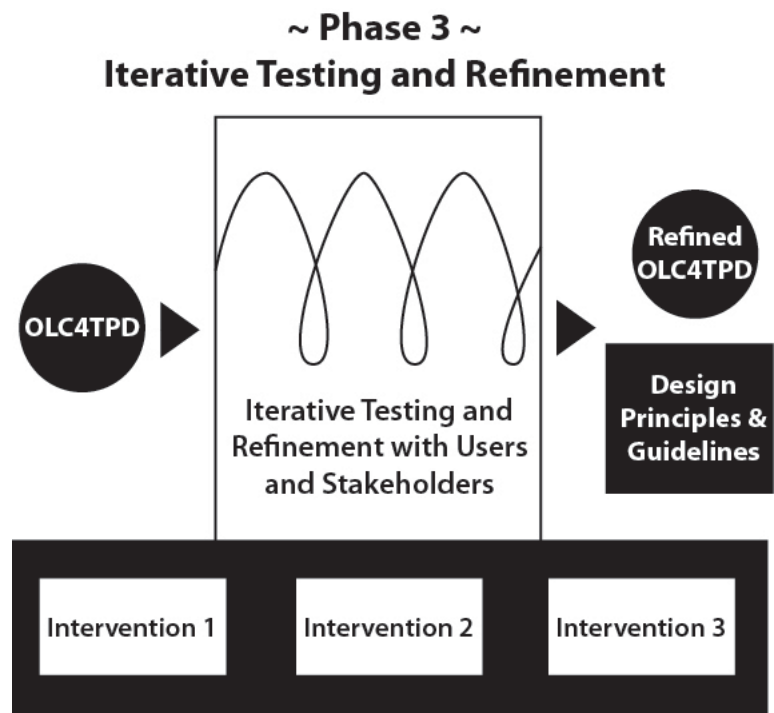
Timeframe P3

Oct 2009 - Dec 2010
Iterative Testing and Refinement with Users and Stakeholders
- Intervention 1
- Intervention 2
- Intervention 3

Figure 9. DBR Phase 3 – Iterative Testing and Refinement

- **Phase 4 Documentation and Reflection**: Documentation and reflection to produce design principles (See Figure 10)
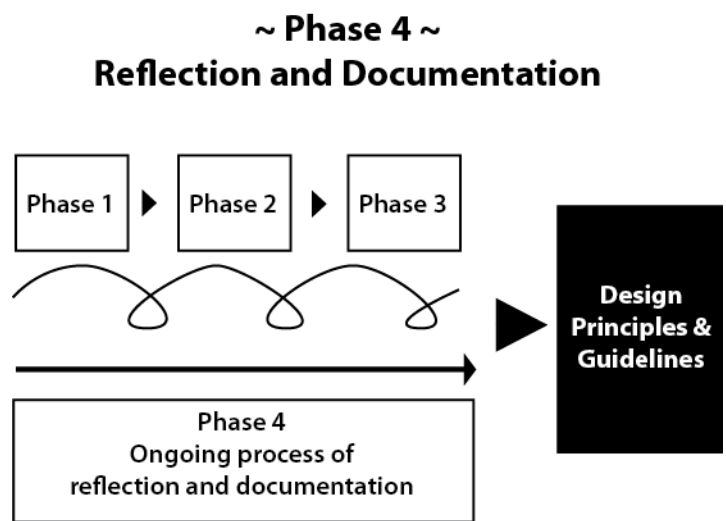
Timeframe P4

Sep 2008 – Feb 2012
Ongoing Process of Reflection and Documentation

Figure 10. DBR Phase 4 – Reflection and Documentation

3.4   Research Procedures

The study was designed with two main stages, which were 1) Design and development of OLC4TPD and 2) Implementation and trial of OLC4TPD. These two stages of the study were part of the four-phase DBR activities conducted in this study. Table 5 provides more details about the DBR process in this study.

Table 5
DBR procedures

DBR Procedures for the OLC4TPD Study		
Design and development		**Implementation and testing**
PHASE 1 Problem Analysis	**PHASE 2** Design and Development	**PHASE 3** Iterative Testing and Refinement
TC, TE, SL, AR	**(TC, TE, SL) + RM**	**TC, TE, SL, RM**
Q4/2008-Q2/09 (+/-10 months)	Q3–Q4/09 (+/-6 months)	Q4/09 – Q4/10 (+/-12 months)
PHASE 4 Documentation and Reflection **RM**: Sep 2008- Feb 2012 (+/-42 months)		

Note. (TC=Teacher, TE=Teacher Educator, SL=School Leader, RM=Researcher/eModerator)

As can be seen in Table 5, the researcher started Phase 1 in the last quarter of 2008 by analysing the practical problems of TPD in Indonesia in collaboration with educators in Indonesia. The researcher conducted a literature review into TPD practice and undertook fieldworks in Indonesia in order to observe the existing practice in Indonesia, which included interviews, brainstorming workshop, ICT surveys and participant observation. All information gathered during this phase provided insight that informed the design and development of an OLC for Indonesian educators used in Phase 2 (Design and Development).

Phase 2 started in the third quarter of 2009, where the researcher started to develop a conceptual design framework of OLC in Indonesia and draft principles to guide the design of the intervention. The researcher started to define the scope of OLC that became OLC4TPD and investigate technologies that could be used for OLC.

During Phase 3, the researcher implemented OLC4TPD with educators in Indonesia. This phase started from the fourth quarter of 2009 and ended in the fourth quarter of 2010. The researcher recruited OLC4TPD *community members* as participants of this study, collected the data from the online learning environments (Web Portal Discussion Forum, Skype and Facebook) and analysed the data collected. There were three interventions, which are illustrated in Table 6.

The documentation and reflection process (Phase 4) was conducted from the beginning of the study. An iterative reflective process to evaluate the concept developed and implemented was conducted from the beginning of the study until the time of submitting this thesis. During this process, the researcher ensured that participants' voices were regularly being listened and attended. The design research process that had been conducted and the development process of design principles and artefacts were reflected to the theories and feedbacks from the participants. At the same time, the researcher conducted professional development and dissemination of the findings to obtain further feedback from academics and practitioners about this new model of TPD.

Table 6
Three DBR Interventions

Intervention	Online learning environment and tools	Learning Activities
First Oct 2009 – May 2010	**Primary**: Web Portal Discussion Forum **Secondary**: E-mail, Wiki and Mailing List	• Asynchronous discussion
Second Nov 2009 – Dec 2010	**Primary**: Skype (New) and Web Portal Discussion Forum **Secondary**: E-mail, Wiki and Mailing List	• Synchronous discussion through online meeting • Continue asynchronous discussion
Third Nov 2009 – Dec 2010	**Primary**: Facebook *(New)*, Skype and Web Portal Discussion Forum **Secondary**: E-mail, Wiki and Mailing List, Google Mailing List *(New)*, Twitter *(New)*	• Blended asynchronous - synchronous through Facebook and Chatting • Continue asynchronous discussion • Continue synchronous discussion

3.4.1 Research Participants

The research participants consisted of teacher educators, school leaders and teachers. Several educators participated prior to the development of OLC4TPD, while the others participated during and after the development of OLC4TPD. Some of the

participants did not join the OLC4TPD activities, while majority registered as community members on the Web Portal, Skype and Facebook. There were 104 members on the Web Portal, 1053 members on the Facebook Page and 45 members on Skype from various geographical locations in Indonesia and overseas (see Table 29 in Chapter 6). The majority of educators who participated actively in this study were from schools and teacher education institutes in West and East Java.

OLC4TPD membership has fluctuated over time and there was an overlap in the membership. The majority of the community members signed up in one or more of the online learning environments to participate in the activities. Skype members (participants who owned a Skype user ID) sometimes consisted of more than one person. In many cases, schools organised their staff to participate in OLC4TPD online meeting using only one user ID, but there could be more than twenty people participating in a meeting from this ID. Yet, these staff often participated individually through Web Portal Discussion Forum and Facebook.

There were three main types of stakeholders participating in the study:

- **Teachers** - In-service teachers worked in state schools (Primary and Secondary) in various geographical locations in Indonesia, primarily in Jakarta, Bandung dan Ponorogo in Java Island.

- **Teacher educators** - Teacher educators worked in the teacher-training institutes, NGOs and universities in various geographical locations in Indonesia, primarily in Jakarta, Bandung dan Ponorogo in Java Island.

- **School leaders** - Principals, school coordinators, and school superintendents of schools in various geographical locations in Indonesia, primarily in Jakarta, Bandung dan Ponorogo in Java Island.

The research participants participated in the study and/or community (OLC4TPD) on voluntary basis. Two percent of the members joined OLC4TPD because they received an invitation from the researcher early in Phase 3. They were invited because of their initial participation in the design workshop, survey, or interviews (group 1) in Phase 1. After receiving their invitation, some of them joined the community directly through the web portal and later on Facebook and participated in the community activities, while the others ignored the invitation. Most of the early members were teacher educators from a teacher-training institute. Ninety percent of

the community members participated in the community because they either found the community themselves on the Internet, in particular Facebook or Twitter, or heard from the other people who had already been members of the community.

As members of OLC4TPD, they were encouraged to participate actively in the community activities, such as contributing to the discussion forum, attending the online meetings, and interacting with other educators. However, there were no compulsory activities unless their workplace set its own rules of participation. The activities on OLC4TPD were largely free-flow discussion. The online meetings were the only moderated semi-formal activities were facilitated. Every community member was responsible for his or her own learning. OLC4TPD only prepared the environment and provided the tools for the community members to develop their professional skills.

3.4.2 Data Collection

The data collected in this study came from different sources and formats, such as ICT surveys, interview transcripts, audio and video recordings, brainstorming discussion artefacts, email conversation, community transcripts from the Web Portal discussion board, Skype, Facebook and field notes and participant observation diaries. Table 7 shows in more details the data collection process used in this study.

a. Interview 1

During Phase 1 *Problem Analysis*, the researcher conducted an interview using open-ended questions to encourage a full, meaningful answer about the participants' own knowledge and/or feelings (see Appendix 7). This instrument was chosen to investigate the reality of TPD practice in Indonesia from different perspectives. Instead of relying on surveys and predetermined questions, the researcher wanted to give opportunities for all participants to share their full thoughts about the professional development that they were undertaking. Some of the teachers received the open-ended questions in written form because they lived and worked in remote areas.

b. ICT Survey

The ICT survey was an instrument adapted from one developed by the Centre for Schooling and Learning Technologies (CSaLT), Edith Cowan University (see Appendices 5 and 6). This survey had been used in a number of large-scale ICT projects in schools throughout Western Australia. In this study, this instrument was adapted for the new use in this project including provisions in both English and Indonesian at the beginning of the study. This instrument was chosen to investigate to measure the ICT competencies of teachers and teacher educators who potentially would join the online learning community.

The surveys were distributed to teacher educators at a teacher institute in West Java and several groups of teachers from West Java and East Java. The teacher educators were representatives of those from teaching institutes in Indonesia, which are usually located in the city. The teachers from West Java were representative of teachers from regular state schools, which are located in rural areas. The teachers from East Java represented teachers from RSBI school *(Leading to International Standard School)*. The surveys for the groups of teacher educators and teachers in West Java were administered during Phase 1 Problem Analysis, while the surveys for the groups of teachers and school leaders in East Java were administered during Phase 3 Iterative Testing and Refinement, because they only started to join OLC4TPD as a group from this phase.

The results of the questionnaire provided a map for the researcher to understand the ICT landscape in schools and ICT competencies of teacher educators, school leaders and teachers in order to embark on the design and development process for OLC4TPD as well as to guide the iterative design and refinement process. The findings from the ICT surveys also enabled the researcher to understand the potential and challenges of OLC for TPD implementation in this context.

c. Brainstorming

The researcher applied Brainstorming techniques, which is a group creativity technique popularised by Osborn (1963) in 1953. The brainstorming technique encourages the production of a greater number of new ideas (focus on quantity), provides freedom to generate ideas without any judgement (withhold criticism),

welcomes a good and long-list of ideas that may provide better solutions (encourages unique ideas), and supports the process of association in order to stimulate the process of building ideas (Osborn, 1963). This technique was applied during the early phase of Design and Development (Phase 2) of the OLC to ensure equal opportunity for the participants to put their ideas forward (UsabilityNet, 2006). The technique was designed to facilitate teachers and teacher educators in exploring creative ideas for the development of OLC-based TPD to solve existing TPD problems by gathering a list of ideas spontaneously contributed by its members. Separate brainstorming workshops were planned for teachers and teacher educators due to socio-cultural issues, such as High Power Distance (Hofstede, 1994, 2009). However, the brainstorming session for teachers could not be carried out due to time constraint and limited numbers of teacher participants in the early stage.

Using Post-it Notes, the researcher facilitated the process of idea generation amongst teacher educators. The researcher categorised the ideas into three main topics, which were hopes, expectations and interactions and discussed with the participants how they envisioned new model TPD that could support ongoing professional development process. The results of the brainstorming session were applied to develop plans and strategies for the design and development of OLC4TPD.

d. Community Transcript

The community transcripts were the collection of discussion transcripts from online communities, which consisted of online discussion, emails, chatting, and document submissions. These documents were coded based on Scardamalia's Twelve Cognitive determinants of Knowledge Building (Scardamalia, 2002). Because of the massive quantity of data collected from cyclical phases of the study, the researcher applied the judgement sample technique, which is also known as purposeful sampling (Marshall, 1996). By using the judgement sampling technique, the researcher actively selected the most prolific samples from the online discourse during the period of October 2009 - December 2010 to answer the research questions. The researcher used both supporting and contrasting samples to avoid any bias in interpretation. This technique was critical to investigate social learning interactions happened in OLC4TPD and examine its effectiveness to support TPD. The community transcripts

provided verbatim what was translated from Indonesian to English to support the arguments developed by the researcher.

e. Participant Observation

This ethnographic-inspired technique was applied in this study as a descriptive approach to observe OLC members within OLC4TPD. The researcher took a role as an eModerator engaging actively in the community activities and making a narrative descriptions based on her observation. Holistic perspective was built based on the observation and interpretations that are made within the context of the totality of human interaction (Mertler and Charles, 2005). Based on the observation, research questions were developed and contextualised data analysis was conducted. The research findings were interpreted and presented with reference to the particular group, setting and event, which was OLC4TPD in Indonesia on various events such as online meetings and online discussions with educational researchers from Australia or Indonesia.

f. Interview 2

For the second interview the researcher used open-ended questions inspired by the *Experience of Change* technique, which was developed by Ainscow, Hargreaves, Hopkins, Balshaw and Black-Hawkinds (1994) (see Appendix 8). Using this technique, the researcher provided individual or group participants with an *Experience of Change* board (ex: sometimes, always, never, occasionally) and *Emotion Cards* (ex: happy, sad, excited, angry, etc). Further details about this technique can be found in Appendix 8. This data collection technique was applied to investigate the true feelings experienced by the participants as they joined OLC4TPD. Learning from their feelings, the researcher expected to learn about the potential, challenges of OLC4TPD as well as the impacts of this community for their professional development process.

Table 7
Data Collection

DBR Phase	Methods	Subjects	Purposes
Phase 1 *(Problem Analysis)* **Phase 3** (Iterative Testing and Refinement)	**Interview 1**	**Teachers and Teacher Educators** (West Java)	Investigated the existing practice of TPD in Indonesia
Phase 1 *(Problem Analysis)*	**ICT survey**	**Teachers and Teacher Educators** (West Java) **Teachers and School Leaders** (East Java)	Investigated ICT landscape and competencies (infrastructure, access and literacy) in related to TPD in Indonesia
Phase 1 *(Problem Analysis)*	**Brainstorming**	**Teacher Educators** (West Java)	Explored design ideas for the design and implementation of OLC for TPD
Phase 3 *(Iterative Testing and Refinement)*	**Community Transcript** Discussion Forum, Facebook and Skype Discussion	**OLC4TPD Members** • Teachers • Teacher Educators • School Leaders • Education Researcher From a number of educational institutions in Indonesia	Investigated the feasibility of OLC4TPD implementation Investigated social learning interaction in OLC4TPD Investigated the impact of OLC4TPD for professional development of its members
Phase 1 *(Problem Analysis)* **Phase 3** (Iterative Testing and Refinement)	**Participant Observation**	**OLC4TPD Members** • Teachers • Teacher Educators • School Leaders • Education Researcher From a number of educational institutions in Indonesia	Participated actively in OLC4TPD synchronous and asynchronous activities and observed how members interaction with the technology and among each other
Phase 3 *(Iterative Testing and Refinement)*	**Interview 2**	**Teacher Educators** (West Java) **Teachers and School Leaders** (East Java)	Investigated the impact of OLC4TPD for professional development of its members

3.4.3 *Data Analysis*

The aim of the study was to investigate how an online learning community could facilitate ongoing TPD of educators in Indonesia. The data were obtained from

a variety of sources (allowing triangulation) and analysed to answer the research questions. Table 8 provides an overview of data analysis procedures.

Based on the data collected from various resources from Phase 1 to Phase 3, that are brainstorming, ICT survey, interviews 1 and 2, community transcripts, participant observation notes, the researcher synthesised them and developed three in-depth narrative case studies of three educators in OLC4TPD that are Adi (teacher educator), Bambang (school leader) and Eko (teacher). Their case studies were presented in a form of professional development *journey* - an analogy borrowed from the study of Lloyd and Duncan-Howell on online TPD (2010) in Chapter 5. These professional learning journeys were used as starting points to discuss the findings for the research question 1 and 2.

Table 8
Data Analysis

Data Sources	Analysis	Purpose
1. Brainstorming 2. ICT survey 3. Community transcripts 4. Interview 1 5. Interview 2 6. Field Notes 7. Participant Observation Notes	• Synthesised of the data from multiple resources. • Presented in a form of professional development journeys in Chapter 5.	• Developed three in-depth narrative case studies of a teacher, a teacher educator and a school leader.
1. ICT survey 2. Community transcripts 3. Interview 2 4. Participant Observation	• Found common themes from these three data sources. • Compared the case studies with whole members of community. • Validate data with the second interview • Report in Chapter 6.	• Answered Research Question 1
1. Community transcripts 2. Participant Observation Notes	• Analysed social learning interaction using Scardamalia's Socio-cognitive Determinants of Knowledge Building (2002) and Hofstede's Cultural Dimensions (1994, 2009). • Derived impacts from the social learning interaction and its patterns, borrowed Scott's Web-enhanced Practice (2009) to present the impacts.	• Answered Research Question 2

To answer the first research question: *What facilitating and inhibiting factors of OLC4TPD implementation contribute to the extent to which its members adopt and implement this model to support their ongoing professional development?* The researcher particularly used data collected through ICT surveys conducted during Problem Analysis and Iterative Testing and Refinement phases from teacher

educators, school leaders and teachers in West Java and East Java. This data was then triangulated with the community transcripts collected from three main online learning environments (Web Portal Discussion Forum, Skype and Facebook) and notes taken from Participant Observation in OLC4TPD online learning environments conducted during Iterative Testing and Refinement. The community transcripts were taken from the open discussion conducted by the participants at the Web Portal Discussion Forum, Facebook and Skype. The researcher identified common themes derived from these data sources. As the researcher found the common theme, she used the three case studies to compare with the rest of the communities. The researcher then conducted the second interview to validate the results of this analysis. The findings are reported in Chapter 6 to answer the first research question.

To answer the second research question: *To what extent does social learning interaction in OLC4TPD online learning environments impact on members' professional development?* The researcher particularly used data collected from community transcripts of three main OLC4TPD online learning environments (Web Portal Discussion Forum, Skype and Facebook) and the notes taken by the researcher as the participant observer. The data was analysed based on Scardamalia's Socio-cognitive Determinants of Knowledge Building (Scardamalia, 2002) and Hoftsede's Cultural Dimensions (Hofstede, 1994, 2009) to understand social learning interactions of OLC4TPD members in the community. From these social learning interactions and its patterns, the researcher derived the impacts of OLC4TPD for teachers' professionalism. The researcher borrowed Scott's Web-enhanced Practice concept to present the impacts within the context of OLC4TPD in Indonesia. In addition to the main instruments for data gathering mentioned above, iterative reflections from the researcher (who has the same nationality as the participants and engaged actively as the e-moderator of the study) would also be considered as one of the primary sources of data to answer this research question.

3.5   Documentation

The documentation process was conducted from the beginning of the study. All data collected during the fieldwork prior to the research were carefully

documented. The process of design and development of the OLC were written as a researcher's diary. The social learning interaction on the asynchronous discussion forum and Facebook were documented online. The synchronous online discussion on Skype was recorded using Screenflow (telestream.net) application using an Apple Macintosh computer and audio recorder. All photos, papers, journals, and presentations shared by the community members were saved on OLC4TPD wiki and online repository on the Web Portal.

3.6   Ethical Considerations

This research followed the university's strict ethics guidelines to protect the rights of the participants and ensure that the research was conducted in a fair and equitable manner. The University's Ethics Committee had to approve and monitor all research conducted within the University using human or animal subjects. The following sections describe how ethical issues in the conduct of the research were addressed.

a. Informed Consent

In this study, the researcher provided the participants with a consent form, which contained clear information about the nature of the study, including how they could participate in the study, in particular in the OLC. The information about participation in the project and its implications were further elaborated in the OLC environment. The participants had the rights to ask to the researcher any questions related to the project (see Appendices 1-4) or withdraw at anytime.

b. Possible risks to participants

There were no anticipated risks to participants in the study and all participation was voluntary.

c. Payment for participation

There was no incentive payment to be a part of the research. The participants agreed to take part in the research without any compensation. Certificates of appreciation and participation were provided to participants who contributed in the OLC for a minimum of ten online meetings.

3.7 Validity and Reliability

Validity and reliability are critical elements of any research study, however, there has been much discussion among qualitative and quantitative researchers regarding these concepts. Some qualitative researchers are against the concepts of validity and reliability, while others simply state that they refer to validity and reliability differently than any quantitative study. These researchers refer to valid and reliable qualitative research as research that is "plausible, credible, trustworthy and therefore defensible"(Johnson & Christensen, 2004, p. 208). Johnson and Christensen (2004) suggest that one potential threat to validity is *researcher bias*, which is the fact that researchers tend to find what they want to find and write up their results. This study adopted the *reflexivity*, in which the researcher actively engaged in critical self-reflection about his or her potential biases. Several other strategies that the researcher did to maintain the validity and reliability of the research included: interpretive validation; and internal validation.

a. Interpretive validation

This validation is about portraying accurately the research participants' viewpoints, thoughts, feelings, intentions and experiences in order to report it in the thesis. In order to get accurate interpretative validity, the research had to get inside the heads of the participants, look through their eyes, see and feel what they see and feel (Johnson & Christensen, 2004).

As the researcher was a native Indonesian language speaker and Indonesian-born she was in a good position to understand deeply all conversation (included hidden meanings) expressed by the participants in both online and face-to-face meetings. In order to validate her interpretation, *Participant Feedback (Member Checking)* was used in interviews, informal online discussions, and surveys to clear up any misunderstanding or misinterpretation.

The researcher also used *verbatim quotation* as the *Lowest-inference Descriptor*, in which she used direct quotations translated from Indonesian to English to support the findings of her thesis. Significant examples of verbatim quotation from

the Web Portal discussion forum, Facebook, Interviews and Surveys have been used in this thesis.

b. Internal validation

This validation refers to the degree to which a researcher is justified in concluding that an observed relationship is causal. To improve internal validity of this research, the researcher has used *methods triangulation*. As method triangulation, the research has intermixed different methods of data collection (e.g., interviews, questionnaire, observation, brainstorming, community transcripts), in which each of them has its own weakness and strengths.

3.8   Researcher Roles

The researcher assumed multiple roles in this study that include the following:

a. Design-Based Research (DBR) Designer

In this DBR, the researcher's role was not only as the observer, but also the design researcher, who took the responsibility in initiating the interventions, developing design solutions and reiterating the design process. The researcher was involved directly with the practitioners during the participant observation, interviews and online moderation. As a DBR researcher, the author tried to understand the participants by interacting in a form of discourse in order to understand their *"beliefs, experiences, feelings and intentions"* (Mishler, 1986, p. 7). The researcher's subjective perceptions were triangulated through day-to-day online conversations and interactions with the community members. The rich insights that resulted inspired the process of designing an OLC, design solutions in a form of guidelines and design principles.

b. eModerator

Besides acting as a DBR researcher, the researcher also assumed a role as OLC4TPD eModerator and following eModerator guidelines developed by Salmon (2011). The researcher managed to run the community for educators in Indonesia. This included technical and moral support for the members, while at the same time organizing online learning activities to engage the community members in collaborative learning activities. Strategies were developed to improve membership and enhance the online identity of the community.

While acting as the leader of OLC4TPD, the researcher also had to be in a position as a participant observant who did not interfere in most of the online discussions. This, however, proved difficult in the beginning of the study, because most of the participants were not familiar with the new method of TPD. As time went by and the members became more used to the idea, and self-initiated actions in the community, the researcher only participated when the forum needed a re-direction.

3.9   Summary

Chapter 3 has discussed Design-Based Research (DBR) as the methodological framework chosen for this study including the rationale for the implementation of the methodology. A series of data collection procedures was described, in which the researcher explained how different types of educators have participated in different times and environments (physical and virtual) in this study. The data collection and analysis were discussed. It was explained in detail how each phase of the DBR framework was conducted in this study. Having explained how this research has been designed, the researcher will continue with discussing the process of design and development of OLC4TPD (Online Learning Community for Teacher Professional Development) within DBR framework in the next chapter, Chapter 4.

CHAPTER 4

ONLINE LEARNING COMMUNITY FOR TEACHER
PROFESSIONAL DEVELOPMENT (OLC4TPD)

Overview

This chapter discusses the design and development of OLC4TPD to support ongoing TPD in Indonesia. Established on the 15th October 2009, OLC4TPD was a non-formal independent online learning community developed through an iterative DBR process, as discussed in Chapter 3. Chapter 4 discusses the OLC4TPD, which was developed based on the contextual needs of TPD in Indonesia and was tested in natural settings with educators in Indonesia during the 2009 to 2010.

4.1 Designing OLC4TPD

Based on the results of ICT surveys, first interviews and a brainstorming session conducted during DBR Phase 1 *(Problem Analysis)* and a literature study on TPD and OLC, an OLC-based TPD model, which is called OLC4TPD, for Indonesian educators was developed and implemented.

OLC4TPD was meant to support the existing TPD practices in place. During Phase 1, it was found that there were still a large number of teachers who struggled to access the professional development support provided by the Indonesian government for a variety of reasons. This was particularly the case for teachers who worked in rural and remote areas, because many of the current TPD practices still focused on teacher-centred approaches instead of collaborative approaches, and often only in the format of face-to-face interaction. OLC4TPD was then developed to provide flexible and ongoing supports for those teachers.

Inspired by the description of the OLC concept by Tu and Corry (2002), the researcher developed the OLC4TPD using four main elements of Community (CoP), Learning (Knowledge Building), Network (Social Presence) and Technology (ICT) during DBR Phase 2 *(Design and Development)*. As the fundamental concept of the community, social learning is an integrated part of these four elements.

OLC4TPD was iteratively tested and refined with a group of teacher educators, school leaders and teachers during DBR Phase 3 *(Iterative Testing and Refinement)*. The implementation process of OLC4TPD was examined using Salmon's (2002; 2011) online teaching and learning model (see Table 9). During Phase 3, three main interventions were conducted. These interventions were made based on three online learning environments (Web Portal Discussion Forum, Skype and Facebook), which will be discussed further on Section 4.3 about Technology.

This chapter discusses how four components of OLC4TPD were developed and implemented throughout the study.

Table 9

Framework of Online Teaching and Learning in OLC4TPD

	Stages	Elements to investigate
1	**Stage 1. Access and Motivation**	• Introduction of OLC4TPD as an online CoP for teachers in Indonesia *(community)* • The process of learning of new TPD model *(learning)* • Role of eModerator to build a common understanding about learning and contributing in OLC4TPD *(network)* • Technical problems experiencing by community members in accessing and using OLC4TPD system *(technology)*
2	**Stage 2. Online Socialisation**	• Building a CoP among educators in OLC4TPD *(community)* • Development of online learning activities support social learning interaction in OLC4TPD *(learning)* • EModerator's facilitation and intervention in social interaction at OLC4TPD *(networks)* • ICT support in the development of a CoP *(technology)*
3	**Stage 3. Information Exchange**	• Engagement of OLC4TPD members in collaborative activities to exchange information *(community)*, • Online learning resources to support information exchange *(learning)* • EModerator's facilitation in information exchange process *(network)* • ICT to support information exchange *(technology)*
4	**Stage 4. Knowledge Construction**	• Social learning interaction in OLC4TPD to construct new knowledge *(community)* • Process of transforming information into knowledge *(learning)* • EModerator's facilitation in social knowledge construction *(network)* • Effective ICT tool to promote collaborative process of knowledge construction *(technology)*
5	**Stage 5. Development**	• Creative and independent social interaction to build new knowledge *(community)* • Learners' transformation from information seekers to reflective practitioners in the social learning process *(learning)* • Collaboration between eModerator and experienced members in e-moderation *(network)* • Seamless facilitation of ICT in ongoing social knowledge construction process *(technology)*

4.2 Community: Community of Practice (CoP)

Building an online CoP was the initial requirement for developing OLC4TPD. The Community of Practice (CoP), as introduced by Wenger (1998; Wenger et al., 2002), is the core element of an OLC. The CoP members gather because they share a similar value of working together. Together, they build a mutual understanding to address common problems and create a shared repertoire in the form of language, routines, sensibilities, artefacts, stories, and styles through their interaction with other members to improve the practice.

As the first step of the study, the researcher invited the participation of teachers, teacher educators and other related stakeholders who shared a common purpose in improving the education quality in Indonesia. A group of teacher educators and teachers in West Java participating in *Lesson Study (Jugyoukenkyou)* to leverage their professional competency (Hendayana, Suryadi, Supriatna, & Imansyah, 2009) became the first target group for this study and had their own physical CoP. They had a vision to improve the existing TPD through collegial TPD activities.

The members of the *Lesson Study* had met regularly either at local schools or district government venues. They had conducted periodic TPD using this approach for the last ten years. Although their TPD approach had had a significant impact on several local schools, this approach had not been widely disseminated across Indonesia. *Lesson Study* received great amounts of funding from the Indonesian and Japanese governments and other NGO organisations, but there were still many schools in the country that had never heard about *Lesson Study*. The main contributing factors that impeded this approach were related to time and human resources. Regardless of their existing practice, this group of educators was an ideal target for this research because they had already developed a CoP that had a similar goal to OLC4TPD.

This existing local CoP had a common value that is shared by most Indonesians, referred to as *gotong-royong*. The value of working together is called *gotong-royong* and this has become a key identity of the nation. This value is profound for an OLC. The ability to work together with other members as a part of a social learning process is crucial to maintain and improve a community. In an OLC context, the process of working together would be facilitated with the use of ICT.

The next stage was leveraging a physical CoP to be an online CoP with the enhancement of ICT. The researcher envisioned this stage would be challenging as the results of an ICT survey conducted earlier in this study suggested that all participating teachers, and more than half of the teacher educators (62 percent), did not know much about an online community. Sixty percent (60 percent) of the teachers did not know about online learning environments, while fifty percent (50 percent) of the teacher educators only had some basic knowledge about online learning environments (See Chapter 6). In order to build an online CoP, the first stage of *Access and Motivation* must be passed (Salmon, 2011), which meant that the

researcher had to ensure that every participant had some basic common understanding about online learning environment and tools before social learning interaction could happen.

In order to establish common ground for an OLC, a brainstorming session was conducted in August 2009. The teacher participants were unable to join in this process because of their remote locations in rural areas. However, they shared their insights through written open-ended interviews. There were 23 teacher educators from a teacher-training institute in West Java who agreed to participate in this workshop. The workshop aimed to build a common understanding about OLC among the participants that is teacher educators, based on their existing knowledge. It was envisioned that the participants would be *at the same boat ready to sail together* and build an OLC.

Based on the key points addressed during the brainstorming (see Table 10), the participants showed that they had a common pursuit in their professional development journeys, which was to have an opportunity for constructing their knowledge in collaboration with others. By doing that, they aimed to continually develop their professional capabilities in teaching and learning. They had an initial perspective about OLC4TPD that could be a potential means to facilitate ongoing TPD process in Indonesia. Based on their prior experience and knowledge of ICT, they suggested several online learning environments and tools that they had used in their personal and professional lives (Table 10). They had an expectation that by using those online learning environments and tools, they could build an online system that enabled them to communicate with other educators more easily and update themselves with information anytime. They looked at different areas of learning in an OLC that would be useful for them, which included specialised subjects, educational leadership, ICT-based learning and general pedagogy (teaching and learning).

Table 10
Brainstorming Outcomes

Shared pursuit: Co-construction of knowledge	Ultimate Goal: Ongoing Professional Development
• Knowledge and research dissemination, • Knowledge sharing, • Knowledge building, • Problem-solving	• Teacher's literacy improvement, • Engaging science teaching and learning, • Effective learning

Online learning Community (OLC) as medium

Email, Discussion Forum, Blog, Milis (mailing list), SMS, Facebook, Chatting, Yahoo Messenger/Instant Messaging, Web-based (Website/portal), mobile phone

Expectations:

Reliable connection, communication among educators, real-time communication, Ongoing communication, mobile-based learning, online discussion, online help and chat facility, fast and up to date information and fruitful online community

Areas of Learning

- **Specialised subject**: Math education, environmental education, ICT-based education, science teaching and learning, science management, science standards.
- **Education Leadership**: school community reflection, school development, and school science.
- **ICT-based learning**: Video-based learning and analysis, innovative learning, pedagogy and technology development
- **General Pedagogy**: Design research, activity-based research, lesson study - collaborative open-lesson for lesson study, reflective teaching and learning, curriculum and material development, teaching and learning development.

All workshop participants shared the importance of ongoing professional development conducted through an online environment in order to improve the quality of TPD in Indonesia. Discussions on the forum supported the findings from the workshop. The following are insights from teacher educators about the importance of OLC in professional development (translated from Bahasa Indonesia and pseudonyms were used).

> As an ordinary person who is new to an online learning community, I do not really know what the characteristics of online learning community should be. However, as a newcomer in this area, I feel that my need or purpose for joining OLC4TPD is to get an opportunity to actualise myself, where I can share my research and get different perspective feedback from other members of the community. In addition, I can easily share and access updated information, particularly in the fields of education and science teaching, through interaction in this community. *Amir, a male teacher educator* [DB: 23 October 2009]

> My idea is that OLC4TPD could be projected to be (1) a community that has a database useful for teacher professional development (2) a community that can investigate problems related to teacher professional development from the

database accessible by its member (3) a community that can conduct research limited to the context of solving the problems of teacher professional development (4) a community, whose members can produce publications based on its findings from its research in national and international journal. Thank you. *Adi, a male teacher educator* [DB: 26 October 2009]

I agree with all of you that OLC should be directed for teacher professional development, but please do not limit the opportunity for other educators to provide the wider inputs and ideas that we need. Maybe, if there are more teacher friends, the activity can be designed as a venue for sharing experience, such as teaching material, PCK (Pedagogical Content Knowledge) ideas, PMS (Performance Management System) that have been developed" *Heri, a male teacher educator* [DB: 13 November 2009]

These teacher educators shared a common insight about OLC. They all believed that OLC is a venue for sharing and learning among its members. Adi said that through an OLC members could refer to and access any learning resources that could be useful to solve the problems in practice. Amir said that the OLC could be used as a means for self-actualisation. He could share his work and get feedback from others. All three of them emphasised the possibility of constructing new knowledge through social learning interaction with other members. Having reached a mutual understanding about OLC, the next step was to facilitate ongoing social learning interaction among its members.

Membership is the next essential step in building a strong sense of trust and belonging among community members. By becoming members, the participants had more possibilities to engage in the ongoing process of learning in an OLC. As an eModerator, the researcher continually encouraged interested people who shared common values and mutual understandings to commit themselves to be OLC4TPD members either through the Web Portal, Facebook or Skype. To register themselves as members of a community was not an easy task for most people participating in this study. Nevertheless, in this strong *collectivist* society (Hofstede, 1994), most people believe in the importance of being part of a group (community).

The eModerator had to enlist a core group of people to encourage other people to join and participate in the community with their own motivation. The eModerator invited several teacher educators and teachers, who had previously joined in the preliminary study, to be members of the community by email. While some did not reply, as a results of early invitations, there were 13 teacher educators from a teacher

institute and a non-profit organisation from West Java and only 3 in-service teachers from three different schools from West Java (Sari, 2010) and 4 education researchers who became the seeding members of the community. These 20 people were recruited before the membership of OLC4TPD started to increase of its own accord.

The participants joined in OLC4TPD through different pathways. To be an OLC4TPD member, one had to agree to terms and conditions that the researcher had developed for the community. Initial members joined the community mostly through the Web Portal. The second generation of members came through both the Web Portal and Skype. Many participants joined the community mainly because of their interest in asynchronous online meetings. They were mostly friends of initial members, who heard about the community by word of mouth. The third generation of members joined the community through Facebook. They joined the community of their own initiative. As they joined through OLC4TPD Facebook, some of them also joined the membership on the Web Portal and sometimes Skype as well. As of December 2010, there were a substantial number of members who had participated in OLC4TPD (see Table 11)

The growth of initial membership on the Web Portal was below expectation. There were only 57 percent of the total number of teacher educators ($n=23$) and only 7.5 percent of the total number of teachers ($n=40$), who responded to the invitation to join OLC4TPD. Two of the teachers participating in the community were ICT teachers, while another one was an ICT-savvy young female teacher. The slow growth of membership during the initial study was due to ICT access and literacy (see section 6.2). Although membership was voluntary and free of charge, limited ICT access and literacy hindered the early adoption of the OLC.

Table 11
OLC4TPD Membership (Oct 2009 - Dec 2010)

	Period	Online Learning Environments	Total Membership
1	Oct 2009 – May 2010	Web Portal Discussion Forum	104
2	Nov 2009 – Dec 2010	Skype	45
3	Nov 2009 – Dec 2010	Facebook	1053

4.3 Technology: Online Learning Environments

Technology, which is often called ICT, is one of four main elements of an OLC. Without ICT, OLCs could never exist. ICT has been viewed as a revolutionary networking tool to build OLCs, strengthen relationships and mobilise joint planning and community action (Office of Learning Technologies, 1998). The technology has potential to support independent and ongoing learning, delivering various learning resources in an OLC, and bringing learning participants together in online learning interaction. Previous research into OLCs has suggested that multiple perspectives enhance online learning interaction in an OLC and stimulate a higher level of thinking (Tu & Corry, 2002).

The role of ICT in facilitating social learning interaction in an OLC is crucial, thus, access to, and ICT literacy are the first two requirements that need to be considered. Despite the promise offered by the presence of technology, if access to technology is limited and ICT literacy does not exist, it is challenging for an OLC to grow. As Salmon (2002; 2011) suggests in her online teaching and learning model, the first stage is *Access and Motivation* ensuring every learning participant has the required access before moving to the next stages of online learning.

The results from the ICT survey and the brainstorming session showed that initial access to ICT and ICT literacy were a key consideration in developing an OLC for TPD in Indonesia. While most teachers in remote areas did not have ICT infrastructure including sufficient Internet connection to participate in online discussion, which caused poor ICT literacy (computer usage), the findings suggest that their abilities in using mobile phones and social media (ex: Facebook) were extraordinarily good. Based on these interesting facts collected during the first phase of the study, several online learning environments were selected based on their feasibility to support online learning. They included discussion board/forums, mailing lists, online community groups, email, instant messaging tools, web conference tools, wiki, and a web portal. Tables 12, 13 and 14 summarise the background in making decisions about the ICT online learning environments used for the OLC.

Table 12
Access to Computer and the Internet

OLC4TPD (*n*=100)	Access to Computer			Access to Internet		
	Home	**Office**	**Others**	**Home**	**Office**	**Others**
	87	87	15	32	69	22

Table 13
Length of Use of Computer and the Internet

	Never	< 1yr	1-2 yrs	3-4 yrs	> 5 yrs	NA
Length of Use of Computer (*n*=100)	2	10	8	10	57	13
Length of Use of the Internet (*n*=100)	7	7	24	18	40	4

The results of the early ICT survey and the brainstorming session indicated that e-mail was the most popular ICT tool used for communication for both teachers and teacher educators, followed by the mobile phone and social media, like Facebook and Twitter. Several teacher educators had more experience in using various ICT tools, such as mailing list, discussion forums, Yahoo groups and instant messaging. While all teachers said that they had no experience with an online community on the preliminary survey, the researcher found that many of them had used Facebook as a networking, communication and entertainment tool. In fact, social media (e.g., Facebook) was so popular among the teachers that they used Facebook more often than other tools. Many of them never used email or computers at all, but they used Facebook extensively from their mobile devices. Their fast adoption of Facebook was strongly motivated by their students, who were the early adopters of this technology.

The popularity of Facebook among teachers and teacher educators as a networking, communication and entertainment tool does not necessarily lead to the acceptance of this tool for a formal professional development purpose. The Dean of a teacher-training institute and about half of the teacher educators participating in the workshop disagreed with the idea of using Facebook for facilitating ongoing TPD. It was hard for them to accept that Facebook had a lot of potential to support online social learning. They believed that Facebook was only useful for networking and communication. The Dean said that they preferred a proper web-based online environment to support ongoing professional development and collaborative learning

among in-service teachers and teacher educators in Indonesia. While Facebook was not tolerated, he said that the community could use any technologies that were feasible and affordable. He had a concern about the feasibility and affordability of the technology. He envisioned that the ICT tools for the OLC should be affordable, easily adopted and able to be used continually even after the project ended. In addition, he also emphasised the importance of periodic face-to-face meetings to maintain the community. These early inputs from the Dean and teacher educators were crucial in the design of the study, because they were the prospective stakeholders who had genuine interest and the capabilities to cooperate in building the OLC.

Based on these early findings, the researcher conducted three main interventions, where one main ICT online learning environment was used and learning activities were developed around it.

Table 14
ICT Competencies of Teachers and Teacher Educators

T=74 TE=26	0 (Doesn't know much)		1 (Basic Skill)		2 (Moderate Skill)		3 (High Skill)	
	T	TE	T	TE	T	TE	T	TE
Internet (A1)	17 (23%)	0 (0%)	11 (15%)	2 (8%)	23 (31%)	3 (12%)	23 (31%)	21 (81%)
Email (A2)	18 (24%)	0 (0%)	23 (31%)	3 (12%)	26 (35%)	14 (54%)	7 (9%)	9 (35%)
Blog (A3)	33 (45%)	5 (19%)	18 (24%)	5 (19%)	10 (14%)	8 (31%)	13 (18%)	8 (31%)
Wiki (A4)	33 (45%)	3 (12%)	30 (41%)	14 (54%)	7 (9%)	6 (23%)	4 (5%)	3 (12%)
Podcasting (A5)	56 (76%)	12 (46%)	14 (19%)	12 (46%)	1 (1%)	1 (4%)	3 (4%)	1 (4%)
Social Media (A6)	32 (43%)	8 (31%)	16 (22%)	2 (8%)	20 (27%)	8 (31%)	6 (8%)	8 (31%)
Online Community (A7)	74 (100%)	16 (62%)	0 (0%)	2 (8%)	0 (0%)	4 (15%)	0 (0%)	4 (15%)
Content or File Sharing Sites (A8)	43 (58%)	7 (27%)	17 (23%)	5 (19%)	9 (12%)	8 (31%)	5 (7%)	6 (23%)
Online Learning Environment (A9)	49 (66%)	5 (19%)	18 (24%)	13 (50%)	3 (4%)	2 (8%)	4 (5%)	6 (23%)

4.3.1 Intervention 1 (Discussion Forum)

A discussion forum on a web portal was the first main online learning environment explored (see Table 15). The discussion forum was the first generation of ICT technology (Scott & Scott, 2010), which was suggested by most of workshop participants for facilitating online interaction. They considered the discussion forum as an effective tool to facilitate the knowledge-building process. Most participants were already familiar with this learning environment tool.

Table 15
Intervention 1 (Web Portal Discussion Forum, Oct 2009 – May 2010)

Mode	Asynchronous Online Discussion
Media	**Main**: Discussion Forum (Web Portal) **Secondary**: E-mail, Wiki and Mailing List
Learning resources	1. **Web Portal** (eduatecu.wetpaint.com) with individual member pages. Everyone could read the discussion forum, but only members had access and privileges to join the forum and write on the Wiki. 2. **Discussion forum** with three discussion categories: 1) general education 2) online meetings and 3) miscellaneous. 3. **Wiki** to document all learning materials on the portal.
Learning Activities	1. Members **responded** to sparks (a short comment or question in order to initiate discussions among the online learning community members) given by eModerator on the discussion forum. 2. Members **initiated** a discussion on topics of their interests. Some of the topics raised included pedagogy, teaching and learning, TPD, education system and ICT in education. 3. Members could **collect participation points** as part of OLC4TPD reward system by contributing in the discussion forum
Learning Support	1. eModerator **sent regular announcement** and **information** about OLC4TPD activities, such as online meetings and competition. 2. eModerator **provided** *sparks* before and/or after the online meetings for discussion (**Note**: Spark is one of the methods suggested by Salmon (2011) to provide online learners with a short comment or question in order to initiate discussions among the community members) 3. eModerator **facilitated discussion** on the discussion forum encouraging the members to have reflective thinking, critical evaluation and engage in problem-solving discussions with other members 4. eModerator **invited members to contribute and share** their works and portfolios through OLC4TPD environment 5. eModerator **provided ICT support** when needed
Evaluation	1. **Reward System** for Top Contributors on the Discussion Forum 2. **Wall of Fame** to acknowledge members who have made a significance contribution in the community
Time	No time limit
Language	**English and Indonesian** English was used mostly in the wiki, web portal, while Indonesian was mostly on the discussion forum, email and mailing list.

The discussion forum used was part of a web portal, which was built on the *Wetpaint (wikisineducation.wetpaint.com)* platform. This free platform is a web-based environment that allows members not only to contribute to the discussion forum, but also to contribute through different features available, such as wiki, file and photo sharing and membership sites. Wetpaint allowed the administrator access to set the preferences and permissions for the members to contribute in the learning environment, depending on the needs.

Other supporting ICT online learning environments were email, mailing list and wiki. E-mail was used as the main online communication between eModerator and community members. Mailing list (milis) was applied as the main media to facilitate communication within the whole community. All members received emails from the mailing list to their own email addresses. A wiki was utilised to store all the learning materials, such as articles, journals, graphs and presentation files shared by Hotseat speakers, community members and eModerator. More details about Intervention 1 are provided in Table 15.

The interaction on a discussion forum was considered new by most of the members, thus the initial adoption of this new learning interaction was low. Membership was low and so were the online contributions. Out of 13 postings during the month of October 2009, there were only 5 postings made by community members. The eModerator received several emails informing her that several teacher educators were having difficulties in getting access into the system. They had difficulty in registering themselves as members of the community. One of most common problems was a lack of feedback from *Wetpaint* that would enable members to get a confirmation of whether their registration was successful or not. Several members asked the ICT staff to help them register. Yet, the most important reason for the slow growth and engagement was related to unfamiliarity with online teaching and learning approach. Members suggested that OLC4TPD should also have face-to-face interaction in order to grow the community. The feedback from these members led to Intervention 2, where synchronous online interaction was introduced.

4.3.2   Intervention 2 (Skype)

Bridging the gap between face-to-face and online learning, a synchronous online interaction was introduced during the second intervention (see Table 16).

Table 16
Intervention 2 (Skype, Nov 2009 - Dec 2010)

Mode	Synchronous Online Conference
Media	**Main**: Skype VoIP **Secondary**: Web Portal Discussion Forum, E-mails, Wiki, Mailing List
Learning resources	1. **Skype** with generic ID (OLC4TPD) to hold online professional development conference, seminar, training on fortnightly basis. 2. Providence of **hot seat speaker**s from Indonesia and overseas, who delivered talks on Skype and provided online learning materials on OLC4TPD wiki 3. **Discussion forum** to facilitate asynchronous discussions before and after the online meetings
Learning Activities	1. **Any members with Skype user ID** could join the online meeting 2. Any conference participants should **participate actively in the discussion** by asking questions or making comments 3. Members and participants **participated in the discussion forum** before and after the online meeting
Learning Support	1. eModerator **organised fortnightly online meetings** based topics of interest of the community members 2. eModerator **encouraged preparation** before the meeting and **reflective thinking** after the meeting through the discussion forum. 3. eModerator **invited hot seat speakers** from various organisations in Indonesia and overseas to deliver talks in the meeting. 4. eModerator **provided support** related to online meeting activities (invitation, ICT support, announcement, resources, etc). 5. eModerator **facilitated the online meeting**s by encouraging active discussions among participants. 6. eModerator **interpreted speakers** who did not speak Indonesian and members who did not speak English.

Evaluation	1. **Certificate of participation** for those attended the meetings for 10 times. The certificate can be used to add points for teachers' portfolios that will be used for teacher certification program.
	2. **Construction of knowledge** prior and/or after online meetings, which include the following:
	  • Openness in sharing and reflecting own practice
	  • Implication of the new knowledge on the daily professional activities
	3. **Invitation to be hot seat speaker** to share their professional experience

Time	1.5-2 hours on Friday afternoon (fortnightly)
Language	**English and Indonesian.** Indonesian was used for the discussion most of the time, except if the speakers or some of the participants spoke English or other languages than Indonesia. English would be used in this situation. The eModerator would interpret the discussion simultaneously.

The eModerator introduced the use of Skype to organise fortnightly synchronous online meetings. The participants of the meeting could hear and

participate in the discussion on a specific time without any delay. When compared with face-to-face interaction, participants could talk to each, but could not see each other.

Skype was introduced as the second primary online learning environment after the discussion forum. Skype is Voice over Internet Protocol service (VoIP) that is available for free. It allows many people to communicate through instant messaging and voice chat. While video was available, it needed a large bandwidth that most members did not have, so it was not used. The voice chat allows telephone calls between pairs of users as well as conference calling. The chat conversation can be saved and retrieved in the future. Each Skype user can have their own Skype IDs, customise their own profiles and online status indicators. Unlike other VoIP services, Skype is peer-to-peer system rather than client-service system and it makes use of background processing on the computers running Skype software.

Unlike other online conferencing online learning environments that were examined, Skype was considered more sustainable and affordable in the long run. This free software has been used by millions of people around the world. Anyone can download Skype on his/her own device (including mobile devices and phones) and use it freely for various purposes. It has a large community, which could support us when technical difficulties were faced, such as problems with using videos for multi-users conference (in 2010).

There were, however, several challenges that occurred during the implementation of Skype. The first challenge was related to knowledge and literacy of the technology. Most of the community members had hardly heard about Skype. They only used Yahoo!Messenger or MSN to conduct synchronous interaction. As an eModerator, the researcher had to ensure that all community members were able to get access and improve their ICT literacy in using this online learning environment before they could fully engage in this synchronous online interaction. Another challenge was related to potential connection problems. Many of the community members only had low Internet bandwidth connections either at home or workplace. Various online conference tools trialled previously required high bandwidth connections. With peer-to-peer technology, Skype was the best as it could run on minimum bandwidth, such as that used by the community members.

The researcher decided to use the online learning environment as the most feasible way to engage real-time online interaction among educators across different places in Indonesia. Previous asynchronous online interaction seemed to face a lot of challenges, as Indonesian educators were not used to interact online prior to this research, therefore there was always a big delay in the online discussion. In this face-to-face society, real-time conversation on the phone and/or mobile phone was preferred. Due to cost, Skype has shown a lot of advantages, although potential problems had already been identified. During Intervention 2, the researcher conducted a fortnightly online meeting on Skype to discuss various issues in education. By doing this, it was expected that more participants could engage in the process of knowledge building and exchange. More details about Intervention 2 are provided in Table 16.

4.3.3   Intervention 3 (Facebook)

The implementation of synchronous online learning environments gave a significant boost to the growth of the community in terms of knowledge exchange and construction. However, the growth of the community was still slow. While the majority of the participants were teacher educators, it was a part of the vision and mission of OLC4TPD that the main target audience of the community was in-service teachers. In order to address this and engage more teachers in the OLC, Intervention 3 was initiated.

From the results of the ICT survey and a brainstorming workshop, 56 percent of the teachers and 69 percent of the teacher educators considered that they had sufficient knowledge and skills in social media, particularly Facebook (see Table 14). They had used social media mainly for networking, communication and entertainment purposes. Several of the young teachers and teacher educators (20-40 years old) suggested the use of social media for the OLC, but as discussed earlier there had been a strong resistance from the leaders and senior teacher educators (> 40 years old) to using the technology for TPD purposes. As the active members of OLC4TPD at that time were mostly 20-40 years old and given the slow growth of membership, the researcher decided to apply Facebook as a community media.

Table 17
Intervention 3 (Facebook, Nov 2009 - Dec 2010)

Mode	Asynchronous and synchronous online discussion
Media	**Main**: Facebook Page (Wall)
	Secondary: Skype, Web Portal Discussion Forum, E-mails, Wiki, Mailing List, Google Mailing List and Twitter
Learning resources	1. **Asynchronous discussions** with topic initiated by members or provided by eModerator on Facebook' Wall
	2. **Discussion forums** on Facebook and Web Portal
	3. **Instant Messaging** (One-to-one chatting) on Facebook
	4. **Ongoing synchronous online meetings** that were **followed up** on Facebook and Discussion Forums
Learning Activities	1. Anyone with Facebook account, who shared OLC4TPD vision and mission could become a part of the community by "LIKE-ing" OLC4TPD
	2. Any members could **post on the Wall and Discussion Forum**.
	3. Members were invited to share about their daily professional struggles and
	4. Topics of discussion: pedagogy (teaching and learning), TPD, national and international education system and improvement, technical matters, online meetings.
Learning Support	1. eModerator **provided information** that are useful for the local community
	2. eModerator **encouraged participation** of the community members on Facebook using various methods, like sparks, surveys.
	3. eModerator **encouraged reflective thinking, critical evaluation and problem solving** of community members
	4. eModerator **provided** ongoing ICT support
	5. eModerator **continued providing online conference** through Skype
Evaluation	**Person of the Month** is a monthly public acknowledgement for members, who made a significant contribution to OLC4TPD through Facebook.
Time	No time limit
Language	**English and Indonesian.**
	The articles shared on Facebook were both in Indonesian and English, but the eModerator or contributor often made a short description or comment in Indonesian. The members sometimes used English in their postings.

Facebook was initially implemented as an additional media of communication besides email and a mailing list. However, as the research developed, this ICT online learning environment became a more significant part of this study. Besides growth of membership, Facebook became the main online learning environment to engage in online social learning in OLC4TPD. More details about Intervention 3 are provided in Table 17.

4.4 Learning: Social Learning

According to Moreland and Lovett's classification of learning (Moreland & Lovett, 1997), OLC4TPD can be categorised as a *non-formal* independent initiative that provides ongoing professional development supports intended for the teachers in Indonesia. The professional development activities conducted in OLC4TPD was not a part of the Ministry of National Education in Indonesia's agenda. The educators, which consisted of the teacher educators, school leaders and teachers participating in this community were given opportunities to continually gain skills, knowledge and attitudes through their online interaction with others.

The vision of OLC4TPD was to be an OLC of educators in Indonesia that supported ongoing professional development of teachers using online media. Based on the early discussion from the brainstorming sessions and results of the interviews during the early phases of the study, OLC4TPD had been developed to be an online venue with relevant *learning resources, activities and support* (Oliver, 2006) where educators could achieve their professional goals through collaboration with each other.

Building an OLC means building social learning processes in the community. The key element of social learning processes, according to Vygotsky's theory, is social interaction (Vygotsky, 1978), which Reid said could be facilitated by ICT tool (Reid, 1991). Interactive ICT tools enable community members to work together in solving problems. In this study, OLC4TPD members were encouraged to collaborate with people with whom they were familiar, or not, using appropriate synchronous and asynchronous ICT tools. They were given interactive learning activities that could foster collaboration among them. All these things could only be achieved by having a better understanding of the social learning context, such as social relationship, personal characteristics and personal perceptions of online technology (Tu & McIsaac, 2002).

Developing an understanding the context of the online learners in OLC4TPD was criticial. Most OLC4TPD members were initially used to being spoon-fed information and not used to the idea of independent, interactive and collaborative learning in an online learning environment. They depended on the physical presence

of instructors or teachers to provide them with information and guidelines to improve their professional practice. These educators were the products of the teacher-centred approach practiced for many years (Haberman, 1991). This is also indicative of the *high power distance* nature of Indonesian society (Hofstede, 1994). In this kind of environment, instead of initiating their own learning, learners were expected to wait for a higher-authority person to guide them and give them a chance to share their thoughts.

Through OLC4TPD, it was anticipated that learners would shift their learning paradigm, from being teacher-centred to being learner-centred. An ability to initiate, be responsible and be more independent in their professional learning was expected to result from this social online learning interaction. This process, however, was envisioned to be challenging, due to the prior habits and traditions in learning. Despite the challenges, the OLC concept had shown its potential to lessen the power distance aspects in online social learning. As people gathered together in the OLC environment, they rarely knew the rank and social status of each other. Thus, it proved to give a better chance for the learners to open up and engage more in the social learning process.

In terms of facilitating learning in an OLC, ICT online learning environments and social learning were the two main elements used. Further description of online learning environments and social learning (activities, resources and support) can be found in Tables 15, 16 and 17. From the learning perspective, there were basically two modes of learning trialled, which were synchronous and asynchronous.

The first, asynchronous, mode of online learning was conducted using the Web Portal Discussion Forum (see Table 15). The eModerator posted information in order to engage community members in online discussions, seeded discussions for the members to respond critically to, announced any online activities, acknowledge members' contributions, provided ICT and other support for the members. In addition to the discussion forum, other features of the Web Portal, such as Wiki, File Sharing, Mailing List in order to facilitate the social learning and communication process.

Ocker and Yaverbaum (1999) suggested that an asynchronous interaction was as effective as face-to-face interaction, however, the results of this study showed that stand-alone asynchronous interaction on a discussion forum was not as effective. It

only lasted for one month before the second intervention using Skype to facilitate synchronous online interaction was introduced to complement the first main online learning environment.

By the end May 2010, there were only 16 out of 104 members who had contributed to the community on the Web Portal Discussion Forum. During the period of October 2009 to May 2010, those sixteen members actively exchanged information and socially constructed knowledge with and without the intervention of the eModerator. However, as time went by, these members became no longer active. One of the possible reasons was the significant delay experienced in getting any response back from other community members compared to other online learning environments investigated. The Web Portal and its discussion forum are currently used as OLC4TPD online repository.

The second trial of asynchronous learning was conducted on Facebook during Intervention 3 (see Table 17). Other Facebook features that were used included the Discussion Forum, Photo Sharing and Instant Messaging. Community members were invited to post their comments on the Facebook in much the same way as they had using the Web Portal Discussion Forum.

Asynchronous online learning interaction on Facebook was different from the previously used discussion forum. The majority of OLC4TPD members accessed Facebook on a daily basis through their desktop PCs or mobile devices, thus the frequency of postings on Facebook was higher. The way members interacted on Facebook was also distinct, shorter, more spontaneous and frequent. Postings on the Facebook usually, however, did not last long. The discussions were easily forgotten leading to repeated similar discussions.

Discourses on the Web Portal Discussion Forum were usually longer in size and had a greater time delay. Contributors seemed to think more carefully and make an effort to make a proper comment on any discussions raised in the forum. On the other hand, only a few people made contributions and it usually took a significant time for them to reply to the postings. Some members often got back to a discussion track conducted in the past and added more information on the same thread after a period of time. Tracking discussion on the Web Portal Discussion Forum, however, was thus easier than on the *Facebook* Wall.

Besides asynchronous interaction, OLC4TPD learners were able to conduct social learning interaction using synchronous technology (see Table 17). Synchronous online meetings were conducted fortnightly using Skype. The results of the study showed that synchronous online meetings using Skype created a stronger sense of social presence within the OLC. The ability to have a real-time online interaction empowered the community members in order to engage in social construction of knowledge, where they actively processed the information they received and constructed new knowledge building upon their previous experience. In a *strong collectivist* country like Indonesia (Hofstede, 1994), physical presence is highly valued. Synchronous online interaction bridged the gap between face-to-face learning and asynchronous online interaction.

Through synchronous and asynchronous online learning interaction, OLC4TPD members were able to overcome cultural and personal inhibition and engage themselves in the social learning and professional learning. As this interaction, which is known as Web Enhanced Practice (Scott & Scott, 2010), developed within the OLC, teacher educators could share their knowledge in order to help teachers in solving problems of their professional practice and could disseminate their research findings to a wider audience. The teacher educators could get feedback for their research, while at the same time other community members could benefit from their research. Teachers shared their day-to-day professional experiences, such as their challenges and success stories, which could also inspire other community members. Further discussion about the social learning process can be found in Chapter 7.

4.5 Network: Social Presence

Network is a social presence created within an OLC. It is like glue that binds and engages the community members to interact with each other. Being criticised for lacking of "*warmth*" (Anderson, Rourke, Garrison, & Archer, 2001), each online learning needs to find its ways to engage its participants in a warm social learning process. Online network is a critical factor that determines the active social learning process in an OLC (Tu & McIsaac, 2002). Gunawardena (1995) in her paper addressing the role of social presence theory in online contexts emphasises the vital

role of the moderator and teacher in affecting the quality of online interaction. Northcote (2010) said that teachers have important roles in an online learning to increase social connectedness with students and to build a well-rounded online experience that is satisfying for both students and teachers, however this has been overlooked in the online environment (Anderson-Wilk, 2010). Research shows that teachers encompasses more than intellectual guidance in online learning contexts (Bender, 2003; Garrison & Cleveland-Innes, 2005; Olson, 2002).

The network in OLC4TPD was built throughout the five stages of the online teaching and learning model adopted from Salmon's e-moderating and e-tivies (2002; 2011). What follows are the description of strategies that the eModerator developed in order to build social learning network during different stages of the development of OLC4TPD.

a. *Providing motivation* (Stage 1 - Access and Motivation)

Motivation is a crucial element in helping learners during the adoption process of the new online learning system and interaction (Salmon, 2011). Salmon points out that motivation does not only come from the ability to overcome technical matters, but from the ability to participate in the online learning process.

Based on the insights the participants provided, the researcher developed learning activities and strategies for the OLC (see Section 4.5). Aligning the interest of the community members in learning and choice of technology helped to boost the motivation of the community members during Stage 1.

What follows is an example that shows a comment from a teacher educator who wanted to join the community, because the OLC would enable him to interact with the colleagues he rarely met. Yet, he was unhappy because he was unable to join the online meeting due to prior commitments. Thus, he used the discussion forum to contact them. Before this, they had rarely communicated with each other.

> ….Oh, it must be an exciting experience for you who could join the seminar last week although there was a little bit of earthquake. Hik hik hik …. I envy all of you (his colleagues) because I have to teach every Friday until 17:30 …. hu hu hu … yet, I want to share with you my teaching experience here … *Amir, a male teacher educator* [DB: October 2009]

b. ***Providing ongoing support for a smooth transition*** *(Stage 1 – Access and Motivation)*

Besides aligning *access and motivation*, the researcher also provided ongoing support to facilitate a smooth transition in learning as well as using ICT for OLC4TPD members. Each individual, including the most confident, needed support at the beginning of the online teaching and learning process. Regardless of the level of ICT competence a member had, they might still encounter problems that could impede them from participating in the OLC. An example of this was from "Adi" as he struggled to execute a simple upload to OLC4TPD wiki, although he had been very confident in most of the online learning activities.

> Can you kindly upload these two articles? I have made a new wiki page, but then I got confused how to attach the first article to be downloaded and read by our friends. Another article I would like to use it for sharing tomorrow during the online meeting, because there are some new material that comes across my topic … [Email conversation: 2010, same quote on p.116]
>
> I would like to save my writing on (name). Please kindly upload it for me. Then, for the training photo, I have tried to upload it, but it always failed. The data has been shared last week. [Email conversation: 2010]

c. ***Providing sparks to engage discussion in the asynchronous online environment*** *(Stage 3 - Information Exchange and Stage 4 - Knowledge Construction)*

Spark is one of the methods suggested by Salmon (2011) to provide online learners with a short comment or question in order to initiate discussions among the community members. As an authoritative figure, the eModerator provided a lot of new information for the members and facilitated online discussions. She initiated the discussion by sending 'sparks' in the online learning environments, because the members were usually hesitant to start a new discussion. The Examples 1 and 2 illustrate two of the eModerator's sparks on the Web Portal Discussion Forum and Facebook. Further discussion about the social learning interaction happened after a spark will be discussed further in the Chapter 7.

- **Example 1**: eModerator's Spark on the Web Portal Discussion Forum

Many people said that Japanese are clever and creative. Do you think this statement is correct? Is there any relationship between education system and learning process? What do you think?

Responses:

Man is born with the gift of intelligent. Since man is born, man can "learn" with the environment closest to himself as his "teacher" … *Bambang, a male school leader*

An individual or group creativity is influenced by his society and culture… *Joko, a male teacher.*

I agree that environment influences someone to be smart or not… *Rina, a female school teacher.*

I agree with Mr Joko that we need to improve the interest for reading, but I am sorry I can not agree with the statement… *Bambang, a male school leader.*

- **Example 2**: eModerator's Spark on the Facebook

Game in Learning - Many people are recently developing this method of learning. What do you think?

Responses:

That's very good, but it must be based on Local Vitality (Local Genius)… *Rusdi, a male teacher.*

Good … adopt some traditional games into EFL learning… *Anik, a female teacher.*

Dilemma between good methodology and short learning time. *Mardi, a male teacher.*

That's good, but not forgetting the learning essential… *Ucok, a male teacher*

Yes, games (either traditional or modern) can reduce burdens of the students… *Totok, a male teacher.*

The more optimal method variations to be used, more ok… *Ucok, a male teacher.*

d. *Augmenting active members' online presence in OLC4TPD (Stage 2 -*

   Online Socialisation to Stage 4 - Knowledge Construction)

The eModerator identified community members who had demonstrated their support of OLC4TPD through their active participation in the ongoing synchronous and asynchronous activities by augmenting their online presence in OLC4TPD. The eModerator appointed these members to be a Person of the month, the eModerator assistants, acknowledged their names and contribution in various community discussions, web sites and Wikis so other members would notice their contribution. This strategy encouraged more members to take more active roles in the community.

e. *Organizing synchronous activities* (Stage 3 - Information Exchange to Stage 5 - Development)

In a *strong collectivist* country, such as Indonesia, physical presence is important. Online environments are different from physical environments, where face-to-face interaction can be conducted. Immediate feedback is sometimes difficult to obtain when asynchronous online discussion is used. With limited access to the Internet and computers, it could take months for a person get a reply for a post on the online discussion forum.

Synchronous meetings enabled members to have a real-time discussion, which led to spontaneous feedback. Although there was no face-to-face interaction, members were satisfied as they could get immediate feedback to their answers. Talking on Skype was like talking on a normal telephone but with a lot of people, whom you might not know and who were located in various geographical locations.

f. Social Media as a rapid method for building social presence
(Stage 2 - Online Socialisation to Stage 5 - Development)

For asynchronous interaction, the eModerator used Facebook more than the Web Portal Discussion Forum. The eModerator used the Facebook Page to promote discussion on the Web Portal Discussion Forum or to raise discussion on the Facebook. Most of the members accessed their Facebook through mobile phones on a daily basis. If they found any interesting topics either on the Facebook Page or somewhere else, they would usually quickly respond to it.

g. *Maintaining the role as a leader of the community*

(Stage 1 - Access and Motivation to Stage 5 - Knowledge Construction)

The role of a leader is significant in a *high power distance country* such as Indonesia (Hofstede, 1994). Similar to the importance of physical environment, the eModerator observed that this perspective is still culturally engrained even within the online environment.

One of the examples in this instance was from the dean of a teacher-training institute. His prominent authority at a professional workplace influenced the participation of his staff, teacher educators, in the OLC4TPD. He regulated the online learning community activities as *semi formal* activities and planned to turn the activities into a formal research project (Sari, 2010). He started by attending the online meetings regularly himself and then encouraged his staff to participate. During that period, there were, at least, five of his staff participating in each online meeting. However, as he started to withdraw his participation due to other commitments, the number of his staff suddenly reduced as well. The participation of his staff in the OLC4TPD was strongly influenced by his role and presence as the dean and the leader of a physical CoP. The eModerator, in one of the initial occasions, attempted to randomly invite teachers to participate in the OLC4TPD activities. Initially, she could only get three teachers to participate, and they were not active in the discussion forum. Learning from the power distance lessons, she contacted Bambang, a school superintendent and follow up with them subsequently. For example: a group of secondary teachers (25 people) started to join in the online meetings and discussions actively during the second quarter of 2010 (April 2010).

The previous two examples showed that power distance value could not simply be ignored. The strong underlying hierarchical relationship among the community members influenced the way the eModerator designed and developed the OLC learning activities and strategies, interacted with the community members, facilitated the social learning process. The eModerator tried not to become the only leader of the community; therefore, she involved the existing leaders and reinforced their authority to be leaders of the community as well. She invited them to speak regularly in the online meetings, assist her in moderating the community and engaging them in various other leadership roles.

4.6 Summary

Tackling challenges of existing TPD practices in Indonesia, this research attempted to design and develop an alternative model of TPD that emphasised on CoP-based practice and the use of ICT to facilitate the social learning process. OLC4TPD as an OLC-based TPD was designed and developed for the purpose of this research study. This chapter discussed the design and development of OLC4TPD elements, which consisted of Community, Technology, Learning and Network.

While the research borrowed concepts of OLC for TPD being used in other contexts, mostly from the Western countries, the implementation of OLC in Indonesia was unique. The socio-cultural factors of Indonesia, as described by Hofstede in his *Cultural Dimension* (Hofstede, 1994; 2009), provided a significant foundation for the development of OLC4TPD (Online Learning Community for Teacher Professional Development). The high Power Distance Index (PDI) of Indonesia, for example, influenced the way the eModerator involved members' in the process of community development; how the learning activities were designed; how interaction between the eModerator and members was conducted and the choice of online learning environments used to support interactive and equal social learning processes.

Chapters 5 – 7 discuss the findings from the development and implementation of OLC4TPD. Chapter 5 discusses how three examples of community members, referred to as Adi (teacher educator), Eko (teacher) and Bambang (school leader), applied OLC4TPD to support their ongoing professional development. Their professional learning journeys prior, during and after will be discussed in detail in this Chapter. Chapter 6 discusses several ICT and socio-cultural facets that influenced the operation of OLC4TPD in engaging its members in the social learning interaction process. Chapter 7 discusses to what extent OLC4TPD facilitated social learning interaction among OLC4TPD members and how it impacted on their professional development journeys.

CHAPTER 5
FINDINGS AND DISCUSSIONS:
PROFESSIONAL LEARNING JOURNEYS

Overview

The previous chapter described the design and development of OLC4TPD as a community-based TPD model for teachers in Indonesia. This chapter describes how the community members participated in OLC4TPD as a part of their professional learning journeys. The format of professional learning journey was applied in this chapter, because it was considered suitable for this study. Lloyd and Duncan-Howell (2010) explained that teachers in the 21st century are engaged in a journey, where they know what they aim for, but they need to explore how to get to the destinations.

In this chapter, the researcher presented three in-depth narrative case studies depicting professional journeys of a teacher educator (Adi), a school leader (Bambang) and a teacher (Eko). They have been given pseudonyms for the convenience of this study. Furthermore, most of their quotes were translated from Indonesian to English, which sometimes include quotes with broken or unstructured English. These case studies demonstrated how these educators adopted, engaged with, faced challenges and benefited from OLC4TPD. They were chosen from among more than 1,300 members of the community to represent three key educators in OLC4TPD. They had participated in the OLC4TPD from the beginning to the end of the study.

5.1   Adi, the Teacher Educator

Adi is 30-year old teacher educator, who has worked at an Indonesian NGO for about five years. As a mathematician, Adi had 5 years experience as a teacher in a school and 5 years experience as a teacher trainer. At the time of the study he was in charge of research and development including training in-service teachers in rural and remote areas of Indonesia.

As an educator, Adi's purpose was "to teach content material to students and teach them so they can be true learners as well as inspire and motivate them to reach their dreams". He had been developing his professional competencies by constantly reading books related to his profession, conducting classroom action research, becoming a speaker in various national and international conferences, conducting a number of discussions with education experts and implementing results of discussion, research and theory in his classroom education practice. Despite his busy schedule, Adi had written many articles (magazines, newspapers and conference papers), presenting his ideas, reflections and concepts about education in Indonesia. In an interview he said,

> Innovation at school is critical.
>
> So far, the education policy in Indonesia tends to be government centred. Ideally, school teachers and leaders need to have a strategic role to make innovation at school level (learning innovation, ICT usage and school management).… The challenge is to defeat the attitude by teachers who do not like to accept and listen to the truth and reform the weak leadership spirit of the school leaders in developing professional development of visionary teachers [Interview: August 2009].

He believed that with the challenges, comes the excitement when he is able to "change teachers' paradigm so they can have self-confidence about their potential to be professional teachers who can inspire their students".

Adi was not new to technology, accessing Google for information and using email as a medium of communication. When the study started, Adi had access to desktop and laptop computers both at home and office, but only had access to the Internet at his office in the form of a WI-Fi hotspot and ADSL. He had been using a

computer and the Internet for more than five years, for learning, working and entertainment. Adi used the Internet for communication. Beside his laptop, he also used his Nokia smart phone to communicate with colleagues, friends and family while he was at work.

In the preliminary ICT survey, Adi judged his own ICT competencies by selecting descriptions that matched his ICT competencies on a range of 0 (does not know much) to 3 (highly skilled) (see Appendices 5 and 6. ICT Survey). This survey aimed to know individual's perception about his or her own ICT skills. The results presented in Table 18 constitute the baseline for understanding Adi's professional development journey prior, during and after participating in OLC4TPD program.

Adi acknowledged that he was highly skilled (3) with using the Internet. He considered himself good (2) in using emails and an online community. However, he admitted that he only had some basic skills (1) with the following: blogging, writing a wiki, podcasting, using social media, using file/content sharing and using online learning environments.

Table 18
Results of Adi's Personal ICT Assessment

(0=doesn't know much, 1=basic skill, 2=moderate skill, 3=high skill)

Internet	3	Able to download and install software and plug-ins, use different kinds of browsers
Email	2	Able to save emails in folders, look for emails, add signature in an email and send an attachment through email
Blog	1	Able to read and give input on other people's blog and make own blog account
Wiki	1	Able to look for information the wiki
Podcasting	1	Able to look, download and listen to podcast
Social Media	1	Able to write blog/notes, upload photo, video, link, images, change the setting according to the needs and wishes, look for friends and acquaintances and write a comment on other people's and own pages
Online Community	2	Able to start a new online discussion in an online community, write message and give comments for other people's messages and participate actively in online community' activities
Content or File Sharing Sites	2	Able to look and download photo, images, story, presentation and other people's video, give comments and feedbacks for other people's work
Online Learning Environment	1	Able to login into an online learning environment, look and follow instruction given by the instructor through online learning environment.

5.1.1 Joining OLC4TPD

After hearing the researcher's presentation about OLC4TPD project during an international conference in Indonesia (July 2009), Adi shared his interest and motivation to explore the concept further. He believed that the OLC-based TPD model would offer lot of potential to reach out more teachers across Indonesia. Thus, he decided to participate in the preliminary study that was conducted during the months of July and August 2009.

When the community was launched in October 2009, he registered himself to be one of the first members on the Web Portal and became an official member of OLC4TPD on the 16 October 2009. He shared the following vision about OLC4TPD,

> My idea, OLC4TPD, can be projected to be (1) a community that has a database that is useful for teacher professional development (2) a community that can investigate problems related to teacher professional development from the database that is accessible by its member (3) a community that can conduct research limited to the context of solving the problems of teacher professional development (4) a community whose members can produce publications based on its findings from its research in national and international journals. Thank you. [DB: 26 October 2009]

5.1.2 Learning @OLC4TPD

Adi presented as an open-minded person. He appeared to be open to new ideas, to share any of his thoughts and willing to interact with any members he might not have known before. In November 2009, a teacher educator suggested that he should be the first speaker in OLC4TPD conference, because he had actively shared information and posted several articles on the Web Portal Discussion Forum. Without any hesitation, Adi straight away said, *"OKE" (means "Ok" in English)* to this suggestion, although he did not know this teacher educator well, he had never tried any asynchronous online learning before and he did not know what the eModerator's plan or schedule was.

In terms of social learning interaction, Adi had a unique way of engaging in an online discussion. His postings were usually controversial, so that they invited a lot of discussion among the community members. He raised discussions that challenged the

teachers to think outside the box and to be reflective about their current practices. Here is an example of a posting when he challenged other community members.

> If the brain only learns, quotes and being trained, just before the exam, in 14-18 hours, the brain will forget most the information, except if that information has a meaning. Elaine B. Johnson, PhD: Test what you have taught or teach what you will test? If we as teachers test the knowledge and skills of our students from the materials we have taught them, it means we are being fair to our students. But, if we as teachers teach only for the examination purpose, can we ensure our students learn? Learning is very different from answering exam's questions. According to the Indonesian Big Dictionary, learning is an effort to get knowledge, to change our attitudes or to respond based on experience. So, learning is not as narrow as doing the National Examination, memorizing useless information, but using all the cognitive-affective-psychomotor domains of the students. What do you think about the National Examination yourself? [DB: 17 February 2010]

In a second example, Adi tried to make use of information from the literature that he read, to challenge educators to be reflective practitioners.

> From the literatures I read, if we want to be an expert in our profession, we need to have 10,000 hours of practice. The practice that we do is not merely repetitive practices, but practices with increasing intensity, which is often called "Deliberate Practice". So, if we want to become an expert in our profession, we need to conduct an intensive and consistent training for 10,000 hours. What do you think? [DB: 04 January 2010]

 In his professional development journey at OLC4TPD, Adi kept challenging himself and the other members to grow beyond their comfort zones. His curiosity has led him to move to new territories. Adopting new technology to facilitate his TPD process was one of them. Instead of insisting on the use of face-to-face TPD activities, he started to adopt Skype to deliver his talks in order to reach out to teachers and educators in different geographical places in Indonesia. In this adoption process, he learnt some new skills, such as writing a wiki, publishing articles and other information on the portal as he contributed to the community. The process was not always smooth, but it was rewarding at the end. As he continued learning, he became an expert. During 2009-2011, Adi has become the most frequent online speaker and contributor in any of OLC4TPD activities.

Making the most of every opportunity is one of Adi's key characteristics. With his enthusiasm, he had moved beyond *peripheral* community interaction to a meaningful engagement in the community. Although he had only the basic ICT skills

that were needed to participate in the community, he dared to try and risk mistakes in order to contribute. He did not let himself be a *lurker*, who only received information, but participated in any discussion. As OLC4TPD introduced a *Reward System* in order to encourage active participation by community members in online learning activities during the first three months, Adi always became one of the first three people at the top. His mission was to inspire more teachers to participate and benefit from the community through his active participation. For example, he stated:

> 2009 is a historical moment for me as I had got the opportunity to be a Hotseat Speaker. All the best ideas and experience that I gained when I travelled around the archipelago has made me enjoy the online session on November 2009. Now, I would like to invite all educators whom I met to join in this community… [DB: 09 December 2009].

In the community, he actively built his online identity by providing voluntary support and actively participating in discussions. He used the three main online learning environments trialled during the study to support his learning process that are discussion Forum (Web Portal), synchronous online conference applications (Skype) and social networking media (Facebook). He had a 90 percent attendance in online meetings held during the periods of October 2009 to December 2010 and became a Hotseat speaker in 5 out of 26 meetings held during that period. He made 22 percent of the total contributions in the Web Portal Discussion Forum (22 out of 102 postings) during the period of October 2009 to May 2010 and 19 postings on Facebook. Among these three online learning environments, Adi mostly used the Web Portal Discussion Forum and Skype to support his personal and professional development activities.

Through his active participation and significant contribution to the community, other community members considered Adi as a *community leader*. He has inspired a lot of members. Another teacher educator respectfully considered him as a leader who knew more than him. For example,

> Mr Adi, during the online discussion yesterday, I agree with your explanation, but I have some burning questions for you: 1) Is every active learning just a procedural and mechanical process as explained? Because I see that active learning as explained, is usually only a ceremonial process and is not substantive learning 2) How can a teacher anticipate things that have not been predicted before? I acknowledge that learning is dynamic and unpredictable [DB: 17 November 2009]

As an enthusiastic and open-minded educator, he positively responded to any requests addressed to him from the community members. Although he was new to most of the technology used in the community, he was not afraid to try and learn. His strong motivation was inspired by his eagerness to "share and contribute to other people", while at the same time "to reach out to teachers in remote areas of Indonesia".

Adi believed that attending and participating in OLC4TPD online meetings was always rewarding. In one of his reflective comments, he said,

> I always felt encouraged in each online session, as I am able to learn something new… I could actualise myself…. I felt fortunate because during the one-hour online session, I could meet great people with different expertise and experiences from various places in Indonesia and overseas…. I am very happy as I can share and contribute to other people and they valued my thoughts … I feel supported through the community, especially my future career" [DB: 17 November 2009].

His experience in the online learning community has increased his commitment to support the activities. He said, "I am always encouraged to prepare to the best of my abilities when delivering talks to OLC4TPD community members" [Interview, July 2010].

5.1.3 Challenges

One of the main challenges faced by Adi during his participation in OLC4TPD related to access and connection to the Internet, in particular during an online meeting. When he first joined the community, he only had access to the Internet at his office. His office used a WI-Fi hotspot and ADSL connection, but, the connection to the Internet often dropped when he participated in synchronous online discussions using Skype with many people. His voice faded when he was talking and his Internet connection went on and off.

Prior to each Skype online meeting, Adi usually contacted the eModerator (Perth, Western Australia) to test his Internet connection. The Skype conversation prior to an online meeting was usually successful. The problems usually started when there were more than three users joining the Skype meeting. One of the strategies that we developed together to overcome this problem was to use a chat room to deliver

talk. Talking using a chatting room was not the most favourite method of the community members, because it lacked of synchronous connection and intimacy. Instead of typing, which was challenging for some of the participants or groups participating in the online meeting, the participants liked to speak as on the phone. However, the chat room was the most feasible way to engage Adi in synchronous conversation.

This strategy required more preparation by the eModerator and presenter (Adi). He usually sent the eModerator the presentation materials few days before the meeting and had a discussion about his talk over Skype. On the day of presentation, the eModerator would read Adi's presentation and give any necessary explanation, while Adi added more information and answered questions using the Skype chat room. The eModerator would read his answers, questions and additional information and facilitate further discussion. The members usually posed questions and comments spontaneously using audio, because many of them joined the meeting as a communal activity group (in a big group of 10-20 people). Thus, it was not feasible for each of them to type into the chat window.

Although the strategy worked well, Adi shared his thoughts with the researcher during an interview in July 2010.

> I feel distressed when I could not get any good Internet connection in my office and I had computer problems … I feel disappointed when people could not get my message across, during an online meeting discussion due to technical problems …I felt dissatisfied, I could not listen to the discussion clearly and thus I could not learn anything.

However, regardless of any technology challenges he faced, he said, "Attending an online meeting is important for me, therefore, I always felt nervous when I could not attend the online meeting on time."

During the first few months, Adi demonstrated that he was more advanced than others. Whenever the eModerator asked him to help experimenting with a new learning online learning environment, he would quickly agree to try. His enthusiasm made his ICT skills improve significantly. From having no prior knowledge about online learning community concept in the beginning, he became confidence in using it. Considering his perseverance and confidence in learning, the eModerator neglected the fact that Adi still often needed a lot of support.

In addition to the connection problems, Adi also faced several issues related to ICT literacy. Despite his judgement of his own ICT skills as good, and his confidence to learn new thing, he showed that he still needed support in applying some of the online learning environments. One day, the eModerator asked him to create a Wiki page for his new articles. He agreed to do this task. When the eModerator checked the Wiki on OLC4TPD portal, she found that several existing files on the wiki were gone. He sent an email shortly after that saying,

> Can you kindly upload these two articles? I have made a new wiki page, but then I got confused how to attach the first article to be downloaded and read by our friends. Another article I would like to use it for sharing tomorrow during the online meeting, because there are some new materials that come across my topic … [email conversation, 2010, same quote on Section 4.5-b]

Adi admitted that he still needed help in some ICT skills. An eModerator needs to remember Salmon's (2002, 2011) view that even the most confident member of the community needs support from the eModerator. Realising this fact, Adi and the eModerator had a discussion about this incident and she helped him to fix the problems over a Skype conversation. However, she also encouraged and praised him for his effort and courage to try something new at the same time. As the time went by, he has become a more confident person in working with the Web Portal and any other online learning environments, such as Web Page and Wiki.

5.1.4 Impacts

During the first few months of Adi's participation, he joined several online meetings facilitated by English-speaking presenters. He always spoke in Indonesian and asked the eModerator to interpret both the presentation as well as the conversation. During the second year, he grew in confidence in using English through his interaction with the English-speaker experts and other Indonesian members who speak. He became more pro-active in initiating an English-speaking conversation, when there was any chance to do so in online meetings. In 2011, he started to send some abstracts to several international conferences. Some of his abstracts were accepted and he was invited to present. Thus his confidence grew through presenting the paper in English. As a part of his professional development, he often asked for the researcher to review for his paper and/or co-present the paper virtually through Skype.

Adi never tired of sharing his experiences about OLC4TPD with his colleagues and teachers he met at his work. Many of them lived and worked in rural and remote areas. He motivated them to join OLC4TPD online discussion. He said to them that he was proud to be a member of OLC4TPD and invited them to join. Some of his colleagues also joined OLC4TPD through his recommendation. He also occasionally demonstrated how OLC4TPD online meetings worked to in-service teachers in remote and rural areas by inviting the eModerator to be online while he was there. He invited a teacher from a rural and remote area to give a presentation with him in November 2010 on one of OLC4TPD online meetings. This colleague worked in a junior secondary school in a rural and remote area in Indonesia and he was very excited to get a chance to share his first-hand experience from his school. He was overwhelmed by the opportunity to meet and share with other educators across different geographical locations in Indonesia.

Adi's active contribution through the Web Portal Discussion Forum, online meeting and other online learning activities inspired many educators in Indonesia. His enthusiasm in OLC4TPD was reflected through his efforts in attending online meetings regularly, promoting the community to various groups of people as well as writing about OLC4TPD in various articles, books and conference papers.

5.2 Bambang, the School Leader

Bambang is a 52-year old male school superintendent. With more than 25 years experience as an educator, Bambang currently oversees public schools and their day-to-day operations in a district of East Java. Compared to most Indonesians, when Bambang was in his thirties, he was fortunate to have the chance to continue his postgraduate education in IT in Western Australia. After completing his study, Bambang was appointed by the Indonesian government to work at the Indonesian Embassy in Egypt, where he was the Principal of the attached Indonesian school. He worked for several years in Egypt before he returned to his hometown and worked as a government officer (school superintendent) to develop the education sector there.

As a man with many hats, Bambang obviously is a busy person. He said, "I have too many activities and assignments that need to be done." His busyness often

became his professional hurdle. As part of his superintendent role, Bambang provided consultancy to the schools in his district. Visiting one school after another was his routine. He had the responsibility to ensure that all schools under his supervision followed the government guidelines and worked to improve the quality of education. Bambang also worked in the private sector, managing a famous private English language-training institute.

The researcher met Bambang on Facebook at the end of 2010. Bambang found OLC4TPD community himself through surfing the Internet. Motivated by his personal interest, he joined and came to be one of OLC4TPD members on Facebook.

As with Adi, the researcher asked Bambang to participate in a preliminary survey to rate his own ICT skills by ticking the boxes that matched his competencies (see Appendices 5 and 6). This survey aimed to know individual's perception about his or her own ICT skills. The results constitute the baseline for understanding Bambang's professional development journey prior, during and after participating in OLC4TPD program.

Table 19
Results of Bambang's Personal ICT Assessment

(0=doesn't know much, 1=basic skill, 2=moderate skill, 3=high skill)

Internet	3	Able to download and install software and plug-ins, use different kinds of browsers
Email	2	Able to save emails in folders, look for emails, add signature in an email and send an attachment through email
Blog	1	Able to read and give input on other people's blog and make own blog account
Wiki	1	Able to look for information the wiki
Podcasting	0	Does not know much
Social Media	2	Able to write blog/notes, upload photo, video, link and pictures, change the setting according to the need and want, join and participated online
Online Community	2	Able to start a new online discussion in an online community, write message and give comments for other people's messages and participate actively in online community' activities
Content or File Sharing Sites	0	Does know much
Online Learning Environment	1	Can write, send messages through email, threaded discussion, bulleting board, use online collaboration tools to collaborate with colleague and participate in online meetings

Bambang considered himself to be highly skilled (3) with the Internet and also had good skills (2) in using email, social media and online community (see Table 19). His assessment demonstrated that he only had some basic skills (1) on writing a blog, wiki and using online learning environments and did not to know much about podcasting and file/content sharing.

The findings showed that ICT was *integral* to his personal and professional life. He was not only using ICT for learning, working and communicating (for more than five years), but his postgraduate study was also related to ICT in education. Wherever he was, he was connected to technology, anytime and anywhere. His overall ICT knowledge and skills were remarkable compared to the average teacher and educator participating in the study. Despite his lack of knowledge in several ICT skill areas, such as podcasting and blogging, he had sufficient ICT proficiency that enabled him to engage in online learning activities.

5.2.1 *Joining OLC4TPD*

Bambang's initial motivation to join OLC4TPD was similar to many of the other participants. He wanted to join and experience OLC4TPD online meetings, which were held every fortnightly. His main interest was to meet and have an academic dialogue with *OLC4TPD Hotseat speakers* and OLC4TPD members, who came from different places in Indonesia and overseas for each meeting. The community attracted his interest because it was founded in Western Australia, where he used to live and study. Many of the speakers who attended the seminar were also from this part of the world and he loved to make connections with them. Thus, attending an online meeting was always like a treat for him. He always looked forward to attending the next online seminar, because he "can learn a lot of lessons that can improve the quality of education in his place." *S*ome of his comments that expressed his feelings about the online meetings are as follows:

> It will be great if I can join the meeting. I am sure I will get more information about teaching and what teachers need. Thank you all and special thanks to mbak Ria (Note: He meant the eModerator)." [Facebook, 06 December 2009]

> It's a great opportunity for me to join this meeting with the topic directly related to teaching. I'll try to join this and do hope I can. Thank you to the committee and Prof Joe. Thank you. [DB, 27 January 2010]

Bambang posted, commented, questioned, answered and contributed to the community. Bambang used mostly the Web Portal Discussion Forum, Skype and email to facilitate his online professional development. He made 12 percent of the total postings contributed by the community members during the period of October 2009 to May 2010. He attended more than half of the online meetings (n=29) conducted fortnightly through Skype. Interestingly, he only made one post on OLC4TPD Facebook during the period of October 2009-2010. His first interaction with the researcher happened on Facebook chatting. He used the Facebook chat room a lot in order to have a conversation with the eModerator or other members. Email was the most common tool he used to communicate and consolidate various matters related to OLC4TPD. As ICT was his 'partner' in learning, Bambang always tried to make the most of different online learning environments to support his process of teaching and learning.

Bambang was a proactive initiator in the community. In February 2010, he called the eModerator on Skype saying that OLC4TPD activities would be very useful for developing the professional competencies of the in-service teachers in his district. He intended to invite one of the schools he supervised to come aboard and participate in the online meetings.

Not long after that, in April 2010, a male IT teacher from a junior secondary school in a rural area from Bambang's district contacted the eModerator via email. He told the eModerator that he received information about OLC4TPD from Mr Bambang, their education superintendent. As suggested by Bambang, he and his teacher colleagues planned to attend the online meetings held every second Friday. He wanted to find out more information about the online meeting and how they should prepare for joining online meetings. When Bambang and the group of 25 teachers joined the online meeting for the first time he introduced the Principal and teachers to the rest of the online meeting participants. He gave a short introduction about the school, their activities and his vision for the teachers' participation in OLC4TPD community. After this meeting, he still attended several other meetings and then he was absent for a significant period of time (due to work commitment and travel). While he was unable to attend regularly, he still maintained contact with the community through his online interactions on the Web Portal Discussion Forum and Facebook.

5.2.2 *Learning @OLC4TPD*

On the Web Portal Discussion Forum, Bambang actively answered any questions posted by other members or the eModerator. He always demonstrated his extensive knowledge about education and government policy through his postings. As a government officer, Bambang was used to thinking about matters from both a government point of view as well as that of an educator. He tried to grow an awareness about existing policies in the Indonesian education system in other educators. Thus, most of his postings on the Web Portal Discussion Forum could be categorised as *Constructive Uses of Authoritative Sources* in the Twelve Socio-Cognitive Determinants of Knowledge Building (Scardamalia, 2002).

In OLC4TPD, Bambang was known as an experienced leadership figure. His virtual identity had been built throughout the time, through his active contribution in sharing about the Indonesian education system and its policies, for example:

> In response to your question, I would like to share with you the government laws that are available and must be applied as the foundation of education in Indonesia. Starting from UU No 20/2003 – System of National Education, then there is another Government Law No 19/2005 about National Education Standard that governs all education organisation must fulfil 8 standards, including assessment in hard and softcopy. The document can be accessed in form of soft copy or hard copy through Ministry of National Education's website…

His friendly, but confident and intelligent explanationd built teachers' knowledge and confidence regarding education policy. In January and February 2010, OLC4TPD organised online meetings on "Digital Assessment", which were delivered by two experts from Western Australia. Most of the attendees of the online meetings considered that digital assessment was a new approach and wished that this type of assessment could be implemented in Indonesia. After the meetings, Bambang wrote on the Web Portal Discussion Forum to explain that this type of assessment had actually also been a part of the Ministry of National Education program and has been disseminated and applied with different names.

> … starting from Government Law No 20/2003, Government Rules no 19/2005, about national standard of education, all education bodies must fulfil eight standards which include assessment standard, which are available on hard copy as well as soft copy and can be accessed through Ministry of National Education site. In many education workshops and seminars held in many places, the topic "Contextual Teaching and Learning (CTL)" has been

brought up. One of the principles of this approach is authentic assessment. Another local version of CTL called PAKEM, which stands for Active, Creative, Effective and Fun Learning (in Indonesian), has also disseminated authentic assessment approach. I hope my understanding is correct [DB: 20 February 2011].

Bambang showed his authority in presenting the facts above, yet he still made room for further discussion, as most of the teachers were not aware of the policy and its implementation of authentic assessment by saying "… I hope my understanding is correct…". His comment generated twelve threads in the Discussion Forum. Two teachers, who usually never participated actively, were inspired by Bambang's posting and they joined in this discussion. They moved beyond their comfort zone to contribute in the community. The first reflective comment was from Anggie, a male secondary teacher.

> I am not familiar with the term Authentic Assessment (aa). Is it an assessment that is really authentic? I would love to learn more if it is something new. Maybe, we have used some of the principles. Let's try it. My little understanding about aa from the Internet is an assessment process of competencies gained by students in form of knowledge evaluation and contextual expertise in real world (Pokey & Siders, 2001 in Santrock, 2007). This assessment is not traditional, manipulative, but not exploit students' competency in learning – cognitive, affective and psychomotor. Maybe (??). [DB: 17 February 2010]

Anggie, despite his limited understanding of the topic, was inspired to seek knowledge beyond his traditional learning practice. He used the Internet to search for more information about authentic learning, cite relevant resources to make his point and reflect to his own understanding. The second person was Rena, a female secondary teacher, who tried to make sense of Bambang's explanation using her own experience,

> I am sure there are schools that have implemented authentic learning, but only a few of them. The reason is that authentic learning process is not as easy as pencil and paper-based test, but the result is more authentic. If school does not use authentic learning, it does not mean they do not want to. They might not know how to do it. Maybe trainings can help the educators to apply aa in classroom.

Bambang's extensive knowledge on government policy was invaluable for OLC4TPD. He was able to bring up the government's policies and education issues as a down-to-earth topic, so that Indonesian educators in OLC4TPD could understand

easily and apply these policies in their professional practice. He grew the awareness and confidence of the participating educators about the potential of government policies and laws, as resources to guide teachers in their professional practice.

Bambang always kept a low profile. He never imposed his thinking on other people. He often closed his discussion with sentences, like "…please let me know what you think…Thank you". He engaged not only with high-rank people, but he was also with people, such as pre-service teachers, in-service teachers, any level of government officers, university academics and parents in the community.

Bambang was a good moderator. With his seasoned experience, he always tried to make other people feel important and respected in every conversation he had. He acknowledged other people's contributions and humbly critiqued other people's ideas. He was able to create the feeling of closeness that stimulated more online dialogue among community members, most of whom he had never met. The two postings below show how Bambang's unique online presence as an *eModerator's assistant*.

> I agree with Mr Heri and Mr Eko that Lesson Study (LS) is very helpful to improve the quality of teaching and learning for our teacher colleagues who are "ready". The point that was raised by Ms Eunice (eModerator) that LS need a lot of time on the plan phase, I think, it depends on how we agree on it, off course, we need to have a little discussion about that. There are many things that we can learn from LS, I think. We can learn from our colleagues, even though the role of "expert" during the reflection time is important to point us out to reliable references. Thank you [DB: 18 May 2010].

In another post, he said,

> I agree with Mr Joko that we need to improve the interest of students in reading, but, please forgive me if I don't agree with your statement that "Indonesian people are generally not more creative than Japanese". Maybe the correct expression is not "not more creative", but "will be more creative". Responding to Ms Riza, it's correct to say, "Everyone is unique". This assumption will lead us for "treating learners as subjects, rather than objects in teaching" and this will be a "trigger" for us to really apply "mastery of learning", which is essential in "mixed ability classes [DB: 21 March 2010].

As an initiator, Bambang played an important role in bringing people to the online community. As discussed earlier in Section 5.3.1, he facilitated a group of junior secondary teachers to join. He assisted in the transition process, so that this group of teachers could move forward beyond 'peripheral participation' in the

community (Wenger, 1998; Wenger et al., 2002). Once the group settled, he started to introduce a new group of teachers from a different school. Using the same strategy and following the same cycle, he invited at least four different groups of teachers from different schools in his district. These groups of people became *happy repeat customers* of OLC4TPD, who faithfully participate in the online activities from then.

Bambang's authority helped him to mobilise school principals in his district to initiate new programs to assist the teachers' certification process. As mentioned in Chapter 1, Certification is an important path of the in-service TPD practice. According to the Law no 19/2005, all in-service teachers need to go through the certification process in order to be qualified as a teacher after completing their 4-year diploma (Bachelor) degree program. They need to collect points as a part of a teaching portfolio assessed by their Principal and other government officers. Together with these Principals, Bambang organised a new rule, that attendance and active participation in OLC4TPD online meetings would be awarded with points. He negotiated with OLC4TPD to provide a Certificate of Participation for every 10 online meeting attendance as proof for his teachers' professional development activities. The Certificate could be used in their portfolio for Certification and Promotion purposes. This strategy was successful, as his teachers always attended the online meetings regularly and participated actively in the discussion.

Bambang had a great curiosity and eagerness to learn and improve his professional competencies on an ongoing basis. One of the discussion topics that fascinated him was international education system. Nine out of the twenty-six online meetings held during the period of October 2009 to December 2010 discussed this topic. His particular interest was related to his profession as a district school superintendent. The online meetings on this topic gave him insights into how to develop new strategies to improve education in the local schools. In addition, he also had a task of continually improving the quality of or RSBI schools (Leading to International-based State Schools), which are state schools that are in the process of becoming an international standard schools, in his district and thus he needed a lot of information about international education systems and resources.

Most of his RSBI teachers had struggled with the new requirement to teach in both Indonesian and English, adopt foreign curriculum for their classroom teaching and learning and find sister schools from other OECD countries to collaborate with.

While tackling these challenges, Bambang had seized the opportunity offered by OLC4TPD through discussions with international education experts and teachers. In addition, he also organised collaboration with OLC4TPD by conducting face-to-face meetings and inviting the eModerator to lead discussions about international education systems, particularly Australia.

5.2.3 Challenges

For Bambang, using ICT to interact with other educators online was not a challenge. With his skills, he required only minimum assistance, but reached maximum outcomes during his participation in OLC4TPD. The only inquiry he made was when he wanted to know what OLC4TPD online meeting procedure was in the beginning. He was able to download the Skype application, install and download it himself and he also was able to register for other OLC4TPD online online learning environments, such as Facebook and the Web Portal Discussion Forum.

However, as with Adi, Bambang experienced one technical difficulty. In February 2010, he wanted to post a comment on the Web Portal Discussion Forum, but he was not sure whether it had posted successfully. He clicked the post button twice, which resulted in double postings. He said, "I am so sorry. There was a technical problem on my computer, so my comment got posted twice and I edited as it is. Thank you". While he knew there was a problem, he seemed not to know how to solve the problem. In his second posting that he said he had edited his posting, yet, in fact, the posting still had the same problem. Interestingly, Bambang never asked for any help.

5.2.4 Impacts

In OLC4TPD, Bambang had a lot of opportunities to share his extensive knowledge and experience with educators from Indonesia and overseas. His rich knowledge and experience gave a new perspective to the educators to think different aspect of education, such as assessment.

> I remembered when I read the Egyptian Gazette – a daily newspaper in Cairo, which featured an article with a similar title as yours. I also agree with your writing on the 2nd paragraph as it reminded me the writing of Mr … (name)

from … (a name of a well-known university in East Java), which said many learners experience "learning for test" syndrome ... [DB: 21st February 2010].

While Bambang contributed a lot to the community by sharing his insight on how to improve the quality of the education system in Indonesia, he received a lot of feedback from other community members that were rewarding for him. He usually wrote at the end of most of his postings, "…please let me know what you think" as he wanted to hear from other educators about how they perceived his ideas and thoughts. Their feedback was the real reward for him.

Despite his busy schedule, Bambang benefited from the flexible learning schedule offered by OLC4TPD. He was able to join in any ongoing online TPD activities (synchronous/asynchronous), whenever he got a chance. Through his interaction in OLC4TPD, he was enabled not only to meet people from his physical community, but also the wider community across Indonesia and overseas. This experience enriched his professional practice. In one of the interviews, he said," I received a lot of inputs relevant to my professional job" [Interview: July 2010]. He acknowledged the importance of OLC4TPD for his own and other educators' professional development by saying "OLC4TPD is very useful for learning and development. I hope that OLC4TPD will continue to grow and especially to provide a forum for sharing with experts from all over the world" [Interview: July 2010].

5.3 Eko, the Teacher

Eko was a 40-year old male Math teacher from a state junior secondary school in a rural area of West Java province. He had been a teacher for more than 17 years. After finishing his Bachelor in Education degree in Math at a teacher-training institute, he went back to his remote village and followed his calling, which was to improve the quality of education at the local school. His wife, who was also a teacher, followed his path to teach in a state primary school at Eko's village. Eko's secondary school was located up a mountain, which is a 5-hour drive from Bandung city (West Java Province). While Eko had to leave home very early in the morning on his motorcycle everyday and take 2 hours one way to his school, some of his students had to walk 3 to 4 hours one way to reach the school.

Eko was a committed and dedicated teacher. He always wanted to "carry out a meaningful teaching and learning process for his students, so they can develop themselves." He emphasised the importance of *ongoing professional development* to achieve his goals. This can be shown from his determination to continue postgraduate studies on Education Management after he became a full-time teacher. He went back to his old teacher-training institute in the city and returned to his remote school after he finished.

The researcher had the first contact with Eko in 2009 after an International Conference in Lesson Study that was conducted at his teacher-training institute. During the conference, the researcher met Eko's boss, who was the Principal of his school and had a chat with him about the possibility of involving teachers at his school during the initial phase of this study. He agreed and suggested the researcher contact Eko. Although Eko was a Math teacher, he was considered more highly qualified than other teachers to liaise with the *outside world*, because of his professional qualification and ICT competencies. Eko was given the responsibility to deal with some IT-related matters in his school, including online communication. The Principal said, "Contact Eko. Here is his number. He is good with computer and email, so you can always be in contact with us when you are back in Australia." Several teacher educators from his teacher-training institute also advised the researcher to making a connection with Eko's school. One of the teacher educators said, "Eko is our contact for that school and he can be your contact too." As the researcher initiated contact with Eko, Eko indeed proved himself to be a reliable proxy, who connected OLC4TPD with his school community.

As with Adi and Bambang, the researcher also asked Eko to participate in the preliminary survey to rate his own ICT skills by ticking the boxes that matched his abilities (see Appendices 5 and 6). This survey aimed to know individual's perception about his or her own ICT skills. The results constitute a baseline for understanding Eko's professional development journey before, during and after participating in OLC4TPD activities (see Table 20).

While the results of the ICT survey showed that Eko was not expert in ICT, his ICT competencies were above that of his colleagues. Having used computers for at least 5 years and the Internet for at least 3 years, Eko acknowledged that he had a good basic understanding (1) about the Internet, email and social media. Most of his

colleagues answered that they did not even have these three ICT competencies at that time. His other ICT skills, however, were not as good as his Internet, email and social media skills. He admitted that he did not know much about blogging, wiki, podcasting, online community, content/file sharing sites as well as online learning environments. He explained that ICT was not an essential element of the school's classroom teaching and learning practice. The use of ICT at his school was limited to only administrative purposes. While there was no proper ICT infrastructure (including Internet connection at the school) Eko connected online using his dial-up connection at his home and through his mobile phone at a later stage.

Table 20
Results of Eko's Personal ICT Assessment

(0=doesn't know much, 1=basic skill, 2=moderate skill, 3=high skill)

Internet	1	Can navigate to familiar website and conduct simple search
Email	1	Can write, send and open an email, use address book and search for email.
Blog	0	Does not know much
Wiki	0	Does not know much
Podcasting	0	Does not know much
Social Media	1	Can make a personal account, write personal profile and add additional information; look for friends and acquaintances; write comments on own page or others.
Online Community	0	Does not know much
Content or File Sharing Sites	0	Does know much
Online Learning Environment	0	Does not know much

Using ICT for professional development was Eko's long-term vision. He said that he could only use ICT at *minimum capacity* for his professional development at that stage, but he had a vision that one day he could use it "to obtain the information about the development of teaching and learning methods, compare education system in other places and adopt suitable ones were suitable for the school". His statement showed that he had confidence in the potential of ICT to develop his professional competencies, even though the opportunity had not come at that time.

5.3.1   *Joining OLC4TPD*

In October 2009, Eko participated in OLC4TPD for the first time. He was one of the first three teachers who received the invitation from the researcher after the initial phase of study and decided to join the community. Among the early members, Eko was the only courageous teacher who built a simple personal site on OLC4TPD Web Portal with his broken and simple English. However, Eko only made his first posting through the Web Portal Discussion Board nine months after he became a member in 2009. His first post was related to the Lesson Study approach, which was a TPD approach practiced at his school.

Nine months after joining OLC4TPD (July 2010), Eko met the researcher face-to-face for the first time at another International Conference on Lesson Study. The researcher and Eko had a long informal chat, where he asked the researcher a lot of questions regarding OLC4TPD and how he could be involved in the community more actively. He shared some of the challenges he encountered as he participated in the community over the previous months, which included time, ICT literacy, ICT access and the feeling inferiority.

The good news was that Eko had passively monitored and followed OLC4TPD online activities. He shared how much he had learnt during the last nine months since his first registration as a member. He said that he had received a lot of useful information for his professional development. The researcher discussed with Eko what he could do to participate in OLC4TPD and encouraged him to take a more active role in the community.

A few days after the face-to-face meeting, Eko appeared on OLC4TPD synchronous online conference environment (Skype). He told the eModerator that he and his friends wanted to listen to the eModerator's seminar. The seminar was conducted face-to-face at one of Bambang's schools in a rural area in East Java and synchronously broadcasted to OLC4TPD community. It was surprising to know that Eko finally managed to download and install Skype without any help and managed to involve some of his colleagues to participate in the seminar. Eko and his colleagues earnestly listened to the talk and asked a lot of questions through the chat windows.

The day when the researcher met Eko at the conference was a turning point in his online professional development journey with OLC4TPD. Growing in confidence,

he started to take a more active role in the community and proved to himself that he had the capability to do so. The face-to-face meeting with the eModerator was a significant time in Eko's OLC4TPD engagement as from that time he started to become one of the most determined and persistent member of the community.

5.3.2   Learning @OLC4TPD

After the broadcast meeting in July 2010, Eko attended more online meetings regularly and voluntarily became a Hotseat Speaker. He was the only Muslim member who insisted that OLC4TPD should be held even during the Muslim fasting month at that time [Ramadhan, September 2010] and he volunteered to speak. It turned out that there were no other participants coming during the fasting month, yet he did not lose hope. He suggested to the eModerator that a similar seminar be held two weeks after. The second time was successful as there were more participants and he could speak about a topic that was dear for him, which was his school implementation of School-based Lesson Study. His rural and remote school was considered successful in implementing this professional development program (Hendayana et al., 2009).

> At school A, there were 32 teachers, 50 percent of them felt that Lesson Study has made teaching and learning process more meaning for students, teachers are more challenged to learn more about teaching and learning theories and materials because of the students' need analysis conducted on the field. However, several teachers, especially those who rarely joined the lesson study activities, have similar opinions about school-based lesson study, even though we have started in 2007 and there were many experts from Japanese donor organisation have come to this school. So, although theories and practices have been done, we still need to learn about the philosophy slowly through ongoing process. The role of moderator in the first phase of Lesson Study is crucial for the success of an open class [DB: September 2010].

Through OLC4TPD, Eko felt that he had more opportunities to share about his school and any improvements that they had made. Prior to OLC4TPD, he had only relied on a yearly International Conference on Lesson Study conducted at his teacher-training institute to share about his school. He believed hat OLC4TPD could support his ongoing professional development process.

> My hope to join this forum is same as Lesson Study, if in school-based lesson study I can share with colleagues from the same school and in district level subject-matter lesson study, I can share with all teachers who teach similar subject in the district, teacher educators from teacher-training institute A and

education government officers, I hope that through this forum, I can share with more people. Hope this will help me to make a meaningful teaching and learning process in my classroom [DB: 02 September 2010]

Eko loved to share. His spirit of sharing was apparent in his online interaction. He not only liked to share his own experiences, but he also liked to respond to questions posed by other community members. The following is an example of his response to a teacher who complained about the need to make a change at school, when there were a lot of challenges due to mountainous workloads and commitments.

The role of the government officer, especially the headmaster, is very important. When someone who liked reading led my school, the teachers were slowly influenced by his habit. They became to like reading. When the price of the newspaper became 1000 IDR (10c), our teacher started to subscribe for it [Facebook: 19th November 2010].

Most of his postings were categorised as *Real Ideas and Authentic Problems* in Twelve Socio-Cognitive Determinants of Knowledge Building (Scardamalia, 2002). He shared a lot of his authentic experiences from the school, which were unique and useful to give an insight and comparative perspective in the community. The authenticity of his experience was significant as a reference for the other community members to learn about the success or failure of certain methods, approaches, or thoughts practiced in the classroom.

After the meeting in July 2010, Eko participated in 5 out of 6 online meetings until the end of December 2010. While he was active in the synchronous discussions, he only made two postings on the Web Portal Discussion Forum during the same period of time. The first posting was his first introduction and the second one was his introduction and sharing about the School-Based Lesson Study program. He did not make any posting on the Facebook, yet he regularly clicked *Like* to any posting made by the eModerator as well as other members.

An interesting fact was that many new members participating in OLC4TPD mentioned Eko's name in their introduction. A couple of times, his name appeared on the Facebook. They usually said, "I am Eko's friend from school..." or "I know about this community from Eko". Apparently, Eko never stopped sharing is experience with his colleagues about OLC4TPD 'behind the scenes'. Although he did not actively contribute by posting information on the Web Portal Discussion Forum or Facebook, he would share any information that he got by printing it up and share it with his

friends who did not have sufficient access to ICT. One day when commenting about video-based teaching resources shared by the eModerator, he said, "I will try, thank you, because many of my friends also asked for it" (April 2011). He meant that he would share this information with his colleagues offline. Through his efforts, his friends started to grow in their awareness about OLC4TPD. Many of them joined OLC4TPD at a later stage, as the mobile Internet connection got better at their school.

5.3.3   Challenges

OLC4TPD led Eko to a new professional development journey he had never imagined before. However, he still faced a lot of ongoing challenges in relation to his involvement with OLC4TPD. The main challenges were related to time and ICT access. The significant distance from his school to his home, where he could get Internet access, often caused him to come late or miss an online meeting. In December 2010, after missing a meeting, he regretfully said, "Oh no, I wanted to come, but on Thursday after leaving early from school, I still arrived at home at…"

Eko was absent from the online activities from the beginning of 2011, because he received a new appointment as a teacher at an RSBI school in neighbouring district. As a result he is working at two different schools and he has had to manage his time more carefully. It took several hours to travel from one school to another in addition to new responsibilities that he had. Attending synchronous meetings had become less feasible for him. His participation became limited to the Facebook interaction, which he could access easily through his mobile phone. Despite the challenges, Eko continued recruiting more teachers and school leaders to join OLC4TPD.

5.3.4   Impacts

Joining OLC4TPD opened a new door for Eko's professional development. Despite his particular circumstances, Eko has been able to reach his dream that he stated to the researcher at the beginning of study, which was to "engage in ongoing professional development so he could carry out a meaningful teaching and learning process for his students, so they can develop themselves." The online learning environments had provided flexibility across time and geographical differences. Eko

was able to obtain new information that he never had before without having to travel five hours to the teacher-training institute in the city. He was also able to expand his previously limited professional learning network and engage more in the process of information exchange and knowledge building.

Eko apparently had grown more in his confidence, knowledge and skills related to international-standard education systems and practice. In the beginning when the researcher met Eko, he was very hesitant to speak in English and even teach in English. As he moved beyond his *legitimate peripheral participation* and engaged in more meaningful and deep social learning interaction, he received value from his participation.

As OLC4TPD conducted a number of sessions about international education system, Eko received more exposure to this area that subsequently helped build his professional competencies. His competencies and confidence seemingly influenced his decision to take the new appointment as a teacher in a Leading to International-Standard School in the neighbouring district recently.

5.4 Summary

This chapter has discussed the professional learning journeys of three OLC4TPD members who were, a teacher educator (Adi), a school leader (Bambang) and a teacher (Eko). They were chosen because of their active involvement in OLC4TPD from the beginning to the end of the study (October 2009 to December 2010). They also had significant roles in the community development. The three of them shared a passion for improving the education system in Indonesia, yet each of them had distinct professional learning journeys to achieve their goals. Their stories are representative of many similar stories from teachers, teacher educators and school leaders in OLC4TPD.

ICT access and competencies were significant factors that differentiated the journeys taken by Adi, Bambang and Eko. Having good ICT access, Adi and Bambang had more opportunities and exposure to improve their ICT capabilities and explore its potential for their professional development. Their integration into OLC4TPD was faster and smoother compared with Eko, the teacher who lived and

worked in a rural and remote area. It took Adi and Bambang only a few days to get access and engage in OLC4TPD, while it took nine months for Eko to be an active member of the community. In terms of skills, each of them had common basic ICT knowledge and abilities that enabled them to use online learning environments and engage in the online learning activities. Those skills were using the Internet, e-mail and social media. Chapter 6 will discuss the relevance of these basic skills in more detail.

Each of these participants faced challenges in their online interaction at OLC4TPD, mainly related to ICT access and ICT literacy. They were all not familiar or had limited exposure to online learning environment (synchronous and asynchronous), thus they experienced a steep learning curve as they started using OLC4TPD systems. While Adi and Bambang had more opportunities to learn from both the eModerator and other community members, Eko had a longer and more challenging learning path to take in the beginning. However, as time passed, Eko benefited from the advancement of ICT (mobile technology and social media), which provided more alternatives for him to engage in online social learning interactions. Many teachers in OLC4TPD came from disparate geographical locations around Indonesia and they had similar experiences to Eko. On the other hand, Adi and Bambang were examples of teacher educators and teachers who live and work in the cities, yet had limited exposure to the use of ICT to assist TPD practice.

In terms of joining OLC4TPD, both Adi and Eko joined the community, because they had participated in the initial phase of the study and they were interested in exploring more about OLC4TPD. Adi met the researcher face-to-face, while Eko talked with her on the phone. They started their involvement in the online learning community through the Web Portal Discussion Forum (most of the community members joined the community in a similar way to Adi and Eko). They often knew each other in a real-world community prior to their engagement in the online learning community. They started their online engagement through the Web Portal Discussion Forum and Skype, in which Skype was preferable because it offered greater intimacy.

Bambang's initial exposure to OLC4TPD differed, because he came across OLC4TPD as he browsed Facebook (in common with most of the newer OLC4TPD members). As they joined OLC4TPD Facebook, some of them also participated further in the asynchronous discussion on the Web Portal Discussion Forum and the

synchronous Online Meetings on Skype. Membership and participation on Facebook were not as deep as the Web Portal Discussion Forum and Skype, but it involved more people, thus was more sustainable. Chapter 7 discusses further the social interaction within the three online environments used for OLC4TPD.

Adi, Bambang and Eko shared the common characteristic of loving to share. They all believed in ongoing professional development and sharing for building professional competencies. Although working together (*gotong royong* in Bahasa Indonesia) is part of the Indonesian national identity, willing to think and question critically was not as easy for most Indonesians, because it is a high power distance society. Adi, Bambang and Eko had shown to the community that an educator should be able to think critically about the subjects they teach and discuss it with other colleagues in an academic way. They also demonstrated to the community how they exploited various online learning environments to support their professional learning process.

CHAPTER 6

FINDINGS AND DISCUSSIONS:

ICT AND SOCIO-CULTURAL ASPECTS OF OLC4TPD

Overview

There are several ICT and socio-cultural facets that influenced the operation of OLC4TPD in engaging its members in the social learning interaction process. These six facets of ICT are interrelated in forming and sustaining the online learning community for educators in Indonesia. These are ICT access, length of experience in using ICT, ICT skills, gender, leadership and synchronous interaction. This chapter reports on and discusses the analysis of data, from the range of sources available to the study, in terms of these interrelated facets of the technology and the socio-cultural environment and their impacts on OLC4TPD. The sources of data used were the ICT surveys, community transcripts from the three main online learning environments used during the period of October 2009 to December 2010, participant observation notes, brainstorming workshops, email conversations as well as the professional learning journeys of Adi, Bambang and Eko (Chapter 5).

6.1 Access to ICT

Access to ICT is a preliminary requirement of an Online Learning Community (OLC). Having access to ICT is critical before online teaching and learning can occur in an OLC environment (Salmon, 2002; 2011). This process occurs during the Stage 1 - *Access and Motivation*. This section discusses how the available ICT access for OLC4TPD members at home, office or other places influenced how far they could engage themselves in the online social learning process for their professional development.

The examples from Chapter 5 showed that Adi (teacher educator), Bambang (school leader) and Eko (teacher) all had sufficient 'minimal' ICT access either at home (Eko), office (Adi) or both at home and office (Bambang) before commencing their participation in OLC4TPD. Table 21 illustrates that, based on the preliminary ICT survey, 92 percent of the prospective OLC4TPD members had access to a computer at home and 92 percent had access at their workplaces. While only 32 percent of them indicated that they had Internet access at home, 69 percent of them reported that they had Internet access at their workplace. The teachers and teacher educators tended to have computers at home, where some of them also had a limited dial-up connection at that time. Several participants mentioned that they had computer and Internet access in 'other' places, which based on the fieldwork observation; it was disclosed as a public rental place, like *Warnet* (Internet Café). Like Eko, most teachers working in rural and remote areas, usually had no, or limited access to the Internet, thus they might gain their access via an Internet Café or 'telecentre'.

Table 21
Computer and the Internet Access

	Computer			Internet		
	Home	**Office**	**Others**	**Home**	**Office**	**Others**
Adi	Yes	Yes	No	No	Yes	No
Bambang	Yes	Yes	Yes	Yes	Yes	Yes
Eko	Yes	Yes	Yes	Yes	No	No
OLC4TPD (*n*=100)	92	92	15	32	69	22

The ICT infrastructure access determined the level of participation that an individual could maintain in OLC4TPD. Eko and his colleagues are typical examples of in-service teachers in rural and remote areas. With his ICT limitations, it took several months for Eko to engage and contribute in OLC4TPD. It was found that Eko could only follow OLC4TPD activities using his limited dial-up home Internet access during the early stage of the study. Many of his colleagues could not participate at all because they did not have any ICT access. With no or limited ICT access, it was challenging for Eko and his colleagues to relate to what was going on in the OLCs.

While limited ICT access could hinder the online participation of the members, having a strong motivation helped members to survive the challenges and inspire them to make the best out of this situation. Motivation is another key aspect of Stage 1 *Access and Motivation* (Salmon, 2002; 2011). Access to the online learning system is as an external factor, whereas intrinsic motivation is a significant internal factor that has to be present within learners in order to progress. Motivation is related to an individual's goal, such as goal to learn and try something new. Eko's strong motivation and consistency were the keys to his success. With a vision of *ongoing professional development*, Eko aimed to develop "… a meaningful teaching and learning process for his students, so that they could be independent learners who could develop themselves" (see Section 5.4).

One of Eko's strategies to tackle the ICT access challenge was to share any useful information he received from OLC4TPD through 'off-line' channels with his colleagues, such as word of mouth or printed material. This strategy was helpful not only for his professional development, but also for his colleagues. This example was taken from an event, where Eko shared some video-based materials with his colleagues in a rural and remote school. "I will try, thank you, because many of my friends also asked for it" [Facebook: 06 April 2011]. Eko used his limited Internet access to get new knowledge and shared it off-line (printed) with his colleagues who did not have any ICT access at all. Thus, his colleagues could also benefit from his engagement in OLC4TPD even though they could not directly engage in the community. The eModerator was surprised to find that many of Eko's colleagues joined in OLC4TPD through Facebook (via their mobile phones or Internet café) during the months of August and September 2010, which was about ten months after Eko's first engagement in OLC4TPD. Below are a few examples of their orginal

conversations taken from the Facebook. Some of them were translated from Bahasa Indonesia, while the others were originally written by the participants in broken English.

> Todays, many ways for supporting Professional Teacher, OLC4TPD for me is one window to deliver or share teachers' experiences on learning in the world. So thanks to Uniceu Sari who has first time invited us. *Cas, B.Ed - Secondary School A - email address, a male teacher* [Facebook: 14 August 2010]

> I've registered (membership), however, I have not been so active in communication for some reasons. *Cas, B.Ed, a male teacher* [Facebook: 15 August 2010]

> Through Skype or where, Mam? I am from Secondary School A. Friend of Eko. *Ari, a male teacher* [Facebook: 26 August 2010]

The development of social media and mobile technology at the later stage of the study led to increased access to OLC4TPD. In 2009, Facebook became more prevalent in Indonesia, which made this country having the second largest users of Facebook in the world, linked perhaps to the significant increase in 3G mobile market (Cutler, 2010). More of Eko's colleagues started to have Internet access through their smart mobile devices. Smart phones became more affordable and competitive. Mobile providers competed to offer the best mobile data Internet services that included the use of unlimited social networking sites, such as Facebook. Thus, Internet access became greater for the teachers at Eko's school and allowed them to get involved in OLC4TPD activities.

This greater access to mobile Internet did not guarantee a better quality of Internet connection. The quality of ICT access at rural and remote places was often not reliable. While many of Eko's colleagues started to engage actively through Facebook during this period, only one teacher could manage to get involved in OLC4TPD online meetings, because of the Internet bandwidth limitation. This occurs not only in rural area, but Adi, whose office is located in a small city in West Java, also experienced a lot of technical difficulties, especially when using Skype at his office (due to Internet bandwidth problems).

Compared with home, access to ICT at the workplace was usually found to be better, not only from the technical side, but also from the socio-cultural side. ICT access at home should represent work flexibility and independence, yet in the

Indonesian context, having ICT access at home can be complicated, because of the social paradigm that work "must take place at the office and with other people".

Despite some technical problems related to Internet bandwidth, Adi used his workplace's ICT facilities to achieve his professional goals. His case was very common among the majority of OLC4TPD members. Although they could also have Internet access from their mobile device, access at the workplace was the most effective for supporting professional development. As with Adi, people in general are usually more motivated to work and study when they are together with other people. In a strong collectivist society such as Indonesia, social control and presence are important factors that define one's lifestyle.

Despite all the challenges with ICT access, one good online learning experience, could potentially lead to a much bigger impact in TPD. As an example, OLC4TPD experience opened up Adi's mind to a more feasible way to conduct TPD practices.

> 2009 is a historical moment for me as I had got the opportunity to be Hotseat Speaker. All the best ideas and experience that I have got when I travelled around the archipelago has made me enjoyed the online session on November 2009. Now, I would like to invite all educators whom I met to join in this community ...[DB: 09 December 2009]

Instead of travelling across different islands from *Sabang* (the most Western part of Indonesia) to *Merauke* (the most Eastern part of Indonesia), Adi was inspired to train his teachers online. He continuously introduced OLC4TPD to his colleagues and teachers he trained across Indonesia and overseas. He was aware that he needed a better implementation framework and strategy for OLC-based TPD implementation in rural and remote schools in Indonesia, where their ICT infrastructure and facilities were still under development.

Access to ICT was an essential aspect in the design and implementation of OLC4TPD in Indonesia. Social learning interaction and participation of teachers and teacher educators in the OLC4TPD was greatly determined by the level of ICT access they had at home, office or other venues. With its unique ICT landscape, Indonesia is home of the 4th largest mobile market and Facebook, however, at the same time the country still struggles in providing equal ICT infrastructure and access for everyone across the archipelago, especially those in rural and remote areas. Many teachers and

teacher educators participating in this study, regardless their eagerness to participate in this study, could not continue their participation due to poor ICT access they had at home or office in rural and remote areas.

6.2 Length of Experience

Not only access, but also length of experience in using ICT influenced the level of social participation in OLC4TPD.

Among the one hundred educators who participated in the preliminary ICT Survey (see Table 22), over 50 percent of them had more than five years of experience in using a computer and only 40 percent of them had experience in using the Internet over the same period. These preliminary results represented the initial ICT exposure and experience of the prospective OLC4TPD community members.

Table 22
Length of Experience in Using Computer and the Internet

	Never	< 1yr	1-2 yr	3-4 yr	> 5 yr	NA
Length of Use Computer (*n*=100)	2	10	8	10	57	13
Length of Use Internet (*n*=100)	7	7	24	18	40	4

It was found that ICT access and computer and Internet experience were closely linked. The ownership of a computer at home has been relatively common among educators in Indonesia over the last fifteen years. Teachers usually started using a computer to complete academic or administrative tasks when attending university. After graduation they continued the habit of using a computer in their professional as well as daily lives. It was therefore, not surprising to find that the majority of participants had more than five years of computer experience.

The Internet, on the other hand, has just started to be popular over the last ten years. The cost of having an Internet connection used to be high. People used to go to *Warnet* (Internet café) to access the Internet. Thus, the length of exposure to the Internet is usually shorter. The number of people with less than 5 years of experience with the Internet was higher (56 percent) than the number of people with more than 5 years of experience with the Internet (40 percent).

The length of experience in using both a computer and the Internet, influenced the online engagement of OLC4TPD members. From the examples in Chapter 5, Adi, Bambang and Eko, the researcher learnt that all had more than five years of experience in using a computer at the time when the survey was conducted in 2009. Among them, only Adi and Eko had used the Internet for more than five years during the same period (see Table 23).

Table 23
Length of Use Computer and the Internet

	Adi	**Bambang**	**Eko**
Length of Use Computer	> 5 years	> 5 years	> 5 years
Length of Use Internet	> 5 years	> 5 years	3-4 years

With more than five years exposure to the computer, these participants did not need any extra lessons to increase their computer skills. Once the OLC concept was explained, they had the ability to explore it further independently. In contrast to these participants, several teachers from Eko's school as well as those in a rural Bali primary school had little or no exposure to computers or the Internet. Most of these teachers were in their middle ages and had never been required to use any computers or the Internet during their study or their professional lives. Thus, they had difficulty understanding the concept of OLC. While some of them remained ignorant, others started to pick up when mobile and social media technologies became popular during the later stage of this study (2010-2011).

A preliminary basic ICT introduction course would have been ideal to support the development of the professional ICT skills of these teachers. This would have allowed more choices and possibilities in using the online learning environments and its tools to improve their professional competencies. However, running a basic ICT course for teachers requires financial and time investments, which was not feasible. An alternative suggested by the eModerator to OLC4TPD members was to seek help from their ICT-literate colleagues, friends, and families in order to get a jump-start in learning about ICT before involvement in OLC4TPD.

Years of experience in using a computer by itself could not ensure smooth adoption and implementation of OLC4TPD concept. Years of exposure in using the Internet enhance the participants' online engagement. As soon as Adi and Bambang

learnt about OLC4TPD (see Chapter 5), they could immerse themselves in this online learning environment without any difficulty or hesitation. They quickly made contributions to the community through the Web Portal Discussion Forum, Wiki and Skype. In contrast to Adi and Bambang, it took about nine months for Eko to get used to the concept of online learning in OLC4TPD before he decided to move beyond his 'legitimate peripheral' community participation. Eko shared with the eModerator during his first face-to-face meeting in July 2010 that he had a lack of confidence to use OLC4TPD online learning environments, because he was not sure how he should use it and what the implications would be. He was also not sure what he could do in an online learning environment.

About a year after OLC4TPD was introduced, Eko's friends who heard about the community 'off-line', finally decided to join and participate in the community. Like Eko, they needed time to learn and get familiar with this online learning environment and its activities. Without much initial investment in the preliminary ICT course, those teachers could embrace the mobile and social media technologies to support their professional development through OLC4TPD. This finding provided guidance for further implementation of OLC4TPD in order to reach out to educators in rural and remote areas of Indonesia.

The study determined that the length of experience in using the computer and Internet determined the length of time needed for the teachers and teacher educators to initiate their participation in the OLC4TPD and engage in its online activities. Previous exposure to the computer and Internet did not only cut the amount of time spent to learn about the technologies, but at the same time improve participants' confidence in taking active roles in the community. While a number of teachers and teacher educators retracted themselves from the community due to the lack of skills in ICT, several educators, (particularly younger educators, 25-40 years old) were usually more motivated, open to changes, not afraid to admit their weakness and willingness to progress in their learning process.

6.3   ICT Competency

ICT competency is the next facet of ICT that influences one's engagement in an OLC. The educators (*n=100*, teachers *n=74*, teacher educators *n=26*) who participated in the early survey rated their own ICT skills (9 items) by ticking the boxes that matched their abilities on a scale of 0 (does not know much) to 3 (highly skilled) (see Appendices 5 and 6 for ICT Survey). The results of the survey can be seen in the Figures 11 and 12, which are related to the Table 14 (see Chapter 4).

Eighty-one percent of the teacher educators rated their Internet skills as high, while only 31 percent of teachers reported having high Internet skills and another 31 percent with moderate skills. Out of the 80 percent of the teacher educators, 35 percent revealed that they were highly skilled with the email compared with only 9 percent of teachers (24 percent of teachers reported that they did not know much about email). All participating teachers and half of the teacher educators did not know much about online communities. Only 34 percent of teachers and 38 percent of teacher educators knew about online learning environments. Thirty percent of teachers and 40 percent of teacher educators did not know about social media. The people who did not know or use social media were usually the middle-aged participants.

Comparing the results of preliminary ICT survey (see Table 24) to the skills of the three educators (Chapter 5), it was found that they considered the Internet and Email competencies as their two main best ICT skills. Adi and Bambang rated themselves to have high skill (3) with the Internet and moderate skills (2) with email, while Eko reported to have basic skills (1) with both the Internet and email. These three participants reported that they had poor skills in podcasting and online learning environment. Adi said that he had only basic skills with podcasting, while Bambang and Eko considered that he did not know much (0). Adi and Bambang rated themselves to have basic skills (1) with online learning environment, while Eko reported that he did not know much (0).

Among the three participants, Eko was considered to have the least ICT skills. While Eko rated himself not to know much about other ICT skills, his ICT ability was considered above average compared to his colleagues. His ICT skills were typical for

average teachers and teacher educators in Indonesia, because they share similar situations, such as ICT access and literacy. Their situation has been improved with the recent advancement of mobile technology and social media. While the user interaction with a mobile device in accessing social media is different to that on a computer, teachers using these did not prove a hindrance to their access and acquisition of ICT skills.
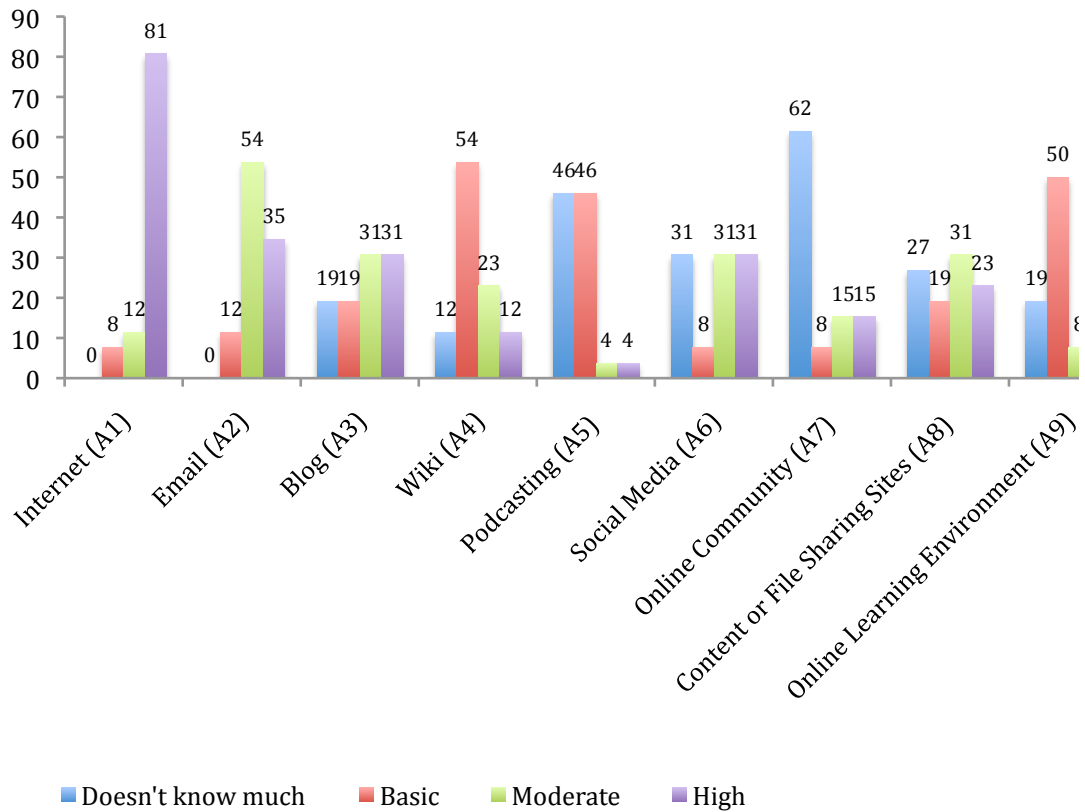
Figure 11. Teacher educators' ICT competency survey results
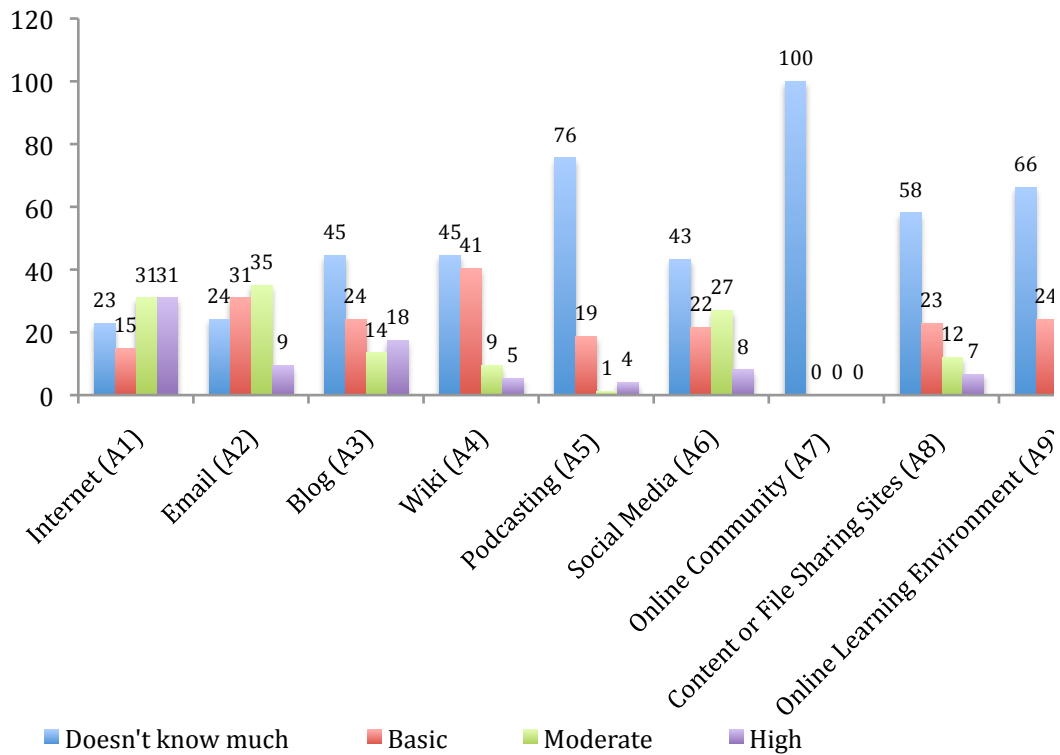
Figure 12. Teachers' ICT competency survey results

In the study, the eModerator persistently promoted the use of Facebook (via mobile phones) as a means of communication despite the reservations by a number of senior teacher educators (refer to Chapter 4), because of the apparent potential in these ICT online learning environments to engage the teacher educators. Facebook had reached out not only to one or two districts in one province, but also many places across Indonesia. The educators constantly used Facebook for social purposes, thus a seamless transition from social to ongoing professional learning in one online environment could happen easily. During the initial stage, Facebook's purpose was mainly to encourage 'peripheral participation' of the educators. Yet, the research found that Facebook became a prominent online learning environment to support ongoing TPD.

Table 24
ICT Skill Assessment of Adi, Bambang and Eko

ICT Skills	Adi (teacher educator)	Bambang (school leader)	Eko (teacher)
Internet (A1)	3	3	1
Email (A2)	2	2	1
Blog (A3)	1	1	0
Wiki (A4)	1	1	0
Podcasting (A5)	1	0	0
Social Media (A6)	1	2	1
Online Community (A7)	2	2	0
Content or File Sharing Sites (A8)	2	0	0
Online Learning Environment (A9)	1	1	0

Note: (0=doesn't know much, 1=basic skill, 2=moderate skill, 3=high skill)

The study showed that there was a big gap between teachers and teacher educators participating in the study in term of ICT skills. The teacher educators generally had more ICT skills compared to the teachers. Both teachers and teacher educators had very limited experience in using online community. The ICT skills determined proficiency and level of engagement of the participants in various OLC4TPD online environments. However, despite the differences, both teachers and teacher educators shared three common skills that enabled them to participate and engage in the OLC4TPD activities, which were Internet (A1), email (A2) and Social Media (A6). With these three skills, most of the community members could survive and grow professionally through their social learning interactions in the OLC4TPD.

6.4   Gender

Gender is an interesting phenomenon in OLC4TPD. Indonesia has a moderate Index of Masculinity (MAS) at 46 out of 100 (Hofstede, 1994, 2009), which means that this country is not as feminine in its culture as North European countries, such as Sweden (5 out of 100), but it is less masculine than other countries like Japan (95 out of 100), China (66 out of 100), USA (62 out of 100) and Australia (61 out of 100). In

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this type of society, women mainly teach younger children and men teach at the higher levels of education. Children are usually more exposed to female teachers as models of behaviour rather than heroes. Reports show that in 2005, 97.7 percent (15.6 percent trained) of the pre-school teachers, 61 percent (93.5 percent trained) of the primary school teachers and 43.5 percent (53 percent trained) of the secondary school teachers were females (Council of the World Report, 2008; Childinfo, 2008). Statistics from the Department of Education in Indonesia show similar results for 2002 with the number of female teachers who taught at the primary education level in Indonesia higher than male teachers (see Figure 13). On the other hand, male teachers dominated the other education levels from junior secondary to higher education. There was also a significant difference between males and females in educational leadership. At all levels of education, only 20 percent of female educators had leadership roles at schools (see Figure 14).

The proportions relating to gender in the Indonesian education system were reflected in the study. As the majority of the participants of the study were from secondary and higher education, there were more male than female participants in OLC4TPD (see Table 25). Seventy-four teachers (50 males and 24 females) and twenty-six teacher educators (23 males and 3 females) participated in the preliminary ICT surveys conducted between July and August 2009. Twenty of these participants became the first OLC4TPD members on the Web Portal, which consisted of 17 males (2 teachers and 15 teacher educators) and 3 females (1 teacher and 2 teacher educators). On Skype, there were only 11 female IDs registered in this online environment. In 2010, there were more female members participating on the Skype online meeting as *silent* participants. The researcher did not conduct a census on gender differences on Facebook due to dynamic change of the membership in this community.
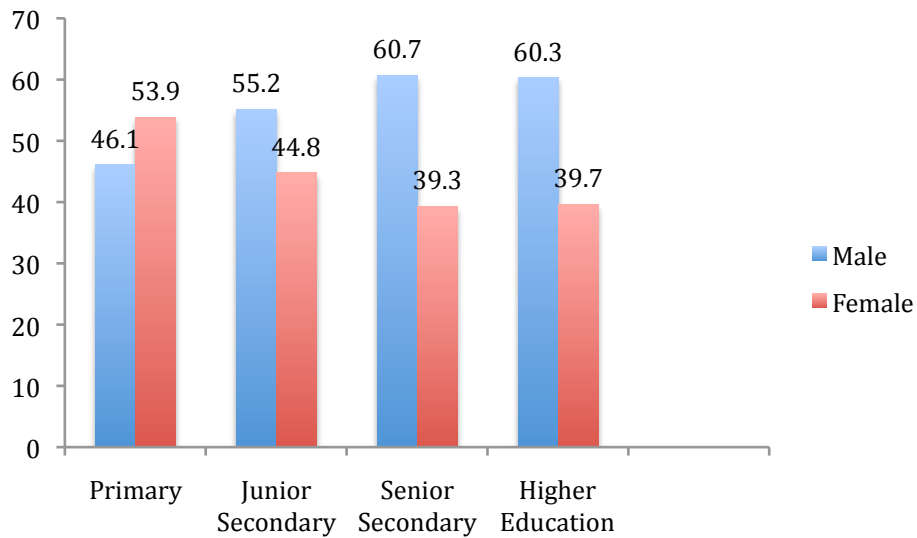
Figure 13. Proportion of teachers by level of education and sex (2002)
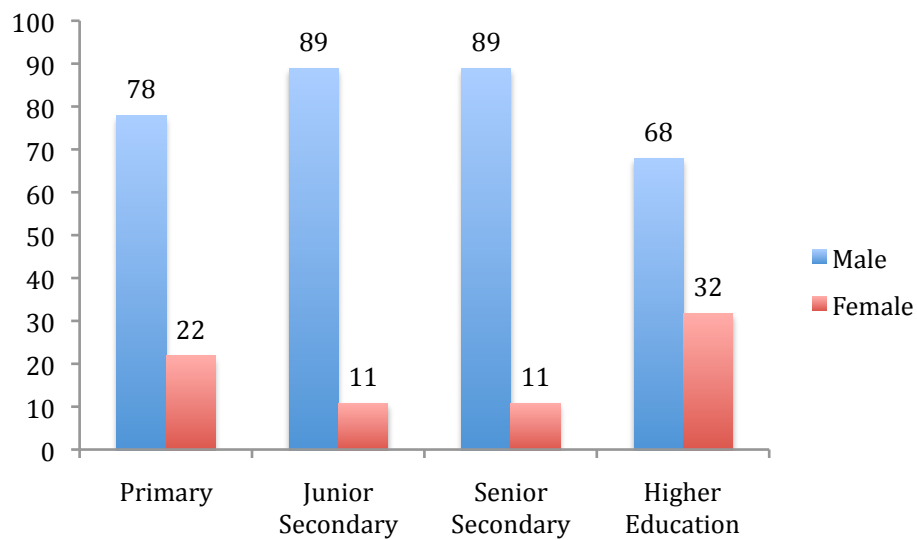
Figure 14. Proportion of school head masters by level of education and sex (2002)

The lower membership and participation of the female members in OLC4TPD was also influenced by availability of ICT access (see Table 26). There were less than 20 percent of female members who had access to a computer and the Internet at home, office and other places during the initial stage of the study. This situation seemed to affect their involvement in the online learning community.

Table 25
Gender Composition on the Web Portal, Skype and Facebook

	Time	Online learning environments and learning activities	Total Members	
			Male	**Female**
1	Oct 2009 – Dec 2010	Discussion Forum (Web Portal)	68	36
2	Nov 2009 – Dec 2010	Online Meeting (Skype)	34	11
3	Nov 2009 – Dec 2010	Social Networking (Facebook)	1053	

Table 26
ICT Access Based on the Gender

	Computer			Internet		
	Home	**Office**	**Others**	**Home**	**Office**	**Others**
Males	65	67	11	25	50	16
Females	27	25	4	7	19	6
OLC4TPD (*n*=100)	92	92	15	32	69	22

In terms of online contributions, the female members contributed less on the Web Portal Discussion Forum compared to the male members (see Table 27). Their contributions only constituted 15 of the 98 postings made by community members (between October 2009 – May 2010). Six female members (2 teacher educators and 5 teachers) contributed to the 15 postings.

Table 27
Gender Composition in the Web Portal Discussion (Oct 2009 - May 2010)

	Teachers		Teacher Educators		School Leaders	
	M	F	M	F	M	F
Posting Numbers	38	6	33	9	12	0

It was discovered that male educators, due to ICT tasks being more gender-specific in Indonesia, dominated the Skype online meeting, during the initial stage of the study. Among online meeting participants, there were only two female teacher educators, who regularly participated in each online meeting. These female teacher educators joined the online meeting through a group of teacher educators, which was facilitated by the male dean and male IT experts from the faculty. The male participants seemed to informally take a charge of the decision-making and coordinate

all ICT-related stuff, while the female participants were not expected to know about ICT-related matters.

The situation changed significantly when OLC4TPD members used Facebook more intensively in 2010. As the most popular social media, Facebook has led to a number of national debates (Associated Press; Gelling) The presence of Facebook, was often considered as *haram* (forbidden) by many clerics in the largest Muslim country as it could be used for gossiping, spreading lies and encouraging vulgar behaviour. However, it was reported that Facebook is like a *modern incarnation* of the Indonesian coffee shop as people often sit for hours gossiping and meeting new people. Many Indonesians have become obsessed with this kind of socializing, which has opened up a new channel for Indonesian men and women to connect virtually without any hesitation. From just being a socializing tool, this study intended to exploit the potential of Facebook to support how educators could socialise with other educators and engage in ongoing process of learning.

The results of the study suggested that Facebook could smoothly bridge the gender gaps in OLC4TPD. With access through personal mobile phones, female educators became empowered. They had more confidence in using the technology and seemed to be more liberated in sharing their thoughts without any support from their male counterparts. As they grew in confidence through their interaction with other members of the community, they became more encouraged to engage and contribute beyond *legitimate peripheral participation*. They started to explore more possibilities to have synchronous interactions with other members. Mobile data Internet and mobile 3G modem became their gateways to join in the Skype synchronous interaction.

In Facebook, there was no difference found between male and female in terms of number of contributions. Participation by gender by the months of April 2010 (first six-month period from the launch in October 2009) and October 2010 (first one-year) is shown on Table 28.

Both female and male teachers contributed equally during the months of April 2010 and October 2010. Average number of postings of male and female participants was between 1-2 posting/person. In April 2010, there were more female contributors (12 teachers) than male contributors (7 teachers), yet the average number of postings

of male contributors was higher. The female contributors made 13 postings (average 1.08 posting/person), while the male contributors made 12 postings (average 1.71 posting/person). Six months later (October 2010), the opposite situation happened. There were less female contributors (4 teachers) than male contributors (8 teachers and 1 teacher educator), yet the average postings of female contributors were higher.

Table 28
Gender Composition in the Facebook (Apr 2010 & Oct 2010)

	Teacher		Teacher Educator	
	Male	Female	Male	Female
April 2010	7	12	0	0
	12 postings (1.71/person)	13 postings (1.08/person)	NA	NA
October 2010	9	4	0	0
	14 postings (1.5/person)	8 postings (2/person)	NA	NA

The findings would seem to indicate that during the first six months, the number of female members who started to contribute in OLC4TPD was higher than their male counterparts. However, their contribution was at *peripheral* level, as they still 'learnt' about the OLC environment and its learning activities. Once a female started to contribute, the others would follow. Their interaction at this stage was considered to be Phase 2 *Online Socialisation* in online teaching and learning model (Salmon, 2002, 2011). Examples of female comments:

> Oh..I missed it yesterday cos it was a holiday... *Maya, a female teacher* [Facebook: 03 April 2010]

> Me, too. someday, I want to join it....if I know it. *Tri, a female teacher* [Facebook: 03 April 2010]

In contrast to the female contributors and their postings, male educators seemed to feel more comfortable in the new online learning environment. While the quantity of the male contributors were less than females, the same persons repeatedly made postings. The quality of postings was no longer for understanding each other (Stage 2 *Online Socialisation)*, but to exchange information or ideas (Stage 3 *Information Exchange*) (Salmon, 2002, 2011). Examples of male comments:

The most important thing with ICT is how teaching and learning process conducted by teacher can engage students to learn, and with ICT teachers can explore more new knowledge and apply it in the classroom. The bottom line, teachers must be creative in teaching and learning so students' interest in learning can improve and so can their learning outcomes. *Eko, a male teacher* [Facebook: 30 April 2010]

Just a quick comment to OLC4TPD, not all learning materials at school must be taught online, because some of subjects must be 'peer-learnt' especially those that need concept explanation and examples from the teachers. *Eko, a male teacher* [Facebook: 30 April 2010]

The emergence of gender as an issue in this study was an interesting phenomenon. Participation of female educators was initially low due to the fact that there were less female teachers and teacher educators having ICT access, less exposure to ICT and lower level of ICT skills. The study discovered that initially female educators seemed to be behind of their male colleagues when it came to initiating and managing ICT-based TPD activities. However, the study also showed that there had been a gradual change and trend development that female educators participated more in the OLC4TPD, particularly when the interaction was conducted using social media, such as Facebook. However, further investigation needs to be done to validate these findings.

6.5 Leadership

Leadership influences the growth and sustainability of an online learning community like OLC4TPD. This facet is not only limited to leadership within an organisation, but also in a community as well as *de facto* leadership. The de facto leadership means that a particular person might not have any leadership position, but was considered as a leader because of skills, knowledge, and charisma. The three participants described in Chapter 5 all had different leadership roles in their organisations. Adi, a teacher educator, had leadership power in TPD practices. Bambang, a school superintendent, had a leadership role within the schools in his district. Eko, a teacher educator, had a leadership role at his school as the proxy for his school to the outside world (because of his education background and his ICT skills). Their leadership roles were significant to OLC4TPD as they gave both a direction and character.

Eko was considered a *leader* within his community, due to his moderate ICT skills and access. However, Eko was unable to mobilise his colleagues to join in OLC4TPD in the same way as Adi and Bambang. Without any formal leadership position in the school organisation, he could not be a decision maker. He could only encourage his colleagues through word of mouth. Some challenges that he faced that he could not 'change always the world' and make his dream come true. As he always wanted *to* "carry out a meaningful teaching and learning process for his students, so they could develop themselves", Eko had to accept his limitations and think creatively to realise his dream. Despite all the limitations, with his strong motivation and determination, Eko was finally able to join the online meeting regularly; he became a Hotseat Speaker; he was able to motivate his friends to join OLC4TPD, to share information 'off-line" to his colleagues and to develop his professional career. As he realised his dream for ongoing professional development, he was able to become influential.

Adi was an influential *leader* in his community, because he trained teachers from all over Indonesia through his NGO. Using his ICT access, tools and skills, he influenced other educators in OLC4TPD and other educators who he met in his workplace, by sharing, writing, responding and talking. While he had no authority to make changes in national education and/or school policies, his leadership was apparent among OLC4TPD members as educators respected his ideas and initiatives in the field of education. His contributions to the community spoke for themselves.

As a school superintendent, Bambang had the most leadership authority of the three. He had almost absolute power over education in his district and he was able to affect change in his community. He used both face-to-face and online approaches to promote OLC4TPD in each school he visited. He also initiated a change in education policy. Chapter 5 described how Bambang changed OLC4TPD by offering his teachers a *reward* if they participated regularly in the online meetings. This reward enabled teachers to participate in online ongoing TPD and to get some *points* toward their teaching portfolios, which will be used as evidence to this process (which were used as evidence of this process).

The following examples show the significance of leadership in building and sustaining an online learning community such as OLC4TPD.

a. Example: Tri

Tri was a School Principal from one of the schools that Bambang supervised. She had some basic ICT skills (Internet, email, mailing list and social media). As the leader of her school, Tri received full support from Bambang, the school superintendent. In her role, she was expected to facilitate ongoing professional development for her teaching staff.

In this study, Tri motivated her staff to participate in OLC4TPD. With her moderate ICT skills, she confidently encouraged her staff to take part in OLC4TPD and join in the online meetings. She worked together with Bambang to create a new policy for her staff, so that they could record their participation in OLC4TPD online meetings as a part of their TPD portfolios. While she initiated and encouraged her staff to join the online meeting, she always asked her male IT Staff to provide the IT support. She engaged with the eModerator to create different kinds of TPD activities that were suitable for her staff. She organised post meetings after each online seminar with her staff to reflect on what they had just learnt and how they could implement the lessons in their school teaching and learning process. She provided financial incentives for each teacher joining OLC4TPD online meetings.

Despite her moderate skills, Tri was the only female educator (and leader), who was able to excel in her authority and professional capabilities, to engage her staff and build her own professional learning community at her school.

b. Example: Ajie

Ajie was the Dean of a teacher-training institute in Indonesia. While his ICT skills were limited to browsing the Internet and sending email, he had a great curiosity in exploring the use of ICT to support TPD. Thus, he was strongly motivated to participate in this OLC4TPD study. Through his authority; he was able to mobilise his staff to participate in the study. He sent email to invite his staff to join in the brainstorming session and discuss the development of OLC4TPD. When the community was launched in October 2009, he organised several teacher educators to attend the fortnightly online meetings.

Despite his authority, Ajie could not keep up with fast development of ICT and new online learning models, because of his limited ICT skills. In addition, he had

a lot of commitments, so he did not have the time to develop his own ICT competence. He had to depend on other people, such as IT staff, who were sometimes unreliable due to their other work commitments, to participate in the online meetings. Therefore, his and his staff's participation in OLC4TPD did not last long. The staff (teacher educators) was motivated to join OLC4TPD, because of Ajie's encouragement. They themselves did not have any strong commitment due to their overwhelming work commitments to educate teachers in Indonesia. Furthermore, his staff did not feel the need to have ongoing professional development. As Ajie was unable to maintain his OLC4TPD commitment, his staff's involvement also waned.

The role of a leader in an OLC is significant, especially in a *high power distance* and *strong collectivist* country like Indonesia. A leader, such as Ajie, should be able to initiate paradigm change, such as his potential to encourage his staff to keep learning, despite their socio-cultural hierarchy, however, in this case Ajie's poor ICT skills and other commitments stopped this happening.

One and half-years after his initial participation, Ajie surprised the eModerator by spontaneously calling her on Skype. He said that he was in the middle of a conference with school leaders from all over Indonesia and he wanted to show them how educators could engage in an online conference using Skype within OLC4TPD to improve their professional development. He, who was originally unable to use Skype independently, had finally mastered it and inspired a lot of educational leaders from all over Indonesia. He emphasised the importance of collaborative professional development with other educators from many places using online media. He told the audience that he started to use Skype to conduct online classes with his student teachers. He reported that the online synchronous method was a very effective and efficient way to conduct learning, especially for people such as himself who have a busy schedule.

All of the above examples illustrate that leadership without ICT skills and access in an online learning community like OLC4TPD was not effective. Leaders must have at least basic ICT skills and adequate access to be able to motivate and mobilise their staff to engage in online TPD activities.

6.6   Synchronous Interaction

One of the most successful online learning environments used by OLC4TPD members was Skype. The reason for this success was that Skype enabled the members to interact with each other in real time. Most of the educators who participated in the study were not previously familiar with the online learning model (see Section 6.4 Skill). Prior to their participation in OLC4TPD, they mainly used a face-to-face mode to facilitate the teaching and learning process. Like Eko, many of the participants chose to have an attitude of *wait and see,* as they participated in OLC4TPD. They wanted to see how things worked, what they would experience and what commitments would be required.

The interaction using Skype appealed to most of OLC4TPD members. The synchronous interaction on Skype *mimicked* face-to-face real-time interaction. The most common topic discussed on Facebook was online meeting. Every member wanted to experience synchronous online meetings, where they could meet and discuss with other educators from all over Indonesia and overseas. However, out of the 1,053 members, there were only around 50 members who could actually engage in the Skype synchronous online meetings due to challenges, such as ICT literacy and ICT access limitations.

Several schools and organisations organised communal online meetings instead of multiple individual meetings for effectiveness and efficiency. These communal meetings reduced the problems of limited Internet bandwidth and poor connection, because the school/organisation needed to use only one laptop/PC connected to the Internet with a loudspeaker and LCD projector to facilitate the participation of many educators in a class. With this communal arrangement, the participants could still engage in the discussion and conversation as in a normal one-to-one synchronous conversation using Skype. The spirit of collaboration was also nurtured by this arrangement, because educators had to negotiate among themselves, such as what they had to write on a single chat window, which should go first to ask a question or make a comment.

The results showed that the numbers of people registered on Skype meeting was the lowest compared to the other two online learning environments, however, the

participation of the members on Skype was the highest among the three online learning environments (see Table 29). The number of registered participants, however, did not reflect the real numbers participating in the online meeting as each user ID could represent from 1-30 people, who actually attended each session. Further discussion about the social learning interaction on the Skype environment can be found in Chapter 7.

Table 29
Membership and Participation at OLC4TPD

	Period of Study	Online learning environments and Activities	Total Member		Average Monthly Participants	Total Postings
			M	F		
1	Oct 2009 – May 2010	Web Portal Discussion Forum (Asynchronous online discussion)	68	36	13.4%	98
2	Nov 2009 – Dec 2010	Skype (Synchronous online meeting)	34	11	64.4%	
3	Nov 2009 – Dec 2010	Facebook (Asynchronous online discussion)	1053		7.7%	395

The first challenge for facilitating synchronous interaction for the members was access, which was discussed briefly in Section 6.2. Skype was among many online conference tools evaluated and it was found to be the best and most reliable. It is easy to download, install and use. It also did not require a lot of bandwidth as other conference tools. There were still, however, access problems, which could not be solved easily. Many people could not join Skype, because their Internet bandwidth was not sufficient to support it. This happened particularly in rural and remote areas as well as small cities. The teacher educators, who mainly lived and worked in the city, usually had good Internet connections both at home and workplace. In addition, private schools, universities and other organisations in the city in general were equipped with more reliable Internet connections. Mobile phones, equipped with mobile Internet data also increased in popularity. Despite its lack of reliability in rural and remote areas, the mobile technology has opened up a new window to facilitate synchronous interaction, particularly using the synchronous Facebook chat room.

The second problem was related to ICT literacy (see Section 6.4). Most of the community members, except the ICT-savvy people, had problems as they started to use Skype. While a series of induction sessions were conducted during Stage 1

(*Access and Motivation*) and individual assistance was given, the eModerator found that it was still challenging to help OLC4TPD members, especially with those located in disparate remote locations and where they sometimes had never even heard about, let alone used, the technology before. Examples of their comments included the following:

> How can I add your user name to my skype (or I couldn't see it here) ... Insya Allah I will join the online meeting. Thanx. *Aminah, a female teacher*

> I tried to join to be online seminar participant. What are the requirements? *Lia, a female teacher*

> My Internet connection is still on/off. Would U share the result? *Ali, a male teacher*

> I am interested with this.... n how join it? *Yulia, a female teacher*

> I have not got it. Please help … *Delia, a female teacher*

The third set of challenges was related to age and willingness to learn new things. A large number of OLC4TPD members, largely due to their age, seemed to encounter more challenges in adopting the new technology, in particular Skype and Facebook. As an example, Ajie, who was in his fifties, found that it was challenging to learn Skype at the beginning of the study. However, as time passed, he managed to learn how to use Skype and finally could master it after a year since he first participated in OLC4TPD. As he became more competent, Skype became more meaningful for him than before. The research found that there were many similar cases.

Despite the challenges, synchronous online interaction attracted a lot of interest from the community members and made a lot of difference in many educators' professional lives. Feedback included the following:

> The discussion was very interesting. Hopefully, this moment can always done to make us as a life long learner ;) *Adi, a male teacher educator* [Interview, July 2010]

> It's great I can join this and sure I will get informed much more about teaching, the essential need of teachers. Thank you all and special thank to *(eModerator's name)*. *Bambang, a male school leader* [Interview, July 2010]

> It was a genuine honor to engage in discussions with teachers from another country... *Don, an Australian teacher educator* [Interview, September 2010]

Synchronous interaction was relatively new way of teaching and learning for most the participants in this study, yet the study showed that synchronous interaction was one of the most successful methods in connecting OLC4TPD members online. The opportunities to meet at the real-time, interact in reflective discussions, get instant feedback from others who were physically exist at different geographical locations have opened up a lot of new perspectives about ongoing professional learning. This social learning interaction seemed to have addressed a lot of challenges in online communication, and the biggest obstacle experienced in the study was mainly related to the availability of ICT access, sufficient infrastructure, and ICT literacy.

6.7 Summary

This chapter has described the ICT and socio-cultural facets of ICT influencing the operation of OLC4TPD. Implementation of OLC for TPD in an Indonesian context does not only include technical aspects (access and literacy), but also other facets such as ICT competencies, gender, leadership and synchronous interaction.

Having ICT access is the primary ingredient to build and engage in an OLC. Access to ICT influences the level of exposure to the technology an individual may have had. The level of exposure to the technology determines one's ICT literacy. Without sufficient ICT access and ICT literacy, the process of online teaching and learning could not take place. Thus, Stage 1 *Access and Motivation* was a significant initial block that had to be overcome before other stages of online teaching and learning could happen.

While it took a day for some members to get into OLC4TPD environment and engage with other educators, it took several months and even a year or more for other members to know about the system and be part of the online learning community. This significant length of time and steep curve of learning could hinder somebody participating actively in OLC4TPD. However, it was found that strong internal motivation, confidence, enthusiasm and self-efficacy for learning and external support

from their workplace could help somebody to survive during the potentially demanding and often challenging adoption process.

Three basic ICT skill sets that were required to engage in the online learning were Internet connection and navigation, email and social media competencies. These skills enabled the community members to learn about the online learning environment and other element tools. The research showed that although most of the teachers and teacher educators had never used online learning environments before, these three basic ICT competencies enabled them to explore and adopt the new online skills. Those with these skills tended to survive and be able to engage with other members unless there were any other inhibitors, such as work commitments and socio-cultural issues.

A gender expectation was an interesting issue throughout the study, as it was one of the facets that often inhibited active participation of female members. Many female teachers were still considered *secondary* in term of IT-related matters at organisation level. Thus, many female educators often did not have a voice or opportunity when it came to initiating or coordinating IT-related matters. Those female figures with authority usually had more of a voice and confidence than others. On the other hand, there was a difference between male and female members in terms of using of technology on a personal level. The rise of mobile technology and social media has led ICT to become a more significant part of both males and females' lifestyles. It has allowed the engagement of female members as equal partners in the online teaching and learning process.

Leadership was found to be the next facet that influenced the success of OLC4TPD. In a high power distance and strong collectivist society like Indonesia, a leader is like the *motor that drives a vehicle*. The leaders (dean, school principal, school leader, teacher educator, government officer) influenced many of the major decisions, breakthroughs and changes in the TPD system and within OLC4TPD practice. Yet, strong leadership should be accompanied by adequate ICT skills, knowledge and a strong motivation to learn new things in order to sustain an online learning community like OLC4TPD.

One of the main facets that affected the success of the community-based online teaching and learning in Indonesia was the possibility to engage with other

educators from various places in Indonesia and other countries through synchronous online conference technologies, such as Skype.

Chapter 7 discusses to what extent OLC4TPD facilitated social learning interaction among OLC4TPD members and how it impacted on their professional development journeys.

CHAPTER 7

FINDINGS AND DISCUSSIONS:

SOCIAL LEARNING IN OLC4TPD

Overview

Having discussed the ICT and socio-cultural facets influencing OLC4TPD in Chapter 6, this chapter presents the social learning interactions that occurred among OLC4TPD community members during the period of October 2009 to December 2010. Starting by exploring the members' online interaction in the three online environments (the Web Portal Discussion Forum, Skype and Facebook), the researcher continued to analyse the social learning interactions using Scardamalia's Twelve Socio-Cognitive Determinants, the pattern of social learning interactions and its impacts on teacher professional development.

7.1   Participation in Online Learning Community

OLC4TPD members chose an online environment that matched to their own circumstances in order to participate in OLC4TPD social learning activities (see Table 29 in Section 6.6). Their choice was influenced by several factors, such as ICT access, ICT competency, length of experience in using ICT, gender, leadership in the organisation as well as the community and experience in using online systems (see Chapter 6). Their choice of the online environment influenced the membership and level of participation in these environments (Web Portal, Skype and Facebook).

Based on membership numbers, Facebook appeared to be the most popular online environment used in the community. There were more than 1,000 members registered on Facebook compared to the membership numbers on the Web Portal (less than 150) and on the Skype (less than 50). On the other hand, based on the level of participation, Skype seemed to attract more members to participate actively than the other two ICT online learning environments (see Table 29 in Section 6.6).

The Web Portal Discussion Forum, as the first online learning environment introduced, attracted more teacher educators than teachers during the initial stage of the study. Based on the preliminary ICT survey results, the teacher educators had better ICT access and skills (see Table 14 in Chapter 4, Figures 11 and 12 in Chapter 6) that enabled them to make use of the discussion forum to support their online professional development. It was found that the Web Portal Discussion Forum seemed to support teacher educators' needs for networking, exchanging information and dissemination of research results, which they had envisioned during the brainstorming workshops and interviews (Phase 1 *Problem Analysis*)

The Web Portal membership, however, did not progress as expected. Most of the members consisted only of teacher educators and a few teachers (who participated during Phase 1) and their colleagues. The teacher educators, in particular, felt the need of having a wider audience for the community, to foster mutual communication and collaboration between teacher educators and teachers. These teacher educators often mentioned the importance of face-to-face interaction as additional activities for OLC4TPD, to encourage more teachers to join the community (this is due to conventional paradigm and existing face-to-face practice of TPD in Indonesia). As a

result, the second intervention using synchronous online learning activities through Skype was implemented, because it could facilitate real-time interaction (voice only). One of the comments from a teacher educator, on the Web Portal Discussion Forum about the synchronous Skype conference was the following:

> Hope our conference this time can be attended by many people, so there will be more experience shared and enrich our understanding in the field of education, especially international education. *Frida, a female teacher educator* [DB: 02 December 2009].

The majority of the synchronous online meeting participants were first-timers in using Skype when they initially participated. While most of them faced ICT-related issues (access and literacy), Skype provided possibilities for OLC4TPD members to interact synchronously online, despite their geographical differences through online media.

Exchanging knowledge, sharing experiences, looking for solutions and helping each other to improve the quality of teaching and learning in their own educational institutions occurred through this forum. Most teachers, especially those in rural and remote areas, had rarely engaged in mutual collaboration such as this. For some teachers, they had to wait at least a month before they could meet with other teacher colleagues from different schools and their supervisors (teacher educators and government officers) in a face-to-face TPD forum.

The synchronous online meeting using Skype was an eye opening collaborative activity for the teachers and teacher educators. The two-hour fortnightly online meeting seemed to help a lot of educators to solve their professional problems (see examples on Section 7.5.1 and 7.5.9). While it might take one day or a couple of months for OLC4TPD members to reply to email, it took only a few seconds to get feedback from other colleagues using Skype. Thus, the member participation on the Skype online meeting was higher than the Web Portal Discussion Forum or Facebook.

Facebook, as the third ICT online learning environment introduced, was found to attract new members the most (see Tables 29 and 30). One of the reasons was its popularity as the number one social networking site among Indonesians, including teachers and teacher educators. These educators used Facebook on a daily basis to communicate with their friends and families. Within two months, five-hundred and twenty new educators (mostly teachers) had joined OLC4TPD Facebook (Sari,

2010a). There were many reasons why there was a significant improvement in the membership, from under 30 to over 500 members during the first two months after Facebook was launched (November 2009). The rarity of similar Facebook communities used for TPD in Indonesia, the power of Facebook as a social media and word of mouth among OLC4TPD members who had joined OLC4TPD through this media. Their personal interests rather than external factors motivated most of the members, who joined OLC4TPD through Facebook.

In contrast to the success in recruiting a large numbers of OLC4TPD members using Facebook, this online learning environment was unable to engage the same large numbers of people in actual participation. The percentage of individual participation against the total number of Facebook members was the lowest compared to the participation rates on Skype and the Web Portal Discussion Forum respectively (see Table 29 in Section 6.6). One possible reason is related to the nature of Facebook use during late 2009 to early 2010, which was mainly as a social networking tool, rather than a means for TPD. The awareness and competence of utilizing this online learning environment for professional purposes was therefore low.

Facebook participation gradually improved over time with intervention from the eModerator. OLC4TPD members on Facebook were initially passive members (lurkers). While they constantly used Facebook, they only acted as passive receivers of information. Their motivation in engaging in social learning arose as the eModerator shared new information that attracted their interest (e.g., authentic problems, local educational issues and international education systems). In addition, the eModerator also introduced and organised synchronous online meeting activities on ongoing basis to facilitate a novel way of social learning interaction.

7.2   Learning Interaction

As members joined OLC4TPD, they were expected to engage in social learning interactions. Figures 15 and 16 illustrate the dynamics of social learning interactions that occurred on the Web Portal Discussion Forum (October 2009 - May 2010) and the Facebook (November 2009 - December 2010). The interaction on the two asynchronous online learning environments are differentiated as follows:

Moderator Initiative (MoIni), *Moderator Reply* (MoReply), *Member Initiative* (MeIni), *Member Reply* (MeReply) and *Like* (Facebook only). Each of the categories were counted monthly during the stated period.

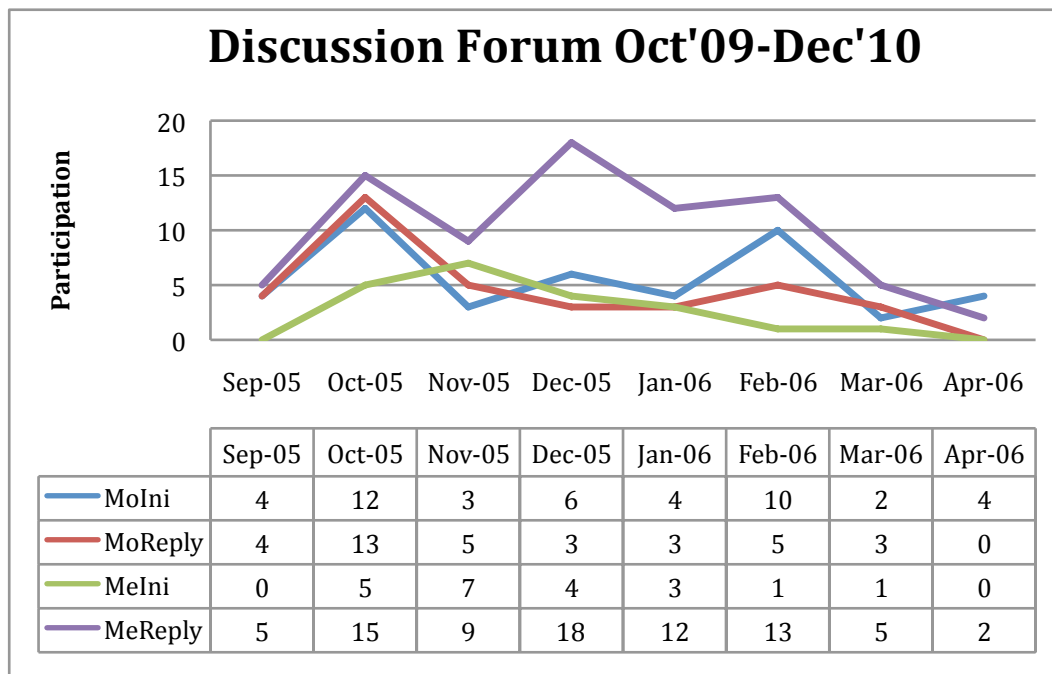|	Sep-05	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06
—— MoIni	4	12	3	6	4	10	2	4
—— MoReply	4	13	5	3	3	5	3	0
—— MeIni	0	5	7	4	3	1	1	0
—— MeReply	5	15	9	18	12	13	5	2

Figure 15. Participation on Web Portal Discussion Forum (Oct 2009-May 2010)

On the Web Portal Discussion Forum, the eModerator replied with an average of 4.5 postings/month during October 2009 to May 2010 (see Figure 15). Members posted an average of 10 replies/month (MeReply). Member initiated postings (MeIni) were an average of 2.6 postings/month, while the eModerator (MoIni) had an average 6 postings/month. On the Facebook, the eModerator replied with an average of 6.4 postings/month during November 2009 to December 2010 (see Figure 16). Members posted an average of 15 replies/month (MeReply). Member initiated postings (MeIni) were an average of 2.6 postings/month, while the eModerator (MoIni) had an average 7 postings/month. The members pressed the *Like* button (Like is a feature of Facebook that allows members to give an affirmative response to a particular posts/pages) an average of 15 times/month.

The findings showed that while there was a large difference in total membership (Facebook >1,000; Web Portal <150), average monthly participation on

both Web Portal Discussion Forum and Facebook were similar. Members on both Web Portal and Facebook, in general, did not initiate discussions (MeIni), but were more active in responding to postings made by the eModerator and the few active members (MeReply). EModerator's replies (MoReply) on the discussion forum and Facebook were almost a half of the replies made by the total replies
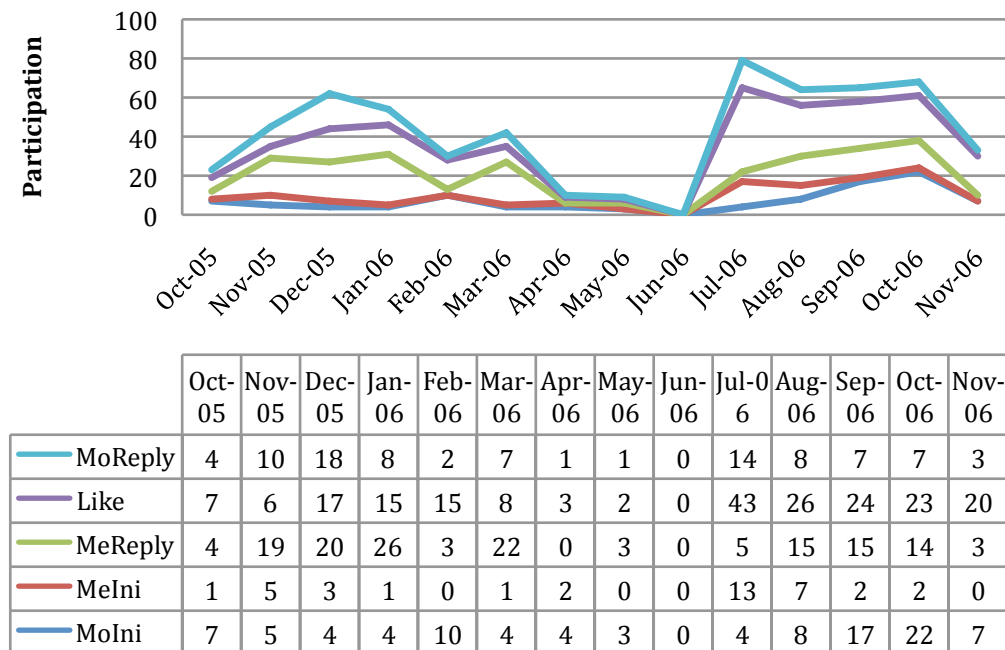
Facebook Nov'09-Dec'10

	Oct-05	Nov-05	Dec-05	Jan-06	Feb-06	Mar-06	Apr-06	May-06	Jun-06	Jul-06	Aug-06	Sep-06	Oct-06	Nov-06
MoReply	4	10	18	8	2	7	1	1	0	14	8	7	7	3
Like	7	6	17	15	15	8	3	2	0	43	26	24	23	20
MeReply	4	19	20	26	3	22	0	3	0	5	15	15	14	3
MeIni	1	5	3	1	0	1	2	0	0	13	7	2	2	0
MoIni	7	5	4	4	10	4	4	3	0	4	8	17	22	7

Figure 16. Participation on the Facebook (Nov 2009-Dec 2010)

During the period of April and June 2010 (see Figures 15 and 16), the interactions in both online environments were reduced. On the Web Portal Discussion Forum, in April 2010, there was only one member initiated discussion (MeIni) and five members replying (MeReply). There were only two postings initiated by the eModerator (MoIni) and three replies (MoReply). In May 2010, the eModerator initiated four postings and received two replies from members (MeReply). No members initiated discussions (MeIni) from this month onward, and no members replied to any message from June 2010.

On Facebook, during the same period of time (April-May 2010), member participation also dropped. From 22 member replies (MeReply) in April 2010, there

were none in May 2010. Eight (8) members liked the postings in April 2010; while only 3 members pressed the *Like* button in May 2010. The eModerator's initiatives remained constant at 4 postings (MoIni), yet the replies dropped from 7 to 1 (MoReply). This trend continued until July 2010, when there were no postings from eModerator or members.

This drop in social learning interaction on the Web Portal Discussion Forum and Facebook during the period April to July 2010 can be linked to two main factors related to: minimum intervention made by the eModerator; and privacy and ease of access.

The first factor was related to minimum intervention made by the eModerator. The eModerator intended to explore the online teaching and learning stages of OLC4TPD (Salmon, 2002; 2011) and its sustainability with minimum intervention. While there was evidence that the knowledge construction process had occurred on the Web Portal Discussion Forum, the members were not ready to independently engage in social learning process (Stage 5 *Development*). The same was evident on Facebook, when the eModerator reduced participation, the participation of the members also dropped.

The second factor was related to privacy and ease of access. The researcher experimented with the privacy setting of the Web Portal Discussion Forum during the months of April-May 2010. She was concerned because the knowledge and awareness of the community members about intellectual property and plagiarism were still low. There was one member, who copied a great deal of the content from both the Web Portal Discussion Forum and Skype onto other websites that were not affiliated with OLC4TPD, without permission.

The decision to change the Web Portal's privacy system turned out not to be the best strategy, because access to the Web Portal then required several access layers before seeing the first page. OLC4TPD members became discouraged in visiting the site and participation dropped. When the privacy setting was again returned to the open setting, members' interest did not revive. The members were new to the online learning environment, thus it took a time for them to get used to the online system and they were not tolerant of changes.

On Facebook, the eModerator conducted a similar intervention of withdrawing from the online engagement and similar results were obtained. When the eModerator did not engage herself in the Facebook (July 2010), there was nothing going on at all in this environment. In August 2010, after low participation rates from May to July 2010, there was an increase in social learning interaction (see Table 16). During this month, there was the highest number of member-initiated interactions (MeIni, $n=13$), the highest number of Likes (43), a low number of member replies (MeReply, $n=5$), a moderate number of moderator replies (MoReply, $n=14$) and a low number of moderator-initiated postings (MoIni, $n=4$).

The role of the eModerator to guide and support the adoption and adaptation process was crucial. Giving freedom or boundaries needs to be strategic, socio-cultural factors, such as the high Power Distance index (PDI) and the strong collectivism index (IDV) in Indonesia, were two of the factors that influenced the situation. Thus the eModerator was considered a leader, who should constantly guide and facilitate the online learning process. Minimum or no facilitation from the eModerator was to the participants, like *a class without a teacher*. Strong leadership in form of intensive facilitation and guidance from both the eModerator and other authority figures in the community were needed in order to make this new community grow. These leaders are the people who nurtured the culture of knowledge exchange and knowledge building in the community. The eModerator helped the members to get access to the OLC environment and developed the members' motivation to adopt the new online professional development model (Stage 1 *Online Access and Motivation*), to facilitate the process of online Socialisation among educators who never interacted before in a face-to-face environment (Stage 2 *Online Socialisation*), to promote the process of information exchange (Stage 3 *Information Exchange*) and knowledge construction (Stage 4 *Knowledge Construction*). As long as online social learning interaction had not become rooted inside OLC4TPD members, they could and would, quickly fall back to their old paradigms and behaviours.

During the month of July 2010, instead of being active online, the eModerator became active in a physical CoP. She went to Indonesia to engage with the members and others in several TPD events. She convinced many educators about the importance of OLC4TPD. Educators whom she met started to become active on Facebook and involved in the social learning process.

7.3   Social Knowledge Construction

This section continues the discussion on social learning by analysing the discourses produced by the community members during their social learning interaction on the Web Portal Discussion Forum and Facebook. The depth and quality of the discussions from the Web Portal Discussion Forum that impacted the development of OLC4TPD and the professional learning journeys of its members are discussed. There were in total 181 discourses on the Web Portal Discussion Forum (October 2009 – May 2010) and 584 discourses on the Facebook (November 2009 – December 2010).

Table 30
Average Postings based on Gender and Profession on the Discussion Forum

	Teachers		Teacher Educators		School Leader	
	M	F	M	F	M	F
Numbers of Members' Posting (*n=98*)	38	6	33	9	12	0
Numbers of Contributors (*n=18*)	7	3	5	2	1	0
Average Postings	**5.4**	**2**	**6.6**	**4.5**	**12**	**0**

Table 30 shows that there were 5 female and 13 male active contributors on the Web Portal Discussion Forum. From the total of 181 postings made on the Web Portal's Discussion Forum after the launch of OLC4TPD in October 2009, 54 percent were the members' postings (98 postings) and 46 percent were the moderator's postings (83 postings). The moderator mainly posted information and regular announcements, threw *sparks* to ignite discussions, supported community members who encountered ICT and administration problems (Sari, Lim, & Pagram, 2010). Eighty-five percent of the total members' postings (*n=98*) were made by male participants in particular these were teachers and teacher educators. There were no female school leaders who posted in the forum. Bambang (see Chapter 5) was the only male school leader who contributed to the forum. The number of teacher educators and teachers, who participated in the Web Portal Discussion Forum, were almost equal. Adi (see Chapter 5) made the most male teacher educator contributions

in the forum (22 out of 33 postings). Among other community members, female teachers made the lowest contribution.

The social learning participation of members, regardless of its frequency, in a new online community of practice (CoP), such as OLC4TPD, indicates the dynamics of the community in the process of learning. The active participation of each community member determines the sustainability of the community. Social learning interaction in an OLC is like the soul of the community itself. Without it, no community would survive. This research borrowed the Cognitive Determinants of Knowledge Building (Scardamalia, 2002; Scardamalia & Bereiter, 2000) model, in order to examine how the community members carried out their collective responsibility in a knowledge-based enterprise like OLC4TPD. Referring to Scardamalia's Collective Cognitive Responsibility, this section will also examine how far OLC4TPD had facilitated the effort to distribute the responsibility of the social learning across the different groups of community members. Using lenses borrowed from Scardamalia's Collective Cognitive Responsibility, each posting was classified and frequencies calculated based on the Twelve Socio-Cognitive and Technological Determinants of Knowledge Building (see Table 31). The description of each determinant can be found in Table 2, Chapter 2.

Table 31
Scardamalia's Twelve Socio-Cognitive Determinants of Knowledge Building

KB1: Real Ideas, Authentic Problems	KB7: Democratising Knowledge
KB2: Improvable Ideas	KB8: Symmetric Knowledge Advancement
KB3: Idea Diversity	KB9: Pervasive Knowledge Building
KB4: Rise Above	KB10: Constructive Uses of Authoritative Sources
KB5: Epistemic Agency	KB11: Knowledge building discourse
KB6: Community Knowledge, Collective Responsibility	KB12: Embedded and Transformative Assessment

Most of the postings on the Web Portal Discussion Forum (*n=*181) were categorised as KB1 (37 percent) and second highest was KB3 (33 percent) (see Figure 17). On the other hand, the least categories with no postings were KB9 and KB12. KB2 (17 percent) and KB5 (16 percent) made the third and fourth places consecutively from the top, while KB10 (3 percent) and KB11 (2 percent) made the

third and fourth places consecutively from the bottom (Sari, 2012; Sari, Lim and Pagram, 2010).
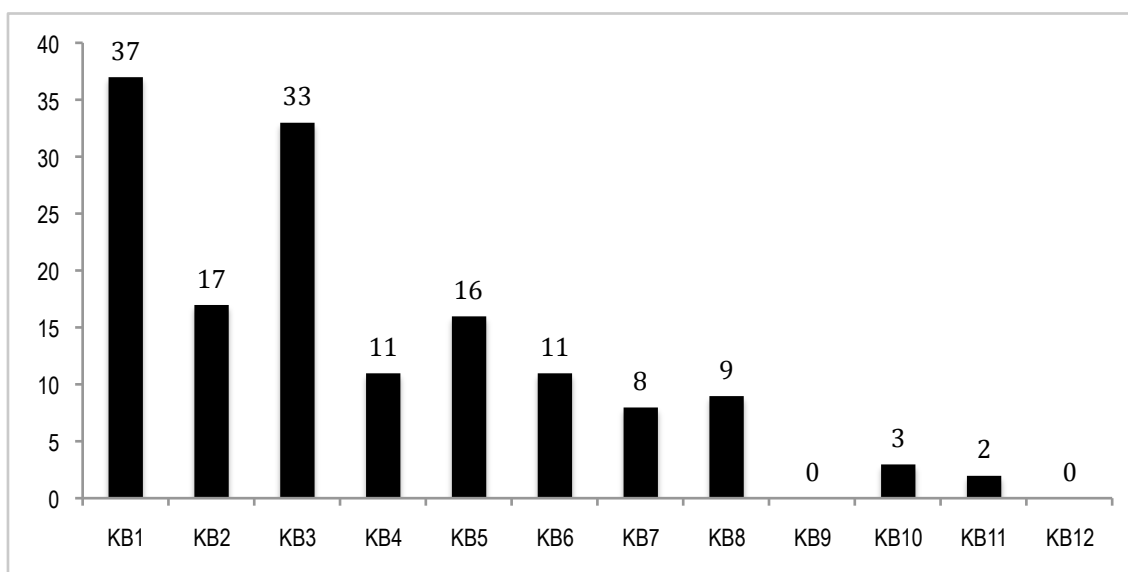

Figure 17. Type of discourses on the Web Portal Discussion Forum

KB1 (Real Ideas, Authentic Problems) was the most common cognitive determinant (37 percent) found in the Web Portal Discussion Forum discourse. This determinant means that knowledge problems arise from the effort to understand the world. The ideas produced from the authentic problems that were experienced by the learners are usually different from textbook problems and puzzles (Scardamalia, 2002). It appears that was a similar tendency on Skype online meetings and Facebook discussions. Teachers dominated the contribution of this type of determinant. This was evident that teachers used OLC4TPD as means to share problems they faced from their work practice. The following two Examples (A and B) illustrate this practice.

a. Example A: Web Portal Discussion Forum (1)

A discussion between Farid, a secondary teacher and Toni, a senior secondary ICT teacher

> **Farid:** "I have been developing an educational game on my blog I need any suggestions how to design it so my students like to play it whenever they are"

> **Toni:** "I have seen your blog, quite interesting – a modest game to help the process of children learning at your school. I can see here there are elements

of learning and playing for children… Off course, this will be a "joyful learning" for them … Our suggestion is to add more educational games that can be played by kids from different places so they can solve one problem collaboratively online. Oh yeah, to motivate them to open the blog often and play your game, give them rewards, such as writing the name of those visit the blog often as the "Top Visitor". Thanks"

b. Example B: Facebook (1)

A discussion among Rida, Anton, Aliyah, Daud and Supri, who are all secondary teachers from state schools

Rida: "Dear colleagues, please give me your suggestions …. How can I teach civil education for year 6 with a topic on Politics and Government so that the children can easily remember that material? And how can the process of teaching and learning more engaging? The children usually are unmotivated because it is difficult to remember the word. If they remember, they will forget in a week. Thanks"

Anton: "Maybe you should invite the parliament member, mam or visit their headquarter."

Aliyah: "Politic and Civil education need to be applicable so students can implement in real world … learning method with a discussion would be better… year 6 primary students nowadays can think critically… give a theme that is suitable for their thinking capacity and let them discuss themselves to train them about democracy, Mam.. Maybe"

Daud: "For that kind of learning material, it would be good if you can use simulation methods. Besides memorizing, students can practice. The results would be much better. Please try, okay? Don't expect that only science can be experimented"

Supri: "For students to be legislative and executive member (not yet Judicative those are the noisy one. Choose topic: the president would raise the price of petrol. Then make a debate session"

The common cognitive determinant found in examples (A) from the Web Portal Discussion Forum and (B) from the Facebook, was real ideas and authentic problems (KB1). The first teacher in Example A, Farid, shared an idea on the Web Portal Discussion Forum which was to develop an educational game for his students, so they could engage more in the process of teaching and learning. He looked for suggestions on how to do that. On the Facebook (Example B), the teacher, Rida, shared her challenges in teaching Civil Education (Politics and Government) that was

found to be boring by the students in her class. She looked for ideas on how she could develop new ideas to engage her students. Both teachers shared authentic problems from their professional practice. Farid presented a possible method (KB2) to solve the problems using an educational game, but he needed affirmation and inspiration on how to do it. These types of postings (KB1) usually attracted other members to respond.

The postings about Authentic Ideas and Authentic Problems (KB1) were usually responded to with both Idea Diversity (KB3) and Improvable Ideas (KB2). Idea diversity (KB3) was the second most common cognitive determinant shown in the Web Portal Discussion Forum (33 percent). KB3 refers to the notion that diversity of ideas is important in developing the knowledge. This leads to the belief that idea diversity creates a rich environment for ideas to evolve into new and more refined forms (Scardamalia, 2002). In addition to KB3, community members tended to come up with "half-baked" ideas to solve the problems faced by other members (KB2). The members seemed to take the risk to voice their ideas to help other educators, leaving their hesitancies in making mistakes in front of other educators. This process was a journey for most of the educators, especially teacher educators.

A teacher or a teacher educator in Indonesia is considered a *Guru*, which is a person to follow. As such the ways they learn and behave need to be followed by others. Thus, it could be embarrassing for a *guru* to admit weaknesses and start a completely new form of learning. Yet, this study has demonstrated that an OLC model could potentially address this issue and gradually facilitate the shift of the learning paradigm. The following is an example of a statement made by a teacher educator, who had changed his perspective on learning.

> ... To be part of this activity is very useful. I was hesitant, ashamed and felt afraid to write or share my ideas in the beginning, because other people would notice it. But I realised those kind of things would not help me to develop myself. At least through this forum, I have developed my knowledge on the use of computer for learning and expand my knowledge by communicating with other people. By doing this, I am sure I can solve any problems that we often found in our practice as well as the solutions to improve our education quality. *Heri, teacher educator* [DB: 16 November 2009]

Heri was unsure for the first few months to sign up as a member on OLC4TPD web portal, even though he was very interested with the idea. He exchanged emails

with the eModerator informing his hesitancies to go online, because he did not use any online learning environments in his professional practice and for his professional development. His main concern was related to the facts that discussion forum was an open forum and the concern that the community members would not tolerate him as a teacher educator to make a mistake/wrong judgement. Yet, after following some of the discussions and learning that everyone was in the process of learning, he grew his interests and decided to give a try. His sharing above showed how he benefited through his social learning interaction with other community members.

The discourses on both the Web Portal Discussion Forum and Facebook usually ended after one or more members presented diverse and/or improvable ideas. The contributors usually did not pursue any ideas presented more critically. Several common phrases used to end an online discourse were "That seems interesting/ useful", "Thank You" and "I will try". This is partly due to the fact that Indonesia has a strong collectivist culture, in which maintaining harmony by not questioning another party is important in a social relationship (Hofstede, 1994).

Linking the professional status of the members and their contributions, it appeared that most of the contributions made on the Web Portal Discussion Forum by the teacher educators were KB3 (Idea Diversity), while for the teachers were KB1 (Real Ideas, Authentic Problems) (see Table 32). The next most significant contributions made by the teacher educators were KB1 (Real Ideas, Authentic Problems) and then followed by KB5 (Epistemic Agency), while the lowest was KB 6 (Community Knowledge, Collective Responsibility). From the teachers' side, the second and third most common contributions made were KB2 (Improvable Ideas) and KB3 (Idea Diversity) consecutively, while lowest were KB8 (Symmetric Knowledge Advancement). The school leaders made their highest contribution as KB5 (Epistemic Agency) and then followed by KB10 (Constructive uses of authoritative sources).

Table 32
The most and least common determinants

Teachers		Teacher Educators		School Leader	
Highest	**Lowest**	**Highest**	**Lowest**	**Highest**	**Lowest**
Real Ideas, authentic problems	Symmetric Knowledge Advancement	Idea Diversity	Community Knowledge, Collective Responsibility	Epistemic Agency	Collective Responsibility Democratizing

Table 32 shows that the tendency of teachers in their discussion was to present real ideas and authentic problems and to look for solutions of their problems, because they could not find any practical information from the textbooks or other resources (KB1). On the other hand, the tendency of teacher educators was to expose their knowledge and come up with various ideas and/or solutions for the problems posed by the teachers (KB3). In the case of the school leader, the findings found that he tended to set forth his ideas, negotiate with other member's ideas, sustain knowledge development, and evaluate the practice (KB 5)

From the socio-cultural point of view, it was shown that there was a strong underlying hierarchical relationship between teachers and teacher educators in the online interaction. The strong collectivism and high power distance culture of Indonesia influenced the way teachers and teacher educators connected with each other. Teacher educators or senior teachers are respected figures in the society, who are expected to guide the junior and people with lower rank in the community. Examples C (Web Portal Discussion Forum 2) and D (Facebook 2) below clearly show how these socio-cultural factors influenced the members' social learning interaction

c. Example C: Web Portal Discussion Forum (2)

Adi posted a newspaper article on the Web Portal Wiki about the Indonesian government's vision that aimed to provide an education network for all schools in Indonesia (KB 2). Dona, a female teacher from a rural area in Sulawesi island responded to this article on the Discussion Forum.

Dona: "In reality the National Education Network program in remote areas is basically just a wonderful program with a zero implication. The great expectation to narrow the gap between the West and East or with the outside world is false and we are all still on status quo....oh boy!! At the end of the day, the National Education Network for us is just a dream"

Adi: "Oh, this is what I often worry about. Vision without action is a dream. From your explanation, I view the phenomenon of National Education Network as an illusion. The Internet connection seems to be ok in Indonesia (It seems that an objective investigation on this topic needs to be done to evaluate), however, how can we utilise this wonderful asset to improve the quality of education in Indonesia?"

d. Example D: Facebook (2)

Widi, a young male student teacher from a rural area in Western Java required urgent help on how to teach the concept of democracy for his year 11 students. Eko, a male teacher from a remote and rural school (see Chapter 5) and Darso, a male teacher educator from a teacher institute from Sumatra Island replied to these postings.

Widi: "I am a student teacher who is currently conducting teaching practicum at a school in district A. .... How can I present the teaching material about definition and political principles to the students on the last hour of the school? Is there any trick/learning methods that can be applied to make students keep focused and enthusiastic? Please reply asap. Thanks."

Eko: "How about using a role-play, so the students don't have to memorise the definition but practicing them so they can understand the definition."

Widi: "Thanks, Sir. I will try. "

Darso: "Are you a person whom your students and friends like? The key to make someone learn and listen is not about topic and/or how to teach it. You have to be close and expected by the students to share and learn. If this is fulfilled, although you are going to teach during the last hour of school, it will still be energetic ...Sorry I did not answer you directly, because teaching approach, methods and strategy are related to you – how you create learning environment and to understand and be understood by your students."

Widi: "As this is my first experience, I am not so sure whether the students will look at me as a favorite person. The students have not opened up to me as a "newcomer". Yet, I always try to break the ice with some jokes and ask them to involve in the learning activities. I never rebuke them. I always smile and say hello to them."

> **Darso:** "Initial attitude to be a good teacher! Get the first impression to ensure they got our invitation to learn something new in fun ways not dictate and force them to learn something."

Widi (junior teacher) and Dona (female teacher) from Examples C and D were both teachers who presented their real ideas and authentic problems (KB1), while Darso and Adi as teacher educators responded by giving various and improvable ideas (KB2 and KB3). While a teacher is considered to have high social status, teacher educators are considered to have a higher status as their knowledge providers and supervisors. Adi and Darsi, as teacher educators, had an unwritten social obligation to share their knowledge and ideas (KB2 and KB3) with the teachers and give guidance to younger and inexperienced teachers, such as Widi. The same thing also applied to Eko, as a senior teacher at his school and a senior member of OLC4TPD. He felt the same *obligation* to help Widi, the young teacher who faced problems at his workplace. As a junior teacher, Widi was expected to agree and follow any advice given by his senior colleagues. Example D clearly demonstrated how the junior teacher, Widi, deferred to the advice of Darso, the teacher educator and Eko, the senior teacher. While Widi did not have an obligation to follow all advice given, he was expected to show respect and gratitude to his seniors, which were illustrated by the replies given.

Example C presents a contrasting phenomenon. Instead of conforming to the government's plan of the national education network and supporting the ideas written by Adi (teacher educator), Dona, a female teacher bravely criticised the concept by presenting the reality of the implementation of national education network in rural and remote areas of Indonesia. While a female teacher is culturally expected not to express her disagreement publically, especially to an authority or senior figure, Dona *risked* her image and chose to be different. She used the Web Portal Discussion Forum online learning environment provided by OLC4TPD to express her thoughts and engage on an equal footing in academic discussion. Dona found that Adi (the male teacher educator) responded to her critique well and engaged in a mutual discussion with her.

The contextual factors, such as geographical, financial and socio-cultural, influence how the community members interacted in OLC4TPD. However, OLC4TPD has shown a lot of potential to surpass these contextual limitation and able

to facilitate its members in the process of knowledge exchange and building. Example C showed how two members with different genders and social status engaged in mutual knowledge exchange. In Example D, Eko showed that his socio-cultural status (as a teacher) and his geographical limitations (a remote and rural area) did not stop him from making an equal contribution as teacher educators and those educators working in capital cities. The possibility to interact online gave Eko a chance to demonstrate his expertise and knowledge as a senior teacher and member of the community to help others.

7.4   Social Interaction Patterns

Learning from dynamic and complex social learning interactions in an OLC, the researcher tried to envisage the patterns of interaction that occurred in OLC4TPD during the period from October 2009 to December 2010. The patterns were developed based on various sources, such as community transcripts, participant observations, and ongoing conversation, conducted throughout different phases of this study (see Figure 18).   What follows are 36 points describing some of the social learning interactions amongst the OLC4TPD community members and a summary explaining these patterns.
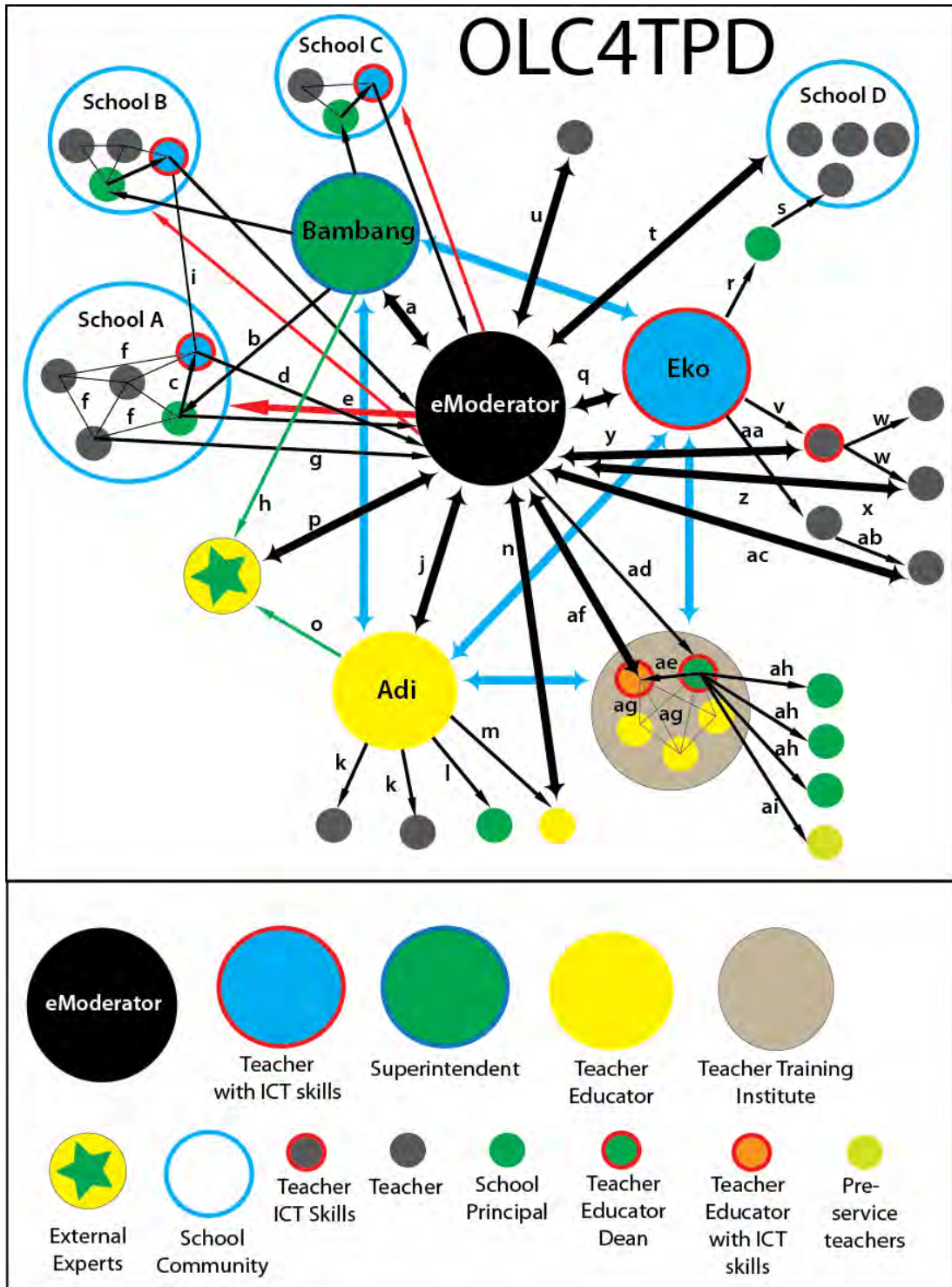
Figure 18. Social learning interaction at OLC4TPD

1. **Interaction A**

   The first interaction made by **Bambang**, an **ICT-savvy a teacher superintendent (school leader + government officer) (green and blue)** to join OLC4TPD through Facebook.

2. **Interaction B**

   As **Bambang** grew his sense of belonging to OLC4TPD and felt the benefits from his participation, he moved his participation beyond *legitimate peripheral* to invite people from his professional learning community, who were the **School Principals (green)** of the schools under his supervision to join OLC4TPD.

3. **Interaction C**

   The **School Principals** responded to the invitation from Bambang. They commanded their **ICT teachers** or **teachers with good ICT skills (blue and red)** to contact OLC4TPD and arrange how the teachers from their schools could participate in the online meetings and other activities.

4. **Interaction D**

   The ICT teachers or **teachers with good ICT skills (blue and red)** contacted OLC4TPD for the purposes mentioned on c.

5. **Interaction E**

   OLC4TPD moderator (red arrow) responded to their requests and gave necessary instructions and support.

6. **Interaction F**

   The **school communities (blue ring)** started their participation at OLC4TPD by joining the synchronous online meetings. They organised the participation as *communal activities.* While doing that the **teachers (grey)** from these schools started to collaborate among each other (building their own micro community). Some of the activities conducted include internal discussion after OLC4TPD online meeting to reflect on the talks given on during the online meetings and discuss how they could implement it in their teaching and learning process. The

School Principals (green) facilitated the activities. The **School Principals (green)** and **Bambang (green and blue)** organised with OLC4TPD how their teachers' participation at OLC4TPD could be awarded with a certificate of participation, so the teachers could use it for their portfolios in their teacher certification program.

7. **Interaction G**

   Several **teachers (grey)** from Bambang's schools built their confident in learning online. They started to interact with other OLC4TPD members, made their individual contributions to OLC4TPD.

8. **Interaction H**

   Bambang (green and blue), while supervising his schools' participation at OLC4TPD, was actively interacting with the **external experts (yellow with green star)**. External experts were teachers, teacher educators and education researchers who were invited by OLC4TPD to be Hotseat speakers on OLC4TPD online meetings. They came from various organisations in Indonesia as well as overseas. They were invited because they have certain knowledge and research interests that met to the needs of educators in Indonesia. Bambang's main purpose was to satisfy his curiosity and needs to widen his knowledge and to explore any possibilities for collaboration with the schools under his supervision.

9. **Interaction I**

   The ICT teachers (blue and red) from Bambang's school got connected to each other to let each other know how their school participated in OLC4TPD. They helped others when there were any ICT issues and facilitated other teachers who had difficulties to join OLC4TPD activities.

10. **Interaction J**

    Adi, the teacher educator (yellow), joined OLC4TPD and actively participated in the online activities by sharing ideas and answering other people's postings on the Web Portal Discussion Forum. He also shared learning artefacts and giving talks on OLC4TPD online meetings.

11. Interaction K

Adi (yellow) shared his OLC4TPD experience with **teachers (grey)** in rural and remote area's schools, where he trained regularly. The teachers were excited and got motivated to join, however, many of them could not yet join OLC4TPD, because of the ICT-related issues, such as access and literacy.

12. Interaction L

Adi (yellow) shared his OLC4TPD experience with **School Principals (green)** in rural and remote area's schools. The School Principals were excited and got motivated to join, however, many of them could not yet join OLC4TPD, because of the ICT-related issues, such as access and literacy.

13. Interaction M

Adi (yellow) shared his experience at OLC4TPD with his **colleagues** at his workplace. All of them were **teacher educators (yellow)**.

14. Interaction N

Eko's colleagues, the **teacher educators (yellow**) joined OLC4TPD.

15. Interaction O

Adi (yellow) actively interacted with the **External Experts (yellow with green star)** as he wanted to update and expand his professional knowledge and skills.

16. Interaction P

The interaction made between the **External Experts (yellow with green star)** and **OLC4TPD eModerator** (ex: knowledge exchange, administration matters).

17. Interaction Q

Eko, the **teacher with ICT skills (blue and red)**, joined OLC4TPD and actively participated in the activities after several months of dormancy. He tried to answer questions posed by other members on Facebook. He shared learning materials and gave a talk at OLC4TPD online meeting.

18. Interaction R

Eko shared his OLC4TPD experience with a **School Principal (green)** from school D, the neighbouring rural and remote secondary school.

19. Interaction S

The **School Principal (green)** was excited to hear about the new possibility for ongoing professional development. He shared the news to his **staff (grey)** at his **school community (blue rink)** who mostly were not ICT savvy.

20. Interaction T

The **teachers (grey) from school D** made an attempt to join OLC4TPD and **the eModerator** tried to facilitate the social learning interaction, but it did not happen smoothly, because of ICT access and literacy limitation.

21. Interaction U

Joko, an **individual teacher (grey)** joined in OLC4TPD mostly through Facebook and some of them became active learners at the Facebook, Web Portal and/or online meetings.

22. Interaction V

Eko shared his OLC4TPD experience to his colleagues who are **teachers with ICT skills (grey and red)** and invited them to join this community.

23. Interaction W

Eko's colleagues, **teachers with ICT skills (grey and red)** informed other **teachers (grey)** about OLC4TPD.

24. Interaction X

The teachers (grey) who heard about OLC4TPD from Eko's colleagues joined OLC4TPD.

25. Interaction Y

Eko's colleagues, **teachers with ICT skills (grey and red)** also joined OLC4TPD.

26. Interaction Z

The teachers (grey) who heard about OLC4TPD from Eko's colleagues (teachers with ICT skills) joined OLC4TPD.

27. Interaction AA

Eko informed other **teacher colleagues (grey)** about OLC4TPD and invited them to join the community

28. Interaction AB

Eko's **teacher colleagues (grey)** informed other **teachers (grey)** about OLC4TPD.

29. Interaction AC

The **teachers** (ab) joined OLC4TPD **individually** and the **eModerator** facilitated them.

30. Interaction AD

EModerator invited a **dean of a teacher-training institute (green and red)** to join OLC4TPD.

31. Interaction AE

Ajie, the dean (green and red) contacted his **IT staff (orange and red)** to organise the participations of the faculty members **(teacher educators – yellow)** in OLC4TPD because he was not an ICT savvy person.

32. Interaction AF

The **IT staff (orange and red)** contacted OLC4TPD and organise how their faculty members could participate in OLC4TPD activities, especially online meetings. The IT staff organise communal activities for the faculty members endorsed by the dean to join OLC4TPD online meeting.

33. Interaction AG

An internal micro community was built among **teacher educators (yellow)**, **IT staff (orange and red)** and the Ajie, **dean (green and red)** in relation to their participation at OLC4TPD online meetings.

34. Interaction AH

Ajie, the dean (green and red) shared his experience he gained from OLC4TPD to **School Principals (green)** in rural and remote schools in Indonesia.

35. Interaction AI

Ajie, the dean (green and red) shared his experience he gained from OLC4TPD to **his pre-service teachers (light green)**, his students. He started to use Skype to organise online class with his students when he was unable to come to class because of his duties in other cities.

36. Blue Lines

Blue lines represent the interactions made between OLC4TPD prominent members with the eModerator. The prominent members were people who were active and influential in OLC4TPD interaction as well as in a wider context, such as Bambang, Adi, Eko and Ajie

Based on the Figure 18, there are significant patterns that are repeated throughout the study, such as:

- Leaders initiated their own and others' participation in the online learning community. A leader can be the eModerator but also other leaders of the community. A leader can be one with a leadership position (Bambang), profession (Adi, the teacher educator, Tri, the principal and Ajie, the Dean) and those with *higher* education/skills (Eko, the teacher from remote areas).

- Members with a leadership position have more power to mobilise the engagement of their own physical community and make a bigger impact. Examples: Bambang was able to invite many Principals from the schools under his supervision, Tri was able to engage her staff to participate faithfully and Ajie was able to motivate his teacher educator staff to join the community.

- A leader needs basic ICT skills in order to be able to sustain their participation in the community. Examples: Ajie was unable to facilitate and motivate the participation of his staff in OLC4TPD, because his ICT skill was low.

- The power of social media changed the dynamic of the community. Social media tackled the challenges of leadership, that is, members with this online learning environment had equal opportunity to engage in the social knowledge construction process.

- Social media, such as Facebook, attracted more female members to join in the online social learning interaction. Some of them have benefited from OL4TPD through interaction with other members both female and male.

- Female members, who could make a significant difference in their own community in regard to OLC4TPD, were those with authority, such as Tri.

- The role of ICT staff is important in 'making things happen' in both the physical community and an online learning community, such as OLC4TPD.

- The power of an expert is apparent in promoting ongoing knowledge exchange in the online learning community.

- OLC4TPD facilitated the development of a new community of practice to improve the quality of education at schools or other organisation (see Example A in Section 7.5)

- Word of mouth promotion occurred as soon as members benefited from the community.

OLC4TPD is a unique OLC to support ongoing teacher professional development in Indonesia. Unlike other OLCs developed in Western countries, the development and sustainability of OLC4TPD was strongly influenced by the role of the community leaders, which in this case were the School Principals (i.e., Tri and others), School Superintendent (Bambang), Senior Teacher (Eko), Teacher Educator (Adi), Dean (Ajie), Education Experts and the eModerator (the researcher).

High power distance and strong collectivism indexes in Indonesia have influenced how OLC4TPD grew and sustained in this setting. As illustrated in Figure 18,

teachers initially joined and participated in the OLC4TPD because their principals required them to do it as a part of their ongoing professional development activities. Despite hectic schedules in their professional life, these teachers sacrificed their free time to join in the OLC4TPD online meetings and its other online activities. Initially, those school principals (School A, B. C) initially also did not have their own initiatives to join OLC4TPD, because they did not know about this possibility, but Bambang, the school superintendent of these school communities, motivated these school principals and their staff to join OLC4TPD. As a school superintendent, Bambang had a significant role in starting the ball rolling. Same stories happened to Adi as the respected teacher educator in Indonesia as well as Ajie as the dean of the teacher-training institute.

Bambang, Adi and Ajie's participation in OLC4TPD was initially motivated by the visions, goals, activities and potentials that OLC4TPD had. They joined OLC4TPD at the early stage and had first-hand experience in ongoing TPD through a community of practice (CoP). While some of these people had limitations with their ICT literacy, they were all eager to have their staff and subordinates to have similar learning experience. In Indonesian context, leaders are key people who can initiate a change. This study demonstrated that their leadership was one of keys for the development and sustainability of OLC4TPD. In term of leadership, educational experts were also considered as leaders, because they provided knowledge. The participants respected them highly as the source of information that could help them grow.

Besides a leadership position in an educational institution, superiority and professional competency could also influence online participation and social learning interaction in OLC4TPD. A teacher like Eko (see Interaction R, V, AA) was a representative of senior teachers, who was considered to have more knowledge, particularly in ICT, than his colleagues. The early ICT survey result showed that many teachers were still lack behind in their ICT literacy. Thus, a competent teacher like Eko was highly respected amongst his community as an *informal leader*. There were also other teachers from other schools in different geographical locations, who showed similar characteristics and situation as Eko. These teachers have also initiated a lot of social learning connections amongst their colleagues and OLC4TPD members. They also had a significant informal role in developing and sustaining

OLC4TPD, because other teachers depended on their ICT competencies to support their engagement in OLC4TPD.

In this study, leaders were usually the first people who opened the ways for themselves and their colleagues to be part of the ongoing TPD through CoP. However, the responsibility to continue the professional development process was individual's. As individuals participated in the OLC4TPD activities and grew their sense of belonging to the community, they usually contributed more, while at the same time benefited for their own professional development. Their social learning interaction and engagement in the community was strongly influenced by the OLC4TPD eModerator as the community leader.

7.5 Impacts of Social Learning in OLC4TPD

This section discusses the impact of OLC4TPD for teachers' professional development (a-g) derived from the perspective of the Webs of Enhanced Practice (Scott, 2009). The sources of data used, were ICT surveys, community transcripts from the three main ICT environments used during the period of October 2009 to December 2010, participant observation notes, brainstorming workshops, email conversations as well as the professional learning journeys of Adi, Bambang and Eko (see Chapter 5).

7.5.1 Joint Lesson Planning to Implement Innovative Teaching Strategies

OLC4TPD had shown it had the potential to facilitate professional and social networking of educators in Indonesia by reducing teachers' workload and enhancing their practice.

See the following example as a part of a community of practice development is the following: A group of secondary school teachers supervised by Bambang (Chapter 5) worked together in their own professional learning community in East Java to make a collaborative presentation about engaging subject-matter lesson plans at OLC4TPD online meeting. This presentation followed a talk given by Bambang on

the previous two weeks, where he explained several strategies to develop plans for effective teaching and learning. With the approval from Tri, the School Principal, all teachers were encouraged to send their lesson plans to the eModerator. They prepared the lesson plans in collaboration with other teachers and their Principals. On the day of the presentation, there were only three teachers (English, ICT, Physics and Mathematics teachers) who presented their lesson plans due to time limitations. All of their lesson plans were uploaded to the community wiki at OLC4TPD portal, so all members could read it whether they had a chance to attend the online meeting or not. Each of them received critiques from other teacher educators, education researchers, instructional designers as well as other members through synchronous and asynchronous methods. Having presented and received feedback, they were encouraged to make, revise and republish it on OLC4TPD's learning repository. Several teachers decided to revise their lesson plans and implement it in their own classrooms. Those teachers testified that there was an improvement when they applied the revised lesson plans in their teaching and learning. Their students became more attentive and creative during the lesson. They also felt the support from their other colleagues and other community members as they did this *solitary* job. Several teachers from this school also started to nurture personal friendship with other community members through this activity.

Some of the feedback given by the teachers, school leaders and educators related to OLC4TPD collaborative learning activities gathered from a series of open-ended interviews is presented below:

Get a lot of information from different people and places, which can be used as an input.

Get more knowledge-get more communication.

Be able to exchange ideas with people from different areas.

Be able to make a dialogue with people anywhere.

Sharing experience with other people from OLC4TPD.

Build new spirit as we receive a lot of feedback from the activities.

A lot of knowledge through sharing with other teachers.

Reflective learning process.

I feel fortunate to join the online meetings every fortnightly. During the one-hour online session, I could meet great people with different expertise and experience from various places in Indonesia and overseas.

It was a genuine honour to engage in discussions with teachers from another country.

7.5.2 *Peer Coaching (Reciprocal Observation)*

Scott (2009) believes that peer coaching is essential to facilitate the transfer of knowledge from workshop settings into the regular teaching repertoire. In practice, peer coaching can be done through class observation to examine how others have implemented various strategies in practice.

With OLC4TPD, observing a class was not feasible, because of geographical and organisational differences among the community members. This community relied on technology to facilitate the process of peer coaching. Through online meetings, a number of teachers, teacher educators, and education researchers were invited to share topics that were relevant to the needs of the community members. Those people, who were called Hotseat Speakers, would share various learning artefacts in form of photos, articles, journals, lesson plans to illustrate their work. They were also available on the Discussion Forum, email or mailing lists for further discussions. Although there were more limitations compared to face-to-face peer coaching programs, the efforts were not meaningless.

A number of community members shared that they had learnt a lot through the talks, learning materials and discussions about topics that were mostly taken from real-life teaching practice. The new process of *online peer coaching* had actually led to significant changes for several community members. One example is Rita, a female secondary teacher. Rita shared with the community that she had heard about the Lesson Study approach for professional development since 2008, but had not yet experienced it. Since she joined OLC4TPD, she claimed to have received both theoretical and practical information on how to implement the Lesson Study at her school, although she previously had thought it intimidating. By joining the online sessions, she was able to meet people from different cities and locations who have applied Lesson Study in their own schools. Here is one of her responses from the Facebook: "…I knew about Lesson Study in 2008, but I have not found any

community to share. Through OLC4TPD, I get a lot of information about Lesson Study and good links"

Implementing new teaching strategies requires commitment, perseverance and effort for transfer to occur from workshop settings into the regular teaching repertoire (Scott, 2009). Listening to a series of workshop talks will not bring a real change if educators do not take a time to reflect on what they learn and how they can implement the strategy into their teaching practice. One example from community members, who had gone beyond just listening to the talks, was a group of secondary school teachers supervised by Bambang in East Java. The teachers from Bambang's school had started to develop a new practice since they joined OLC4TPD. These teachers always continued their sharing and exchanging knowledge after each OLC4TPD online meeting. They mainly discussed how they could put into practice what was learned at the session in order to improve the quality of teaching and learning at their schools. They occasionally also shared a summary of their discussion with the other community members. The process that they were doing had helped the community members to be more reflective on their own practice.

7.5.3   Collegial Cultures

OLC4TPD was designed as a community of educators in Indonesia that opened its membership to both in-service and pre-service teachers, teacher educators and education researchers who had shared interests about education in Indonesia. The initial purpose of the community was to support only in-service teachers, but the researcher realised that the overall education system consists of other stakeholders in particular pre-service and novice teachers. Attrition of these inexperienced teachers, according to Scott (2009), could weaken the teaching profession. These newcomers to the teaching profession need good support mechanisms from more experienced teachers, teacher educators and other education experts. Mentoring relationships between experienced and novice staff is one of the ways to increase satisfaction, comfort and quality of practice. OLC4TPD, members were encouraged to engage in natural mentoring relationships.

Most OLC4TPD members did not know their actual socio-cultural positions in the community. This situation minimised the hesitancies or the inferiority to share

problems or weakness, especially from novice teachers to more experienced teachers (p. 148). In this case, Toni as the secondary ICT teacher from one of Bambang's schools naturally mentored Farid the primary school teacher. Toni had more experience in using various ICT tools and developing interactive ICT-based learning activities to engage his students. He made an effort to look at Farid's website, gave some feedback on the existing website as well as ideas how Farid could improve his website to motivate students to use a game in learning mathematics anytime. In his next posting, Farid was very pleased and grateful in receiving support from the eModerator and other educators, as they knew exactly what he was talking about.

The second example is taken from one of Facebook discussion described earlier (p. 152). Widi, a young male pre-service secondary teacher who did his teaching practicum in a rural school in Western Java was so desperate to find inspiration on how to present difficult content in interesting ways that would please everyone in his classroom. Widi had no clue as to what kinds of people were in the community, thus he felt free to express his desperation. A conversation with Darso, an experienced teacher educator and Eko, the experienced teacher, provided support for Widi. During the conversation, Widi seemed to become more motivated and confident to try out the new tips suggested by Darso and Eko. He also changed his *newcomer* attitude of trying to please everyone to be himself and try to immerse in the new classroom with his own personality.

7.5.4   Reflection and Discussion

OLC provided an environment for the educators to engage in the flexible process of reflection and discussion. Technology advancement enabled educators to contribute to the community and involve in the social learning process at their own time and own place. Being able to reflect on individual practice will give a boost and a guide to improve practice (Bandura, 2001).

In OLC4TPD, teachers and teacher educators were involved in the process of ongoing reflection through the Web Portal discussion portal, Facebook and/or Skype. They discussed and reflected on either general education practice in Indonesia as well as their own practice. Here is an excerpt of a discourse between Adi, the teacher

educator and Arif, a secondary teacher reflecting on the existing professional practice of educators in Indonesia (see Section 5.1.2).

> **Adi:** "From the literatures that I read, if we want to be an expert in our field, we have to practice for 10,000 hours. The practice that we have to do is not a repeated practice yet a practice with an increasing intensity on the other words "Deliberate Practice" What do you think about this?"
>
> **Arif:** "Ten thousands hours? Do you count 60 minutes per hour or 45-minute of meeting time? Does it involve career development from the low level? Would we be able to get the fruits after deliberate practice? Or do we still need factor x?"
>
> **Adi:** "We are professional individual and certificate is one of the proofs. I often find a lot of certified people they are not professional …"
>
> **Arif:** "... That's what I meant, certificate is a piece of paper without any meaning except I got a compensation, yet there is not improvement in working ethics. Thank you for your response and compliment! Hope it will push myself and other colleagues to be more responsible on their STATUS…"

There are always a lot of problems in any education system, yet, many of the educators either do not have a chance to express their thoughts or they just accept their fate as it is. In a collectivist society like Indonesia, people generally do not criticise other people unless they are specifically asked to do so (Hofstede, 1994, 2009). Even then, it is difficult, especially if it involves people with significant power distance.

The discourse between Adi and Arif above and other examples presented in this study demonstrate that in an OLC environment like OLC4TPD this situation can be eliminated. Every member has equal footing to express their thoughts, feelings and insights about their problems and existing teaching practice in most objective ways.

The ability and opportunity to reflect objectively on their own professional practice brought positive impacts for both the individuals as well as the community. Adi and Arif shared some of their feedback about OLC4TPD on the Discussion Forum at the end of 2009:

> To tell the truth, I feel thankful that I can join in this community. The early meeting with (the researcher) during the international conference has continued to be a productive synergy to build a community to development professional capacity of educators in Indonesia. 2009, has stamped a history in my life when I got the chance to be a Hotseat Speaker. All my best ideas and experience that I have got during my works in many places in Indonesian

archipelago have made me enjoyed the online meeting session on (date). Now I would like to invite all educators whom I met to join this community. Especially those teacher friends who live in remote area, they always have unique, interesting and inspiring experience that have inspired me to write an essay or academic writing. It is very appropriate to share their story in a community forum like this, which is attended by researchers, academics, students, teachers and all other elements in education. My hope is that we will have a whole perspective when discussing the effort to develop teacher professional from different angles - theories and realities. Any theme that has been discussed, whoever became Hotseat Speaker, whenever we are during the online meeting, the spirit to develop personal and professional capabilities must be above everything. Good luck! [DB: 09 December 2009, Adi ~ a teacher educator].

At the end of this 2009, I just joined OLC4TPD. I want to hear or give my ideas for other people for the development of Indonesian in general. With the booming of Facebook, there are a lot of groups out there who pro or anti of this and that. But I feel there is a difference with OLC4TPD. We share with each other. In the coming year, can this community boom like Facebook or Twitter? Not just a few people who care about education that joined this community, but all stakeholders in education from the school, government or community!! [DB: 05 December 2009, Arif ~ a secondary teacher].

Both of them emphasised the ability to be able to share with each other. They valued the opportunity to discuss openly about education in Indonesia, reflect on current practice and the things that educators could do to improve the current system and practice. Other teachers who benefited from the process of sharing and learning in this community shared the following comments:

Sharing experience with other people from OLC4TPD.

Build new spirit as we receive a lot of feedback from the activities.

A lot of knowledge through sharing with other teachers.

Reflective learning process.

7.5.5 *Problem Solving*

There are problems existing in teaching that cannot be resolved with assistance from colleagues, superordinates and/or experts. Through online social interaction, even the most isolated participants can be *caught in the webs* (Scott &

Scott, 2010) of other participants' experience that is useful for solving their own problems.

In OLC4TPD, educators were given online learning environments to exchange information and build their knowledge through online social learning interaction. Several teachers came without any concrete motivation. They were just exploring a new way of learning, while other educators came with the specific intention to improve their professional capabilities and to improve their teaching practice. This combination of different people in a one community created a dynamic OLC, where members could explore and benefit from it.

In the example of Peer Coaching (2) discussed earlier, Rita joined OLC4TPD without any particular reason. She went on Facebook and found that her colleagues had joined this community. Yet, after joining this community, Rita finally found an answer for her quest. She had a particular interest in Lesson Study and wanted to try it out at her school. Yet, she was hesitant, as she did not have any experience or anyone who could guide her. By reading the threads, reading any relevant materials shared by other teachers who had expertise in lesson study or listening to experts who gave a talk about this topic, she became *caught in the webs*. She slowly grew her understanding about lesson study. Having been able to pose questions to any educators who had similar interests as hers and had experience in using this approach had boosted her confidence to try out this approach by herself.

Rida from Example B (Section 7.3) had a different story. She had a particular intention to share her problems on OLC4TPD Facebook to get feedback from others. She did not have any idea who might reply to her posts and what kinds of feedback that might arise from her postings. Rida received a lot of responses from other teachers, which potentially answered all of her problems.

7.5.6   *Development and Sharing of Materials*

The development and sharing of materials was one of the key activities of OLC4TPD. Teachers, teacher educators and education researchers exchanged various learning materials in form of academic papers, magazine or newspaper articles, photos, travel journeys, professional learning reflections, lesson plans, presentations, essays and podcasts via OLC4TPD online learning environment. Most of them did it

on a voluntary basis. There were many reasons why OLC4TPD members shared learning materials. Several teacher educators wanted to share the research they were doing with a wider audience, teachers were keen to share the ongoing research or professional development activities that they were doing in their schools, several education researchers were eager to share their reflections and photos from their research travel in other countries.

As members shared their learning materials on OLC4TPD environment, they realised that if other members could access the materials publicly they might be embroiled in scrutiny and potential critique. This action specifically needed courage, because there is a common belief in Indonesian society that a teacher is a *guru* who knows everything. By publishing the materials, they exposed their true self. However, based on the feedback from secondary school teachers from Bambang's school who submitted their lesson plans, the process of sharing the learning materials online was rewarding, as they were able to improve their lesson plans and subsequently their teaching practice.

There were many teachers and teacher educators who had taken up the risk in sharing their work and ideas with the community. Adi (Chapter 5), for example, could not stop sharing his articles, papers, photos, reflection journals that he had produced for OLC4TPD members. The activity itself had benefited him personally in addition to valuable feedback from others that allowed him to improve his professional practice. He said, "… At OLC4TPD I can actualise myself. I am very happy to be able to share and contribute to other people and others valued my thoughts." Heri, another teacher educators, experienced hesitancy in sharing his ideas online, but he changed his attitude after sometimes. Here are his comments:

> … I was hesitant, ashamed and felt afraid to write or share my ideas in the beginning, because other people would notice it. But I realised those kind of things would not help me to develop myself. At least through this forum, I have developed my knowledge on the use of computer for learning and expand my knowledge by communicating with other people. By doing this, I am sure I can solve any problems that we often found in our practice as well as the solutions to improve our education quality [DB: 16 November 2009, Heri ~ teacher educator].

7.5.7 Examination of Student Work

As a part of the expected impact of a web enhanced practice is the examination of students' work (Scott, 2009). Critical examination using high quality samples of students' examination papers was not done during this study, because the focus of the study was on the design and development of an OLC. However, several members had a strong interest in reflecting on the current practice and results of national assessment processes, which reflected the low quality of teaching and learning systems in Indonesia. Several discourses on the Web Portal Discussion Forum and online meetings had critiques and discussed the national examination and assessment. Two of the online meetings discussed digital assessment as an alternative for paper-based assessment of students' work.

7.5.8 Increase understanding of sound assessment

Assessment is a controversial area in teaching and learning, because it places educators on a difficult situation between parents and administrator. In OLC4TPD, the members were involved in a number of synchronous and asynchronous sessions that reflected on the existing assessment system in Indonesia. Increasing educators' understanding about sound assessment is important to at least change the educators' teaching and learning perceptions so they can make changes in their practice. Through the discussion, it was anticipated that the school leaders and government officers involved in the community could consider a better way to improve the national assessment system in Indonesia.

Some of the collaborative discussions to improve understanding about assessments include the following:

> If the brain can learn, quote and train, just before the examination, the brain will forget most of the new information within 14-18 hours, except the information has a meaning…. Assess what you have taught or teach what you will assess? …. If we as a teacher just teach for the sake of assessment needs, can you ensure your students experience the process of learning? …. So the meaning of learning is not as narrow as working out the National Assessment's problems, not just memorizing meaningless information, yet to utilise all of the students' cognitive-affective-psychomotor domains. What do you think about the National Assessment? [DB: 17 February 2010, Adi ~ a teacher educator].

… I agree with you and also another educator who said that many learners encounter problems of "learning for a test" however, in regard to National Assessment, I think there are a lot of positive impact although I agree it also has "drawbacks". One positive impact from a National Assessment is the increase of learning motivation. There are a lot of activities appeared like try-out, tuition, private lessons etc. Maybe, educators should develop an attitude that National Assessment is not the only assessment activity in every school… [DB: 21 February 2010, Bambang ~ a school leader].

Authentic assessment sounds unfamiliar to me. Is that really authentic? …. Maybe some of us have already practiced it. Let's do some research! I found from the Internet that authentic assessment is a process to assess students' competencies that they have gained in form of knowledge or skill evaluation in the context close to a reality (Pokey & Siders, 2001 in Santrock, 2007). This is not a traditional assessment, manipulative, but aims to exploit different skills in students' learning, maybe, in students' cognitive-affective-psychomotor domains [DB: 17 February 2010, Philip ~ a secondary teacher].

I am sure there are schools that have implemented authentic assessment, but only limited to certain schools. Because, the process of authentic assessment is not as easy as pencil and paper-based test, but the result is more authentic. Basically, authentic assessment use different ways of assessing students, starting from performance task, interview, campaign, which also include paper-based test in it. This type of assessment needs commitments from educators to prepare the rubric of assessment, which is surely more than one. For schools without authentic assessment, it does mean that they do not want to use it for evaluating their students … maybe they do not know how, so maybe some trainings can help the educators to apply authentic learning in their classes [DB: 19 March 2010, Rena ~ a secondary teacher]

The social learning interaction had given a lot of opportunities for the community members to reflect and evaluate on the existing National Assessment in Indonesia and explore different types of assessment that could possibly be implemented.

7.5.9   *Self-determination moderated by collegial accountability*

A teacher needs to be self-determined when it comes to their professional development. Scott and Scott (2010) said that the role of colleagues could be a positive element that motivates a teacher in implementing changes to classroom behaviour. An OLC like OLC4TPD showed a significant role in motivating collegial participation to support individual teachers in making a change in their practice. A teacher could receive not only collegial support from the same institution, but also various other institutions.

A female Physics teacher, Shinta, participated in several OLC4TPD online sessions on how to write an academic research paper. Shinta actively participated in the discussions, where she could get feedback on her current practice from the experts and other educators from her school or other places. On one of the face-to-face interviews, Shinta shared that she had facilitated her students to write final essays for many years. After joining two online sessions about academic writing and unintentional plagiarism, interacting with different people and getting constructive feedback about her works, she was determined to change her current practice. She realised that she had been guilty of unintentional plagiarism, because she did not know how to cite and reference other work correctly. The online interaction with other educators had developed her awareness of her mistakes and given her some guidance and understanding on how to improve her practice. She said that OLC4TPD members have helped her to improve her professional skills in writing and teaching an academic essay.

Below are examples of feedback from Shinta's colleagues who have benefited from OLC4TPD activities and built their determination in improving their own professional practice:

A lot of new knowledge I received that can improve my creativity.

It is very useful, especially as it is related to my duties as a superintendent.

Widen perspectives to improve the quality of teaching and learning.

A lot of benefits in particular how to enhance learning process and change the unnecessary teaching practice.

Improve the learning process.

Widen perspective on learning issues.

Seek for information, increase knowledge.

Improve teachers' professionalism to do their teaching responsibilities.

Improve innovation and creativity.

7.5.10 Empowerment

Empowered teachers bring a change in teaching and learning practice. Bandura (1997) said that these kinds of teachers work more effectively to produce

enhanced student outcomes. An online learning environment like OLC4TPD had positively influenced and empowered teachers in Indonesia.

Several Examples (A-C) of empowerment through involvement in OLC4TPD are described below.

a. Example A: Tri

Tri, the female School Principal (Section 6.5) received a recommendation about OLC4TPD from Bambang, the school superintendent, who had to oversee many schools in rural and remote areas in East Java. Even though Bambang had a lot of experience on how to build a better education system in his district, he realised his limitations as just one person improving the quality of education. After joining OLC4TPD in 2009 and identifying the potential of OLC4TPD to develop educators' professional competencies, he recommended Tri to adopt this model for her staff's professional development. Tri with the help from Bambang and OLC4TPD developed a working framework to include her staff's involvement in OLC4TPD as a part of collecting portfolios for the teacher certification program. Tri was empowered as she observed a lot of change happening to her staff's professional competencies since they joined OLC4TPD (see Section 7.5.9). Scott (2010) suggested that when teachers or educators are highly efficacious they tend to feel empowered.

Some feedbacks received from the teachers from Bambang and Tri's school are as follows.

A lot of new knowledge I received that can improve my creativity.

... OLC4TPD improve our competencies. We become more self-confident, receive a lot of new information & feel accepted...

b. Example B: Roni

Roni, a male Indonesian teacher from a rural secondary school in Central Java shared his concerns on his teaching journey with the eModerator during an informal Skype chat. He was concerned that the teachers at his school did not get equal opportunities to improve their professional skills because of their remote location. Due to their remote location and limited resources, only one or two teachers could

join the teachers' forum. He felt that they could not keep pace with other schools. Upon his participation at OLC4TPD, he felt empowered that he could share his ideas easily with other educators from different places in Indonesia or overseas. He envisioned that OLC4TPD has a lot of potential to improve him and his colleague's professional competencies. In OLC4TPD, he also found other educators who shared similar interests with him in writing. He was able to connect and exchange ideas with those people, which subsequently increased the possibilities to improve his knowledge and skills.

Like Roni, Eko (see Section 5.3) was a math teacher from a rural secondary teacher in West Java. He said that he had limited capabilities and access to online technology. After a nine-month dormant period after he joined OLC4TPD membership in October 2009, Eko finally became one of the most confident, committed and active participants in the community. His confidence grew as he found a lot of other teachers facing similar problems like him and even worse. He was able to encourage them to participate in OLC4TPD activities.

c.   Example C: Ajie

Ajie, the Dean of a teacher-training institute in Indonesia (Section 6.5) was interested in exploring OLC4TPD for his professional development, but he initially faced a lot of challenges to join OLC4TPD activities, because of his limited ICT competencies and busy schedules. However, after joining several online meeting sessions on Skype and having social learning interaction with online meeting participants, he shared that OLC4TPD strongly supported him and his staff to collaborate professionally online. Skype was the online learning environment he recommended to other school leaders in rural and remote areas who had limited resources to collaborate with other educators form different places and develop their staff' professional skills. With OLC-based TPD, he realised that learning could take place anywhere and anytime and through interaction with other educators across the country. The same model of TPD was implemented at his class with pre-service teachers. He said that he could save a lot of time and energy from going from one place to another to develop educators' professional competencies. His confidence in the use of online learning environments grew as he interacted with other educators and found that he was not the only one who faced the challenges.

7.6 Summary

This chapter has discussed social learning interaction in OLC4TPD and how this process impacted on the professional development of its members.

The results suggested that OLC4TPD is a unique OLC-based TPD practice that has involved a number of educators across Indonesia. Different from other models of OLC for TPD, social learning interaction in the community was influenced strongly by socio-cultural factors. Three main factors discussed in this chapter were related to power distance, gender and learning paradigm.

Regardless of the factors influencing its design and implementation, there were several positive aspects of OLC4TPD that are evident, such as (1) joint lesson planning, (2) peer coaching (reciprocal observation), (3) collegial cultures, (4) reflection and discussion, (5) problem solving, (6) development and sharing of materials, (7) examination of student work, (8) increase understanding of sound assessment, (9) self-determination moderated by collegial accountability and (10) empowerment. The next chapter will conclude to answer the research questions, and present some design principles and guidelines for further implementation in the Indonesian context and beyond.

CHAPTER 8

CONCLUSIONS AND IMPLICATIONS

Overview

This concluding chapter gives an overview of the research conducted, a summary and conclusions of the findings. It also describes the study's limitations and gives recommendations for further research.

The study sought to investigate alternative ways of developing teachers' professionalism through the design and implementation of an Online Learning Community (OLC) that incorporated four main elements: community, technology, learning and network. The primary focus of the integration of an OLC was to investigate the facilitating and inhibiting factors of OLC implementation in Indonesia, and later analysed how this model could support existing TPD.

An online learning community, named Online Learning Community for Teacher Professional Development (OLC4TPD), which used synchronous and asynchronous online environments and face-to-face meetings, was developed. Teachers, teacher educators and school leaders across Indonesia joined OLC4TPD over a period of time. From 2009 to 2010, a range of data was collected and analysed by triangulating a number of qualitative methods, which provided a rich and detailed picture of how these participants adopted an OLC4TPD by engaging in learning activities in a number of online learning environments.

8.1   Summary of the Thesis

The study aimed to design and implement an OLC to support existing TPD in Indonesia. While the Indonesian government is continually developing a number of strategic education policies and implementing various pathways to improve the professionalism of teachers, there are still a large number of teachers who struggle to access the professional development support provided by the Indonesian government for a variety of reasons. This is particularly the case for teachers who work in rural and remote areas, because many of the current TPD practices still focus on teacher-centred approaches instead of collaborative approaches, and often only in the format of face-to-face interaction. With the advancement of ICT allowing the use of an OLC, it was envisioned that educators from disparate places in Indonesia could engage in continuing process of social learning to meet the demand of the knowledge society.

This dissertation was written into eight chapters. *Chapter 1* started by discussing the significance, purpose and context of the thesis, which included the existing TPD practices and policies, socio-cultural and ICT context of Indonesia. A review of OLC and TPD was conducted on *Chapter 2*. In this literature review, the discussion about evolution of TPD and TPD reformation led to the review of Community of Practice (CoP) concept, how it has been applied in TPD and how ICT has extended this concept into OLC. A theoretical framework for the OLC development in Indonesia was built to conclude this chapter. In *Chapter 3*, the researcher discussed Design-Based Research (DBR) as methodological framework that guided this study, the research procedures, the data collection and analysis methods. Guided by DBR framework, *Chapter 4* presented OLC4TPD concept developed and the process of its implementation in Indonesia.

The findings of the research were presented from Chapter 5 to Chapter 7. The researcher presented three in-depth narrative case studies that depicted professional journeys of a teacher, a teacher educator and a school leader to demonstrate how these educators adopted, engaged with, faced challenges and benefited from OLC4TPD in *Chapter 5*. This chapter provided an intro for further findings and discussions on Chapter 6 and Chapter 7.

Chapter 6 discussed the first research question: *What are the facilitating and inhibiting factors of OLC4TPD implementation to its members in adopting and implementing this model to support their ongoing professional development?* Results showed that there were six ICT and socio-cultural facets that influenced the formation and operation of OLC4TPD. These facets were ICT access, length of experience in using ICT, ICT skill, gender, leadership and synchronous interaction.

Chapter 7 discussed the second research question: *To what extent does social learning interaction in OLC4TPD impact on members' professional development?* In this chapter, qualitative data were collected and used to examine the social learning interaction in several online learning environments. An analysis of social learning interactions using Scardamalia's Twelve Socio-Cognitive Determinants and Hofstede's Cultural Dimensions was discussed. The pattern of social learning interactions and the impacts of the interactions on professional development were also described.

Finally, *Chapter 8* provides a summary of the thesis including the implications for TPD practice, policy, and educational research as well as further research.

8.2 The Design of Online Learning Community

Within the methodological framework of Design-Based Research (DBR) as a guidance, an OLC called Online Learning Community for Teacher Professional Development (OLC4TPD) was developed and implemented. Each aspect of OLC4TPD (community, technology, learning and network) was contextually designed and implemented based on the ICT and socio-cultural conditions pertinent to teacher education in Indonesia.

a. ***Community (Community of Practice)*** - a pivotal element of OLC4TPD that can provide a comfort and trusted environment to support the process of intellectual exchange and gathering for individuals who share similar activities, purposes and goals. This study included the development of OLC from existing local physical CoPs, the introduction and adoption of online

learning environments, and the development of recruitment strategies to nurture membership and participation (see Section 4.3).

b. **Technology** *(Knowledge Construction)* – a backbone that provides support to OLC4TPD and the main instrument to initiate and strengthen relationship, enhance social learning interaction and mobilise joint planning and community action. Based on the preliminary ICT surveys and interviews, the main online learning environments used in the study were the Web Portal Discussion Forum, Skype and Facebook (see Section 4.4).

c. **Learning** *(Collaborative Learning)* – the purpose of OLC4TPD. Building an OLC means developing social learning interactions in one or more online learning environments. The learning activities, resources and support are the components of learning, which were developed based on the contextual ICT and socio-cultural perspectives of Indonesia. *Learning activities* included synchronous online meetings and asynchronous discussions about a number of education policies; *Learning resources* included learning materials developed by the community members on the community wiki. A number of education experts were invited from several organisations in Indonesia and overseas to deliver talks and presentations. *Learning supports* included ongoing mentoring on how to use OLC4TPD online learning environment (see Section 4.5).

d. *Network (Social Presence)* – an element of the OLC that critically determines the rhythm of social learning interactions in an OLC. Several strategies to build online social presence (network) were developed through different stages of the online teaching and learning (see Section 4.6).

8.3   Research Results

Two main research questions were proposed to guide the investigation, and inform the methods used to collect and analyse the data.

8.3.1   Research Question 1

What facilitating and inhibiting factors of OLC4TPD implementation contribute to the extent to which its members adopt and implement this model to support their ongoing professional development?

The first research question was concerned with examining factors that facilitated and inhibited OLC4TPD members in adopting and implementing an online learning community model to facilitate their ongoing professional development activities. Data collected from preliminary ICT surveys, brainstorming workshop, interviews, participant observation notes, field notes as well as community transcripts were analysed to answer this first research question.

Results showed that the availability of *ICT access* at home, office or other places influenced the extent of engagement in the social learning process. Having strong motivation helped community members in their struggle to overcome the ICT access barriers and inspired them to make the best out of this situation. Motivation is related to individual goals, such as learning and trying something new. While many ICT challenges were experienced during the early stage of the study, the development of social media and mobile technology at the later stage of the study led to increased access to OLC4TPD.

In addition to ICT access, results revealed that the *length of experience in using ICT* (computer and Internet) influenced the level of social participation in OLC4TPD. Significant lengths of experience in using ICT reduced a steep learning curve that often hindered somebody from participating actively in the online learning community. The longer of the experience with ICT, the easier and faster the adoption process and the more they benefit gained from the participation in it.

Results showed that three basic *ICT competencies* (using Internet, email and social media) were crucial to support engagement in an online learning environment. These sets of skills enabled the community members to learn about and use the online learning environment and other component tools. The research showed that although most of the teachers and teacher educators had never used online learning environments before, these three basic ICT competencies enabled them to explore and adopt the new online skills. Those with these skills tended to survive and be able to engage with other members unless there were any other inhibitors, such as work commitments and socio-cultural issues.

The study showed that socio-cultural factors associated with *gender* was one of the facets that often inhibited active participation of female members. Many female teachers were still considered inferior in term of IT-related matters at organisation level. Thus, many female educators often did not have a voice or opportunity when it came to initiating or coordinating IT-related matters. Those female figures with authority usually had more of a voice and confidence than others. On the other hand, there was a difference between male and female members in terms of using of technology on a personal level. The rise of mobile technology and social media has led ICT to become a more significant part of both males and females' lifestyles. It has allowed the engagement of female members as equal partners in the online teaching and learning process.

Results of data analysis found that *leadership* was a facilitating factor that influenced the success of OLC4TPD. In a *high power distance* and *strong collectivist society* like Indonesia, a leader is like *the motor that drives a vehicle*. The leaders (dean, school principal, school leader, teacher educator, government officer) influenced many of the major decisions, breakthroughs and changes in the TPD system and within OLC4TPD practice. Yet, strong leadership needed to be accompanied by adequate ICT skills, knowledge and a strong motivation to learn new things in order to sustain an online learning community like OLC4TPD.

Results demonstrated *synchronous interaction* bridges the gaps between face-to-face and online learning interaction. Access to ICT and ICT literacy were evinced to be the first two most influential factors that inhibited OLC4TPD implementation in Indonesia, however, the study showed that these challenging factors could be transformed into potentials. Adoption to Skype as a synchronous online learning

environment was the hardest, thus membership on Skype was the lowest. While there were only a few people successful to adopt this technology and participate in the bi-weekly OLC4TPD online meetings, the social learning interaction produced in this environment was intensive. In addition to its engaging activities, discussions and activities, synchronous online interaction in Skype bridged the gaps between face-to-face learning interaction and online learning interaction. The fact that educators from all over Indonesia and some from overseas could gather together and engage in mutual professional conversation encouraged OLC4TPD members to take part in the synchronous online meeting activities conducted at Skype online learning environments. Therefore, most of the community members were interested to take part in this synchronous activity. Some members consistently tried and became successful after a while, while the others decided to wait and see.

The implementation of OLC4TPD in Indonesian context has demonstrated a lot of potentials, while at the same time presented new challenges as well. The possibilities to have an alternative way of conducting flexible and ongoing teacher professional development using existing and low-cost technologies were shown. At the same time, a steep learning curve and a change in social learning interactions were among several challenges to be tackled during the implementation of this new model. The factors that facilitated and inhibited were identified and strategies were developed to embrace and transform the challenges into potentials.

8.3.2 Research Question 2

To what extent does social learning interaction in OLC4TPD online learning environments impact on members' professional development?

Results showed that OLC4TPD members used the online learning environments that are Web Portal Discussion Forum, Skype and Facebook to participate in the learning activities and interact with other members. Facebook appeared to be the most popular ICT environment used by the community compared to the Web Portal and Skype. On the other hand, based on the level of participation of the registered members, Skype seemed to attract more of its members to participate actively than the other two ICT online environments. The synchronous meeting on Skype opened up a lot of possibilities and increased opportunities for educators from

disparate geographical location to exchange knowledge with each other and solve their professional problems in real-time.

Results demonstrated that the number of teachers who participated in the social learning interaction on Facebook was higher compared to the Web Portal Discussion Forum. Teacher educators dominated the Web Portal Discussion Forum participations, because they had better ICT competencies and experience in using web-based discussion forum or discussion board than teachers. In addition, the interaction on the Web Portal Discussion Forum needed more access to ICT (e.g., personal computer and the Internet access). The presence of social media such as Facebook appeared to increase accessibility for teachers, especially those in rural and remote areas, to engage in ongoing professional development activities and mutual collaboration with educators from different places. Social media could be accessed easily on the mobile phones, which all participants including teachers in rural and remote areas had. The mobile phone providers usually gave free or low-cost service to access social networking sites like Facebook and Twitter.

In a *hierarchical community* such as OLC4TPD, the role of the eModerator to facilitate social learning process was crucial. The high Power Distance index (PDI) and the strong collectivism index (IDV) in Indonesia were two of the factors that influenced this situation. An eModerator was considered as a leader, who should constantly guide and facilitate the online learning process. Minimum or no facilitation from the eModerator was to the participants, like a *class without a teacher*. Strong leadership in form of intensive facilitation and guidance from both the eModerator and other authority figures in the community were needed in order to make this new community grow. This finding might be different from Western models of OLC, such as that used with the "oz-teachers" email list from Australia, which can be sustained without active facilitation from an eModerator.

Results from the discourse analysis conveyed that the teachers at OLC4TPD tended to present and share real ideas and authentic problems and look for solutions from other community members (KB1). They usually could not find any practical information from the textbooks or other resources. The teacher educators, on the other hand, tended to expose their knowledge and come up with various ideas and/or solutions for the problems posed by the teachers (KB3). In the case of the school leader, the findings found that he tended to set forth his ideas, negotiate with other

member's ideas, sustain knowledge development, and evaluate the practice (KB5). The summary of social learning impacts in OLC4TPD is the following:

Joint lesson planning to implement innovation. Several secondary school teachers engaged in collaborative learning activities to write and present their lesson plans during an OLC4TPD online meeting and at OLC4TPD wiki (see Section 7.5.1). These teachers received feedbacks from other educators in the community to refine their lesson plans. As they revised their lesson plans, they shared their experience to OLC4TPD online meeting participants. Two of the teachers reported that their students were more engaged in the teaching and learning process than before because of they incorporated some feedbacks from other community members.

Peer coaching (reciprocal observation). There were no actual face-to-face peer coaching activities, but a series of talks and critical discussion on these related topics (e.g., lesson study) were conducted on the Web Portal Discussion Forum, Skype Online Meeting and Facebook. One of the female teachers, Rita, shared how she has built her knowledge about peer coaching by reading to the postings, listening to the talks and engaging in online discussions on the Facebook (see Section 7.5.2).

Collegial Cultures. OLC4TPD members supported each other when they shared authentic problems they face in their daily professional life. Some of the examples can be found from the experience of Farid, Toni, Widi, Eko and Darso (see Sections 7.3, 7.5.3).

Reflection and Discussion. Reflecting the professional practice and education policy was one of the most popular ongoing discussions conducted by OLC4TPD members on the Web Portal Discussion Forum, Skype and Facebook. The discussion has enriched and helped the members to improve current teaching and learning practice (see examples from Adi and Arif on Section 7.5.4).

Problem Solving. Teachers at OLC4TPD usually came up with a number of authentic problems and real ideas from their practice. They looked for solutions of their problems. Other members usually provided diverse ideas to solve the problems, including the half-bake ideas (see examples from Rita and Widi on Sections 7.3 and 7.5.2).

Development and Sharing of Materials. OLC4TPD members voluntarily shared their teaching and learning materials, such as articles, research notes, travel

journeys, presentations, lesson plans, photo, to the community so they could benefit from them. The posted links, attached documents and uploaded in the Wiki at the Web Portal Discussion Forum or Facebook (see Section 5.2).

Examination of Student Work. A number of critical discussions on national assessment and its challenges were continually conducted on the Web Portal Discussion Forum (see an example of the conversations between Adi and Bambang on Section 7.5.8)

Increase Understanding of Sound Assessment. OLC4TPD conducted several online meetings discussing the topic of assessment were conducted on the Web Portal Discussion Forum. Members engaged in critical discussion and reflection about digital assessment and its implementation in Indonesia. An example of the asynchronous discussion can be found in the Section 7.5.8.

Self-determination Moderated by Collegial Accountability. Several teachers, like Shinta, a female teacher was determined to change her *wrong* teaching practice after joining OLC4TPD meetings or engaging in asynchronous discussions. As she participated in the community discussions, she gained new knowledge and awareness by discussing with the experts and other community members (see Section 7.5.9).

Empowerment. Teachers in rural and remote schools felt supported by OLC4TPD, because they could have the same chance to engage in professional discussions with other educators across the country without having to wait until the schools sent them for official teacher forums. Regardless their locations, they could have equal chance as others to improve their professional competencies through online TPD activities (see Section 7.5.10). OLC4TPD enabled teachers to expand their professional network (see Ajie on the Section 7.5.10 Example C), female educators get empowered to share their thoughts (see Dona on the Section 7.3 Example C), schools to develop their own learning community (see Tri on the Section 7.5.10 Example A), teachers to get unlimited access to learn (see Rita on the Section 7.5.2), and teachers make a change in her professional practice (see Shinta on the Section 7.5.9).

8.4   Limitations of the Study

This study has provided strong evidence of the effectiveness of online learning communities to facilitate ongoing teacher professional development through online social learning interactions using both synchronous and asynchronous online learning environments. However, there were some limitations (a to e) to this research that should be considered.

a. Technology Requirements

As the backbone of an online learning community, technology was an essential element that facilitated flexible and ongoing professional development activities as well as promoted social learning interactions. ICT access and ICT competency were prerequisites for the community members to participate in OLC4TPD; however, many of the educators, particularly teachers in rural and remote areas, had only limited or no ICT access, in addition to limited ICT competencies. Therefore it took some time for OLC4TPD to grow its memberships and for the members to use the technology maximally for professional development purposes. Dedicated ICT training was crucial, however, there was no available resources to conduct such training.

The development of OLC4TPD was mainly influenced by the advancement of social media and mobile technology at the later stage. While the ICT knowledge of the community members on the use of such technologies for TPD was limited, the results showed that these technologies showed their potentials to involve a large number of people in online learning communities from the cities, rural and remote areas. The next development of OLC4TPD should focus on the use of other social networking sites that are already widely accepted by the community members, such as Facebook and Twitter to run its online learning activities. With the latest development of the Facebook feature, there is also the possibility for the analysis of the social learning interaction of its members on daily basis.

b. Sustainability of Independent Initiatives

OLC4TPD was designed and implemented as a non-formal TPD initiative that involved voluntary participation from educators in Indonesia. The project did not receive any supports (e.g., funding) from the Ministry of National Education. It started as a part of the researcher's PhD project and grew organically as educators in Indonesia were interested to take a part in this initiative. The initiative did not offer any financial remuneration for participation as is typical in other government or school TPD programs. Learning activities were conducted as *free-flow* (voluntary) discussions instead of structured and imposed activities. Therefore, motivation and participation in the community were often unpredicted. Results showed the role of community leaders (e.g., moderator and school leaders) were crucial to support the growth of the community. Acceptance and acknowledgement from the educators and government were crucial to get for the sustainability of this community.

c. Impact of Research on Learning

The focus of this study was to design and implement OLC4TPD concept in the Indonesian context; investigate its feasibility and impact on the professional development of its members. This research provided a new perspective for teacher education practice in Indonesia that online learning community as an alternative model to facilitate ongoing TPD. Results showed that several educators had benefited from this initiative. However, due to time and other resources limitations, this research did not systematically explore the impact of teachers' participation in OLC4TPD on students' achievement and change of practice in the classroom. Dede's research (2006) on the implementation of OLC in various settings identified that there were indeed a lack of research on the impact of OLC in students' achievement. As there were no similar preliminary studies in this area, an initial feasibility study for the adoption and adaptation process of OLC4TPD concept was crucial. This study is expected to be a stepping-stone for further studies on education reformation through OLC-based TPD in similar context in Indonesia as well as other countries. Further study should aim to cover other issues, such as OLC-based TPD program evaluation and social network learning analysis of online learning interactions on various online environments (all for the Indonesian contexts).

d. Time Commitment Required

The OLC concept for TPD was considered new when it was first introduced; therefore, it took time for some educators to adopt it as a part of their ongoing professional development activities. Developing an OLC for TPD that never existed before required a great deal of time and effort. The researcher had to deal with both the process of design and development as well as growing awareness of the members about this initiative. A large number of teachers and teacher educators needed significant time to grasp the concept of OLC4TPD and adopt it for their own TPD practice, for example: Eko, the teachers (9 months) and Don, the dean of the teacher training institute (more than a year). Time was precious for these educators, thus involving in voluntary activities, such as OLC4TPD, needed a lot of their commitments and sacrifice. For the next development of OLC4TPD, a new framework of shorter structured online learning courses that will be conducted on voluntary basis and awarded with certificates of participation will be introduced. Shorter time to intensively grow a learning community to improve professional development practice and to award the effort and time sacrificed is the main purpose of the next phase of OLC4TPD development.

e. Managing Validity and Reliability of the Study

The multiple roles as researcher and eModerator may cause biased assumptions that affect data collection processes and their outcomes as well as data analysis processes and their outcomes. As a part of the Design-Based Research (DBR) process, the researcher iteratively conducted ongoing analysis to validate the design decisions made. Involving participants as design partners on regular basis also provided validity and reliability of the data collected and analysis. The data collected was also continuously triangulated using various methods, such as different data sources: surveys, interviews, and online community transcripts from three online environments.

8.5   Implications of the Study

Developing teacher professionalism on ongoing basis is a critical aspect of the 21st century education. The issue of how to best facilitate and support this in current conventional teacher professional development practice is likely to receive increased attention. An OLC-based model to enhance ongoing TPD in Indonesian context called OLC4TPD was introduced and implemented as a non-formal independent TPD initiative that complemented the existing TPD practice conducted by the Indonesian government, its agencies and teacher training institutes. The feasibility of this model to support the existing TPD practices to reach out teachers across different geographical locations and engage them in ongoing social learning interactions was investigated.

The result showed that this initiative, with its limitations, has encouraged its members to engage in ongoing social learning interaction processes with other educators from different geographical locations and educational institutions in Indonesia. Teacher professional competencies were developed, confidence was increased, professional networks were expanded, female educators were empowered, and teachers from rural and remote areas were given equal opportunities to develop. All were done with limited resources (e.g., time and funding).

Considering these impacts, the culture of social learning interaction within an OLC should be supported and nurtured by government institutions, teacher training institutes and other education organisations. For example, a systematic program of ongoing TPD using social media and mobile technology should be intentionally developed and implemented to improve the quality of in-service teachers in Indonesia. It should also be considered by the Ministry of National Education to organise mobile learning (m-Learning) using mobile technology and social media to facilitate the process of upgrading teachers' professional qualification and ongoing professional enhancement process.

Through OLC4TPD the research confirmed the viability of implementing an OLC to support TPD practices in Indonesia. This model could be implemented in other contexts that share similar ICT landscapes and socio-cultural heritages. By

learning from the similarities and differences, this will save the need for trial and error in implementing a completely new TPD model into existing practice. Two Examples (A and B) of the adaptation of the model are now presented.

a. Adapted for socio cultural context

In a country with similar high power distance and collectivism indexes to Indonesia, such as Malaysia, the original concept of OLC, which promotes equality in the process of teaching and learning, will probably not work without strategic modifications. While equality in teaching and learning needs to be fostered, the contextual OLC still needs to promote a strong leadership framework to meet the needs of the society. It might not be an imposed teacher-centred model, but the appointment of community leaders/education experts in the community that will enhance the growth of the community (numbers of members and quality of learning).

b. Adapted for ICT landscape

In developing countries, where ICT infrastructure (access) is a challenge, yet their mobile technology penetration is significant, such as Brazil, South Africa, India, it is more sensible to focus on the use of mobile phones and its applications to support the development of an OLC instead of wasting time in trying other less feasible online environments. The study showed that the use of social media on mobile phones was the most sustainable in gathering educators from various places in Indonesia and overseas, even though the initial intervention was not significantly different in terms of social learning interaction (due to limited knowledge and awareness in using this online learning environment for professional development purposes).

8.6   Recommendations for Practice and Policy

The research conducted in this study confirmed the possibility of implementing an online learning community that facilitates ongoing professional development of teachers in Indonesia. Based on this research, it is worth considering some issues that emerged as a result of this research as well as highlighting

possibilities for further research. Several further implication of the study the practice, policy and research will be discussed the following.

8.6.1 *Practice*

OLC model was initially developed in Western countries, which generally have low power distance and high individualism indexes, so the original model of OLC does not consider hierarchical order as critical. Members of an OLC are on an equal footing to participate in social knowledge interactions. Yet, there is a big difference in the implementation of OLC in a country with high power distance and low Individualism Indexes such as Indonesia.

Results showed that the growth and sustainability of OLC4TPD relied on the role of leaders both within the online learning community and the physical CoP (e.g., schools, teacher training institutes, NGOs and universities). Based on the results on social learning interaction patterns, OLC4TPD was considered a *hierarchical* community. This community critically needed a strong leadership figure to facilitate active involvement beyond *peripheral* engagement. These leaders mobilised the participations of the community members, encouraged and supported them in their professional development journeys. The study showed that the level of OLC4TPD member interactions relied greatly on the active initiatives and engagement of the eModerator.

Socio-cultural factors should be considered carefully and critically in order to nurture, sustain an OLC in Indonesian context and build a better support system. Instead of widening the social gap, committed and qualified members should be recruited and appointed as OLC leaders to support the rest of the group. Several proposed strategies for further development of an OLC-based TPD in Indonesia include the following.

- Providence of 24/7 online supports, provided by member volunteers through Skype and Facebook (Chatting). Facebook was considered more feasible, because of the numbers of people using this online environment, flexibility and accessibility (on mobile phones), time of accessing and using it (24 hours).

- Ongoing support for individual community members in form encouragement,

wishes, and advice, given by the *eModerator team*. The support can be given through email, instant messaging, SMS, phone calls or Skype to encourage active participations and contributions in the community.

- Sharing responsibility – engaging the committed community members to take leadership positions. Some of the proposed requirements to take a leadership position are:

  o Be active members of the community for at least the last six months.

  o Contribute consistently in the online learning community environments.

  o Have interest to promote the online learning community to a wider audience.

  o Have a good access to ICT and an adequate set of basic ICT skills (Internet knowledge, email, social media).

  o Preferably to have influence and/or authoritative power in communities or professional learning communities (e.g., schools, teacher training institutes).

Several tasks proposed for these appointed leaders include the following:

- Promote the online learning community.

- Initiate interaction and nurture collaboration with various educational organisations and CoPs.

- Be the online learning community representatives within assigned areas.

- Be the online moderator of any online meeting (at least twice a year).

- Be responsible as an online *secretary* to help members in writing the summary of a discussion and update the online repository on ongoing basis.

- Assist the principal eModerator to reply to queries, initiate and facilitate discussion.

- Assist newcomers to learn about new online learning environments and adopt it.

Education in Indonesia was often considered as a one-ride ticket as an implication of a high-index collectivism society. However, results demonstrated that interest for ongoing professional discussions about teaching and learning practice grew within OLC4TPD online learning environments since it was first launched in 2009 (see Chapter 5 and 7). One of the contributing factors was the recognition, acknowledgement or awards given to the participating members, for example: *Certificate of Participation*, *Wall of Fame* and *Person of the Month*. On the other hand, OLC4TPD was often not considered as *serious* TPD activities due to its voluntary nature.

The case of OLC4TPD can be similar in other contexts that have similar socio-cultural traditions to Indonesia. Thus, development of a formalised online program that provides *certification* is recommended. In addition to free-flow synchronous and asynchronous online discussions, a series of free, but structured online classes that are conducted within a short time period (4-8 weeks) for the whole year should be developed. Accomplishment in each module would be awarded with a certificate of participation that can be used for teachers' portfolios. Each participant would need to subscribe at the beginning of the course and participate the online learning activities to get the certificate.

Courses need to be built on a platform that can be accessed easily both on PCs and mobile devices (e.g., phones and tablets). Each learning activity should be built based on the themes that are relevant to the needs of local participants. The participants would be graded based on their social learning interaction in online learning environments and knowledge built from their interaction. The learning activities should enable members to interact on a real-time give a sense of presence as they receive direct feedbacks from others or the instructors thus the course will need to include synchronous online meetings.

Finally, results demonstrated that ICT access and literacy were the more influential inhibitors in OLC4TPD implementation in Indonesia. It was found that social media and mobile technology provided the best access to OLC because most Indonesian including those in rural and remote have mobile phones and mobile data access connected to social networking site such as Facebook. Considering Indonesia as the third largest mobile market, other contexts in Asia, America Latin and Africa

that share similar ICT landscape can learn from the experience in this study. There are some lessons to learn in relation to maximising technology potential.

The first lesson is to start with the most familiar and accessible ICT online learning environments (from users' perspectives) in the context to start the online learning community. Second, conduct a survey on the ICT landscape, because it is crucial to understand particular needs of the prospective online learning community context and its members before an OLC is built. Third, the most familiar and accessible online learning environments in a particular context might not be the same learning environments suggested in other contexts. Yet, the use of the most familiar and accessible tools can boost and smoothen the adoption of the OLC and the formation of an online CoP. Finally, ongoing PD on ICT needs to be done to continually improve the ICT competencies of its members, so the members can use more online learning environments and their tools to assist their professional development activities.

8.6.2 Policy

The independence of OLC4TPD was an advantage in this study, because educators had the freedom to choose any learning topics to discuss, use any online learning environments and work with any people. However, being independent meant that there were no financial and other supports given by the government to the community and educators involved in it. In order to sustain the community, collaboration with key stakeholders needs to take place. Some of critical collaboration initiatives would include the following.

- Collaboration with national telecom companies to provide more free ICT access for education in rural and remote areas – engage community members to write a letter to the national telecom companies to collaborate in the community projects for teacher education.

- Collaboration with the Ministry of National Education and its education agencies to organise various TPD activities. Open discussion with the government officers, organise joint online and face-to-face activities to involve teachers from various locations in Indonesia.

8.7   Future Research

Results showed that synchronous online interaction attracted most OLC4TPD community members due to the facts that it offered possibilities to conduct real-time social learning interaction. The real-time presence of the community members in an online learning community activity was crucial in a society with a low Individualism Index (a high Collectivism Index), such as Indonesia. It was confirmed that synchronous interaction improved sense of belonging of community members as well as their social learning participations in an online learning environment. In addition, the presence of education experts in a synchronous online meeting provided strong supports for the members to engage in online knowledge exchange and building as well as reflective learning practice. For many OLC4TPD members, the synchronous online interaction was an extraordinary experience, especially for those from rural and remote areas who had limited opportunities to update their knowledge through conventional TPD practices.

Considering the importance of synchronous online interactions and considering the challenges of running synchronous online meetings, there are several strategies that can be explored to modify and improve the current practice.

- Organise synchronous online meeting on a weekly basis.

- Include a program of seminars, presentations, community discussions, and sharing from the community members. Activities like games, reflection rooms, sharing and learning can be organised to engage members in social learning interactions.

- Involve the eModerator teams to actively lead the synchronous activities

- Invite education experts from various organisations both within Indonesia and overseas to share their knowledge and research.

- Build a network of education experts, where all the education experts who spoke in the meetings can provide consultancy.

- Organise community members in using a video of their teaching practice or reflection with their colleagues and put them in an OLC4TPD online repository. Based on the video, a real-time discussion can be carried out

among the community members.

- Upgrade the standard Skype to be Skype Business, to allow more (unlimited) participants and video conversation. A thing to consider about synchronous online environment for this similar context is that it can maintain the work with a minimum bandwidth, a short learning time, and low cost.

The researcher plans to conduct a further study to investigate the following areas that emerged from the research:

- Learning Analytic study to investigate in advance the difference between social learning interactions in both synchronous and asynchronous OLC environment as well as their impact on students' learning improvement

- The emergence of gender in an OLC-based TPD in Indonesia

- The religious aspects of social media in an OLC-based TPD in Indonesia

8.8   Conclusions

This thesis presented the results of research that set out to develop and implement OLC4TPD to support the existing TPD practices in Indonesia. The facilitating and inhibiting factors of OLC implementation in Indonesia were presented. The impacts of social learning interactions happened in this OLC were investigated.

The results also showed that there were six ICT and socio-cultural factors that influenced the formation and operation of OLC4TPD. These factors were ICT access, length of experience in using ICT, ICT skill, gender, leadership and synchronous interaction. Based on the data analysis, OLC4TPD demonstrated several positive impacts, such as facilitation of joint lesson planning, peer coaching, problem solving, reflective practice, collaboration, improvement of professional knowledge and empowerment. While the majority of OLC4TPD members benefited from the knowledge dissemination, there were still a number of educators who chose to take a passive role in the social learning process.

As a part of the future implementation, OLC4TPD has been developing a low-cost online TPD using that offers short courses in education and provides certification for its participants. Existing synchronous and asynchronous technologies that were identified to be accessible for educators across Indonesian archipelago will be used (e.g., Skype, Facebook, Email accessed through mobile phones). This initiative aims to reach out teachers across the Indonesian archipelago. A poll of teacher trainers and educators to develop the curriculums, teaching materials and to train online has been recruited. This TPD model follows the guidelines developed through this study and engages educators in social learning interaction to achieve their professional goals instead of teacher-centred approach.

In conclusion, the research confirmed the viability of implementing an OLC to support TPD practices in Indonesia. This model could be implemented in other contexts that share similar ICT landscapes and socio-cultural heritages. With the limitation of OLC4TPD as a non-formal independent TPD initiative, it is imperative that this type of TPD receives support from government institutions, teacher training institutes and other educational organisations and institutions to enhance the existing TPD practices and accelerate the process of improving teacher professionalism in Indonesia. At the same time OLC4TPD could be readily adapted for use in other countries taking into account differences in ICT landscapes and socio-cultural heritages.

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APPENDICES

Appendix 1.
Information Letter (English)

Information Letter

Project Title:
Designing Online Learning Community for Teacher Professional Development

Dear _____

My name is Eunice Ratna Sari, a PhD candidate of Edith Cowan University. As part of the requirements of the Doctoral of Philosophy (PhD) study, I conduct a research on Online Learning Community for Teacher Professional Development in Indonesia. During the study, I will carry out the following activities with teacher educators and teachers in Indonesia:

- Interviews
- Questionnaires
- Focus Groups
- Online Observation

The data will be treated as confidential; the identity of the participants will not be disclosed to people other than the researchers. The result of the study will be able to be accessed through Edith Cowan University or the researchers. The participation of this study is voluntary and the participants can withdraw their consent at any time they feel uncomfortable with the study.

If there are any queries regarding the study, you may contact the following:

- **Student Researcher**: Eunice Ratna Sari, esari@student.ecu.edu.au
- **Supervisors**:   Prof. Dr. Cher Ping Lim, c.lim@ecu.edu.au and Dr. Jeremy Pagram, j.pagram@ecu.edu.au

Or if you wish to talk to an independent person you may contact:

- **Research Ethics Officer**
  Edith Cowan University, 100 Joondalup Drive, Joondalup, WA 6027
  Phone: (061) (08) 6304 2170, email: research.ethics@ecu.edu.au

The Human Research Ethics Committee, Edith Cowan University, Australia, has approved this study.

Appendix 2.
Information Letter (Bahasa Indonesia)

Surat Pemberitahuan

Judul Proyek: Pengembangan Komunitas Pembelajaran Online Untuk Pengembangan Kemampuan Profesional Guru-guru di Indonesia

Dear _____

Sebagai bagian dari penelitian S3, saya, Eunice Ratna Sari, mahasiswa Edith Cowan University, Australia akan mengadakan penelitian di bidang Komunitas Pembelajaran Online untuk Pengembangan Profesional Guru-guru di Indonesia. Berkaitan dengan penelitian ini, saya akan melakukan berbagai aktifitas pembelajaran dan pengambilan data bersama dengan guru-guru, peneliti dan pengajar di Indonesia menggunakan metoda-metoda berikut ini:
- Interviews (Wawancara)
- Questionnaires (Survei)
- Focus Groups (Fokus grup)
- Online Learning Observation (Penelitian Pembelajaran Lewat Media Online)

Dalam penelitian ini, informasi pribadi Anda akan bersifat rahasia dan identitas pribadi saya tidak akan diberitahukan, selain kepada peneliti yang bersangkutan. Anda bisa mengakses hasil dari penelitian ini melalui Edith Cowan University atau lewat peneliti. Keikutsertaan Anda dalam riset ini bersifat sukarela dan Anda bisa menyatakan pengunduran diri Anda kapan saja.

Jika ada pertanyaan lebih lanjut, silakan menghubungi:
- **Peneliti utama**: Eunice Ratna Sari, esari@student.ecu.edu.au
- **Pembimbing**: Prof. Dr. Cher Ping Lim, c.lim@ecu.edu.au dan Dr. Jeremy Pagram, j.pagram@ecu.edu.au

Jika Anda ingin berkomunikasi lebih lanjut dengan Edith Cowan University, Anda bisa menghubungi kontak berikut ini:
- **Research Ethics Officer**
  Edith Cowan University, 100 Joondalup Drive, Joondalup, WA 6027
  Phone: (061) (08) 6304 2170, email: research.ethics@ecu.edu.au

Penelitian ini sudah disetujui oleh The Human Research Ethics Committee, Edith Cowan University, Australia.

Appendix 3.
Consent Form (English)

Consent Letter

Project Title: Designing Online Learning Community for Teacher Professional Development in Indonesia

I, _____ hereby give my consent to be involved in a study conducted by Eunice Ratna Sari in her research on Online Learning Community for Teacher Professional Development in Indonesia.

I have been provided with a copy of the Information Letter and have read and understood the information provided. I also acknowledge that

- I have been given the opportunity to ask questions and have got any questions answered to my satisfaction
- I am aware that if I have any additional questions I can contact the researcher
- I understand that the participation in the research project will involve interviews, focus groups, questionnaires and online observation.
- I understand that the information provided will be kept confidential, and that my identity will not be disclosed without consent
- I understand that the information provided will only be used for the purposes of this research project, and understand how the information is to be used
- I understand that I am free to withdraw from further participation at any time, without explanation or penalty
- I freely agree to participate in the project

Signature _____ Date: _____

Contact Details:

Student Contact	Supervisors	Research Ethics Officer
Eunice Ratna Sari esari@student.ecu.edu.au	Dr. Jeremy Pagram, j.pagram@ecu.edu.au Professor Dr. Cher Ping Lim, c.lim@ecu.edu.au	Edith Cowan University 100 Joondalup Drive Joondalup WA 6027 Phone: (061) (08) 6304 2170, Email: research.ethics@ecu.edu.au

Appendix 4.
Consent Form (Bahasa Indonesia)

Surat Persetujuan

Judul Proyek: Pengembangan Komunitas Pembelajaran Online Untuk Pengembangan Kemampuan Profesional Guru-guru di Indonesia

Saya, _____ menyetujui keikutsertaan saya di dalam penelitian yang dilakukan oleh Eunice Ratna Sari di bidang Komunitas Pembelajaran Online untuk Pengembangan Kemampuan Profesional Guru-guru di Indonesia.

Saya sudah menerima surat pemberitahuan mengenai proyek ini dan sudah membaca serta mengerti semua informasi yang diberikan oleh peneliti dengan jelas.

Saya juga mengetahui bahwa:

- Saya sudah diberikan kesempatan untuk bertanya dan mendapatkan jawaban yang memuaskan.
- Saya mengetahui bahwa saya bisa menghubungi peneliti kapan saja jika ada pertanyaan lebih lanjut.
- Saya mengerti bahwa keikutsertaan dalam proyek penelitian ini meliputi kegiatan-kegiatan berikut ini: wawancara, survei, focus grup, pembelajaran dan penelitian lewat media online.
- Saya mengerti bahwa informasi yang saya berikan bersifat rahasia dan identitas saya tidak akan diberitahukan tanpa persetujuan saya.
- Saya mengerti bahwa informasi yang saya berikan hanya akan digunakan untuk keperluan penelitian ini dan saya juga mengerti bagaimana informasi ini akan digunakan.
- Saya mengerti bahwa saya memiliki kebebasan untuk mengundurkan diri dari kegiatan ini tanpa sangsi kapan saja
- Saya mendukung partisipasi saya dalam proyek ini dengan gembira.

Tanda Tangan: _____ Tanggal: _____

Kontak Informasi

Peneliti	Pembimbing	Research Ethic Officer
Eunice Ratna Sari esari@student.ecu.edu.au	Dr. Jeremy Pagram, j.pagram@ecu.edu.au Professor Dr. Cher Ping Lim, c.lim@ecu.edu.au	Edith Cowan University 100 Joondalup Drive Joondalup WA 6027 Phone: (061) (08) 6304 2170, Email: research.ethics@ecu.edu.au

Appendix 5.
ICT Survey (English)

Tick (√) the correct answer!

	Home		Office		Others		Type of Computer		
	Yes	**No**	**Yes**	**Tdk**	**Ya**	**Tdk**	**Desktop**	**Laptop**	**Others** (Pls mention)
Have a computer									
Have an Internet access									

Tipe Koneksi Internet	**Dial Up**	**Cable**	**ISDN**	**DSL**	**ADSL**	**Wi-Fi Hotspot**	**I don't know**
At home							
At workplace							
Others (please mention) …							

Length of Use	**Never**	**< 1 year**	**1-2 years**	**3-4 years**	**> 5 years**
Computer					
Internet					

	Learning	**Work**	**Communication**	**Entertainment**	**Others** (Pls mention)
Computer					
Internet					

Circle a box that is appropriate with your skills!

The Internet	Can't do much	Can navigate to known web sites Can do basic searches	Can use advanced Searches Can save images and text Can alter browser preferences	Can conduct complex searches Can download and install software and Plug ins Can use different Browsers
Email	Can't do much	Can create, send and access emails Can access Address book entries	Can store messages in Folders Can locate 'Sent' and 'Deleted' messages Can search for message Can add a Signature Can add attachments	Can create a mailing list, Can set up a discussion list.

Blog Ex: Live Journal, MSN Spaces, Blogger, Wordpress, CyWorld, Skyblog	Can't do much	Can read and post comments on other people's blog Can set-up own blog account	Can create a blog post Can attach an image, audio, video, link or a combination of them on the blog Can change and customise the setting of the blog Can maintain the blog content regularly Can use aggregator software to subscribe and manage feeds	Can create of works on blogs for others including friends, groups belonged to or workmates Can maintain the works on the blogs created for others Can develop various blog contents for specific purposes, such as education, business, advertising
Wiki Ex: Wikipedia, PBWiki, Writely, JotSpot, SocialText	Can't do much	Can search information on the wiki	Can enrich the content of the wiki by adding and removing some parts Can change the content of the wiki completely	Can create your own wiki for various purposes (business, education, entertainment, etc)
Podcasting (Audio and Music) Ex: iTunes, FeedBruner, iPodderX, WinAmp,@Podder	Can't do much	Can search, download and listen to podcast in your devices	Can use aggregator software, such as podcatcher or podcast receiver, to subscribe and manage feeds	Can create own podcast Can use podcasting for specific purposes, such as education, business, entertainment, etc
Social Networking Sites Ex: Myspace, Facebook, Friendster, Bebo, orkut, Cyworld	Can't do much	Can make a personal user account Can post personal information profiles Can search for friends and acquaintances Can comments on other people's site	Can customise the settings of the site Can write a blog/notes and share it with others Can upload, download and share video, audio, images, text, links Can do online chatting (text and/or video chatting) with friends Can send emails Can use add-on/plug-in applications in the social networking sites, such as online games, birthday cards, etc	Can create a web page with specific content for a specific purpose, such as education, business, entertainment, etc Can create, organise and maintain an online community in the site

			Can participate actively in online community, groups or bulletin board	
Online Community

Ex: Yahoogroup, googlegrou, ning, linkedin | Can't do much | Can register and participate in an online community

Can post comments on other people's posting

Can write a new topic and post it in the forum | Can organise and participate actively in an online activities

Can conduct collaboration with other members using online platform

Can customise the setting of the online community | Can create and maintain a community for a specific purpose, such as education, business and entertainment, etc

Can become an online communities administrator

Can facilitate active participation and collaboration of community members |
| Content or File Sharing Sites

Ex: Flickr, Digital media project, Youtube, Slideshare | Can't do much | Can browse and download pieces of artworks, photo, images, stories or videos belonged to others

Can post comments or feedbacks at other people's work | Can create own online space, such as albums

Can upload and share own files (images, presentation slides)

Can customise and change the settings of distribution

Can collaborate with other users to edit and share pieces of artwork, photo, stories or videos belonged to others | Can create own works from scratch, upload and share them online

Can use online files in collaboration with others for a specific purpose, ex: scientific discussion, education, business, etc |
| Online Shared Work Space | Can't do much | Can create a shared work space

Can invite others to join and participate in the online shared work space

Can exchange documents using online shared work space tools

Can download and open documents that are made by others | Can collaborate to add, change and alter the documents in the online shared workspace

Can create synchronous discussion with other members

Can create asynchronous discussion with other members

Can customise the setting of the shared workspace according to the needs | Can make a mailing list
Can create and share your online documents using the tools provided
Can utilise the shared workspace for a specific purpose, such as work, business, education, management etc |

Online Learning Envronment Ex: Moodle, WebCT, Blackboard	Can't do much	Can login to online learning environment Can read and follow the online assignment instructions	Can create a post and make comments in the discussion forum Can create, send reply emails for learning purposes Can participate in online collaboration with other members to solve some problems Can participate in online meeting	Can set-up and customise the online learning platform for organisational purposes

Appendix 6.
ICT Survey (Bahasa Indonesia)

Centang (√) jawaban yang sesuai!

	Rumah		Kantor		Tempat lain		Jenis Komputer		
	Ya	Tdk	Ya	Tdk	Ya	Tdk	Desktop	Laptop	Lainnya (Sebutkan)
Memiliki Komputer									
Memiliki Internet Akses									

Tipe Koneksi Internet	Dial Up	Cable	ISDN	DSL	ADSL	Wi-Fi Hotspot	Tidak Tahu
Di rumah							
Di tempat kerja							
Lainnya (sebutkan) …							

Lama Penggunaan	Tidak pernah	< 1 tahun	1-2 tahun	3-4 tahun	> 5 tahun
Komputer					
Internet					

Tujuan Penggunaan	Belajar	Pekerjaan	Komunikasi	Hiburan	Lainnya (Sebutkan)
Komputer					
Internet					

Lingkari bagian-bagian yang sesuai dengan kemampuan Anda!

Internet	Tidak tahu banyak	Bisa menavigasi ke website yang sudah dikenal	Bisa melakukan pencarian yang lebih kompleks	Bisa download dan install software dan plug-ins
		Bisa melakukan pencarian sederhana	Bisa menyimpan gambar dan tulisan	Bisa menggunakan berbagai macam browser
Email	Tidak tahu banyak	Bisa menulis, mengirim dan membuka email	Bisa menyimpan email di dalam folders	Bisa membuat Mailing list
		Bisa mengakses dan menggunakan Address Book	Bisa mencari email	Bisa membuat Discussion list.
			Bisa menambahkan signature di dalam email	
			Bisa mengirimkan attachment lewat email	

Blog Misalnya: LiveJournal, MSN Spaces, Blogger, Wordpress, CyWorld, Skyblog	Tidak tahu banyak	Bisa membaca dan memberikan masukan pada blog milik orang lain Bisa membuat akaun blog sendiri	Bisa menulis blog sendiri Bisa menaruh gambar, suara, video, link atau kombinasi dari semua di atas di dalam blog Bisa menggunakan perangkat lunak "aggregator" untuk berlanggganan mengatur feed dari blog	Bisa membuat blog untuk orang lain, group dan rekan kerja Bisa selalu memperbarui isi dari blog secara teratur Bisa membuat dan menggunakan blog untuk berbagai tujuan khusus, misalnya pendidikan and bisnis
Wiki Misalnya: Wikipedia, PBWiki, Writely	Tidak tahu banyak	Bisa mencari informasi di wiki	Bisa memperkaya wiki dengan menambah dan mengurangi isinya Bisa membuat wiki page yang baru	Bisa membuat dan menggunakan wiki untuk berbagai macam tujuan khusus, misalnya pendidikan and bisnis
Podcasting (Audio and Music) Misalnya: iTunes, FeedBruner, iPodderX, WinAmp,@Podder	Tidak tahu banyak	Bisa mencari, mendownload dan mendengarkan podcast	Bisa membuat podcast sendiri Bisa menaruh link mengenai podcast di dalam blog Bisa menggunakan perangkat lunak "aggregator untuk berlangganan dan mengatur feed	Bisa membuat dan menggunakan podcasting untuk berbagai macam tujuan khusus, misalnya pendidikan and bisnis
Social Networking Sites Misalnya: Facebook, Friendster, Myspace, Bebo, Orkut	Tidak tahu banyak	Bisa membuat akun personal Bisa menulis profil pribadi dan menambahkan keterangan lainnya Bisa mencari teman-teman dan kenalan Bisa menulis komentar pada halaman orang lain dan diri sendiri	Bisa menulis blog/notes Bisa mengupload foto, video, link, gambar, dsb Bisa mengubah setting sesuai dengan kebutuhan dan keinginan Bisa bergabung dan berpartisipasi dalam komunitas online	Bisa membuat komunitas online sendiri Bisa membuat dan menggunakan social networking sites untuk tujuan khusus, misalnya pendidikan and bisnis
Online Community Misalnya: yahoogroups, googlegroups, Ning, linkedin	Tidak tahu banyak	Bisa mencari komunitas online yang sesuai dengan kebutuhan dan ketertarikan Bisa mendaftarkan diri dan bergabung	Bisa memulai topik diskusi baru di dalam komunitas online Bisa menulis pesan dan memberikan komentar atas pesan orang lain	Bisa menggunakan komunitas online untuk kebutuhan khusus, misalnya pendidikan dan bisnis Bisa menciptakan dan mengurus komunitas online sendiri

		Bisa berpartisipasi aktif dalam kegiatan-kegiatan komunitas online		
Content or File Sharing Sites Misalnya: Flickr, Youtube, Slideshare	Tidak tahu banyak	Bisa mencari dan mendownload foto, gambar, cerita, presentation dan video hasil karya orang lain Bisa memberikan komentar atau masukan untuk hasil karya orang lain	Bisa membuat ruang khusus untuk membagikan foto, gambar, cerita pribadi secara online	Bisa menciptakan hasil karya sendiri dan membagikannya secara online Bisa menggunakan file sharing sites untuk kebutuhan khusus, misalnya pendidikan atau bisnis
Online Learning Environment Misalnya. Moodle, WebCT, Blackboard	Tidak tahu banyak	Bisa login di online learning environment Bisa mencari dan mengikuti instruksi yang diberikan oleh pengajar lewat online learning environment	Bisa menulis, mengirim pesan lewat email, Threaded Discussion, Bulletin board, etc Bisa menggunakan online collaboration tools untuk bekerja sama dengan rekan kerja Bisa berpartisipasi di dalam online meeting	Bisa menjadi fasilitator dalam online learning environment Bisa memakai dan menyesuiakan online learning platform untuk kebutuhan khusus dari organisasi saya

Appendix 7.
Open-ended Interview Questions (1)

1. Apakah tujuan professional Anda sebagai guru? *(What is your professional goal as a teacher?)*

2. Upaya apa saja yang Anda sudah lakukan untuk mengembangkan kemampuan professional Anda sebagai guru? *(What kinds of professional development efforts have you done to improve your professional competencies as a teacher?)*

3. Bagaimanakah sekolah Anda dalam mendukung pengembangan profesi Anda sebagai guru? *(What is the role of your school in support your professional development?)*

4. Bagaimanakan menurut Anda Pemerintah sudah mendukung Anda dan sekolah Anda dalam usaha pengembangan profesi guru? *(How do you think the government has supported you in developing your professional competencies?)*

5. Hambatan-hambatan apa sajakah yang Anda hadapi dalam usaha pengembangan profesi Anda? *(What kinds of challenges do you face in developing your professional competencies?*

6. Bagaimanakah peran rekan kerja dalam mendukung usaha pengembangan profesi Anda sebagai guru? *(How do your colleagues support you in your professional development?)*

7. Apakah Anda menggunakan TIK untuk membantu pengembangan profesi Anda sebagai guru? *(How have you used ICT in supporting your professional development?)*

Appendix 8.
Open-ended Interview Questions (2)

This second open-ended interview questions was inspired by the Experience of Change method developed by the University of Cambridge, Institute of Education (Ainscow et al., 1994). This method was developed to measure individual teachers, because success of many change initiatives remains attributable to the commitment of individual teachers. Any change on student learning outcomes is the result of teacher behaviour in the classroom (Ainscow et al., 1994).

Experience of Change technique taps the feelings that the participants have about a specific change. The participants will review a series of 24 cards containing a range of feelings, such as comfortable, worried and anxious, and then select those that best reflect their feeling about the change, which may lead to a fuller discussion or interview. Feelings about change are very difficulty to uncover during conventional interviews. This technique legitimates participants talking openly about their feelings but without forcing any particular words into their mouth.

In this study, the researcher uses 24 cards and the frequency board to conduct one-to-one discussion and group discussion. The discussion was transcribed, but not analysed as the Experience of Change method. The cards and the board were very useful to start an engaging discussion with the teachers and teacher educators. By using this technique, I aimed to get in-depth feedback from the participants about their feeling and experience in a using OLC4TPD as a new TPD model. The discussions were transcribed, but they were not counted using the EoC technique because of the limited number of participants and sessions we had. There were only two teacher educators participating in two one-to-one discussion session and six teachers in one group discussion. The discussions were transcribed and analysed qualitatively.
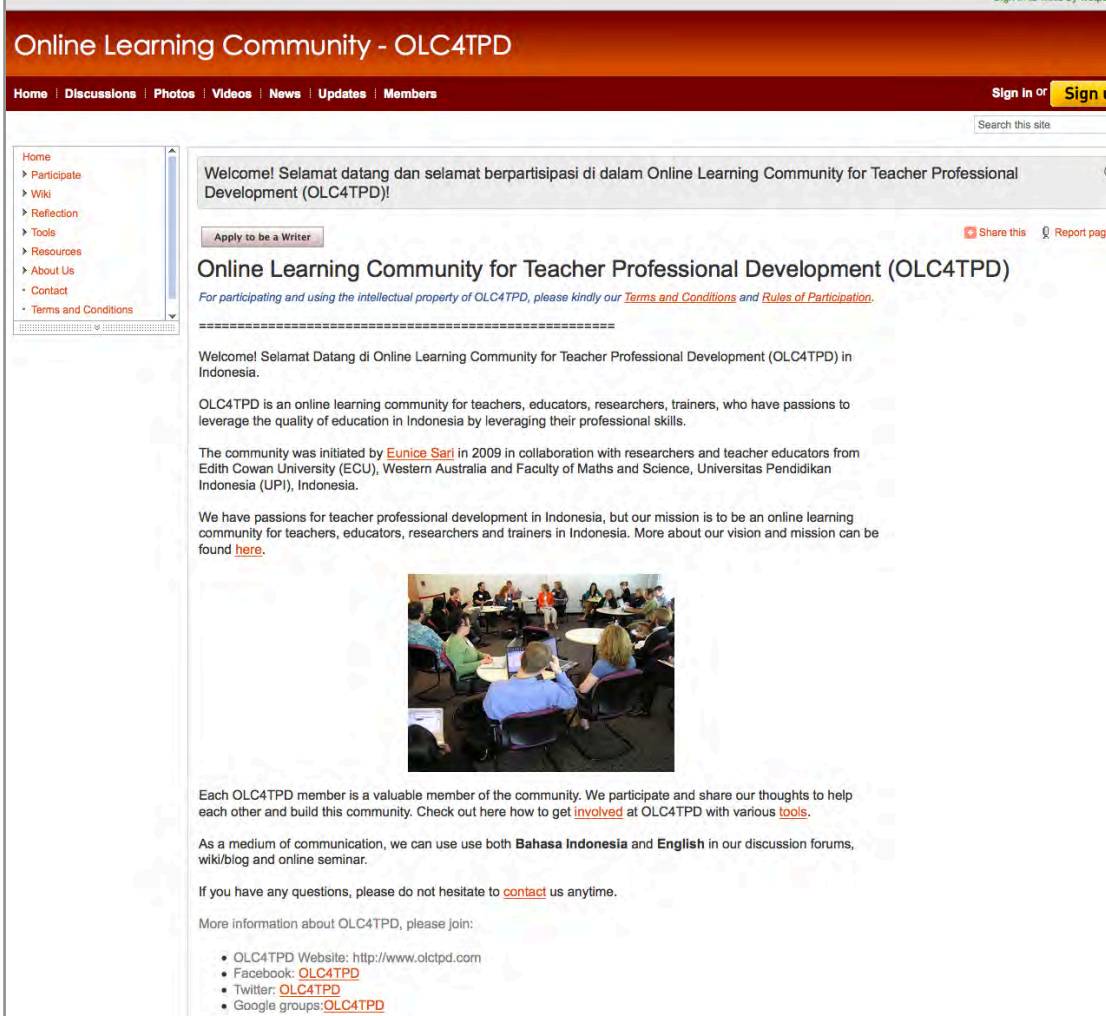
Questions

What do you think about OLC4TPD for your professional development?

Committed *Berdedikasi*	Enthusiastic *Semangat*	Exhilarated *Sangat Gembira*	Optimistic *Percaya Diri*
Confident *Percaya Diri*	Stimulated *Terpicu*	Supported Terdukung	Valued *Berharga*
Comfortable *Nyaman*	Pleased *Gembira*	Interested *Tertarik*	Satisfied *Puas*
Worried *Kuatir*	Confused *Bingung*	Disappointed *Kecewa*	Irritated *Jengkel*
Anxious Cemas	Bored *Bosan*	Cynical *Sinis*	Sad *Sedih*
Angry *Marah*	Frustrated *Frustasi*	Isolated *Terisolasi*	Pressurised *Tertekan*

A. Often *Sering*	**B. Sometimes** *Kadang-kadang*
C. Hardly Ever *Hampir Tidak Pernah*	**D. Doesn't seem relevant** *Kelihatannya Tidak Sesuai*

Appendix 9.
OLC4TPD Web Portal

Figure 19. OLC4TPD Web Portal

Appendix 10.
OLC4TPD Web Portal Discussion Forum

Figure 20. Three categories of discussion forum at Web Portal

Figure 21. Examples of discussion threads at the Web Portal Discussion Forum

Appendix 11.
OLC4TPD Facebook

Figure 22. Social learning interaction in OLC4TPD Facebook

Appendix 12.
OLC4TPD Skype Online Meeting

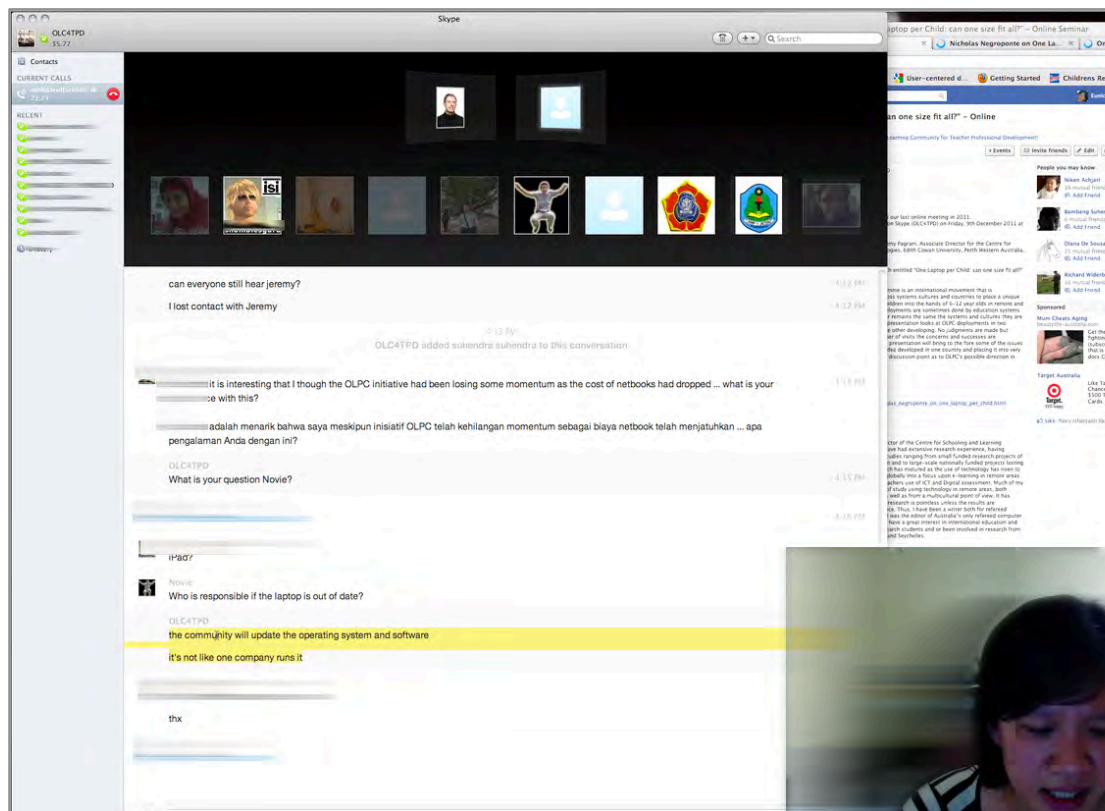*Figure 23*. Blended meeting during synchronous online meeting using Skype

Figure 24. Regular online meeting on Skype

Appendix 13.
Photos of TPD Practices in Indonesia

Figure 25. Typical TPD practices in Indonesia
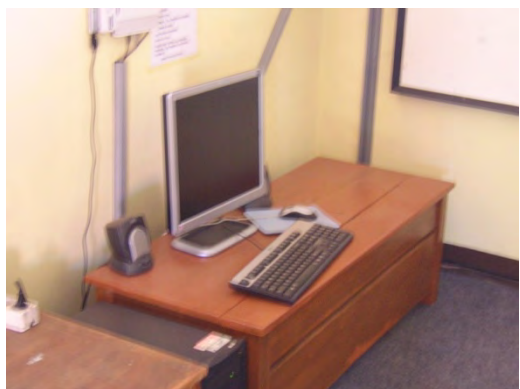

Figure 26. ICT facilities in a secondary
school in West Java

Figure 27. ICT facilities in a teacher-training
institute in West Java

Figure 28. Collaborative TPD model (Lesson Study) practiced in West Java schools

Appendix 14.
OLC4TPD Meeting Schedules 2009-2011

Date	Hotseat Speaker	Country	Discussion Topics
11-Sep-09	Eunice Sari	AU	Introduction to OLC4TPD
13-Nov-09	Asep Sapa'at	ID	Active Learning
4-Dec-09	Duden Saepuzaman	ID	Teaching at International School
14-Dec-09	Alistair Campbell	AU	Digital Assessment
11-Jan-10	Dr Silvia Torezani	AU	Writing and Teachers' Professionalism
29-Jan-10	Assoc Prof Paul Newhouse	AU	Authentic Assessment & ICT
12-Feb-10	Dr Martin Cooper	AU	ICT Integration @ Primary School in AU
19-Feb-10	Associate Prof Paul Newhouse/Asep Sapa'at	AU/ID	Authentic Assessment and ICT – Australian and Indonesian Education Perspectives
5-Mar-10	Eunice Sari	AU	Mobile Learning and Authentic Learning
12-Mar-10	Tatang Soeratno	ID	Substantive Lesson of Lesson Study
19-Mar-10	Dr Asep Kadarohman	ID	Pendidikan Guru di Jepang
26-Mar-10	Sirdjanul Ghufron	ID	Getting Students to Learn
9-Apr-10	OLC4TPD Members	ID	Developing Effective Lesson Plans
23-Apr-10	Su Juan	CN	Intercultural Issues in Teaching and Learning
7-May-10	Linda Qu	CN	Your culture, my classroom, whose pedagogy
21-May-10	Dr Sumar Hendayana	ID	Indonesian Lesson Study: Lesson Learnt and Challenges
4-Jun-10	Riandi	ID	Video-based coaching
25-Jun-10	Dr Silvia Torezani	AU	Avoid Unintentional Plagiarism
7-Aug-10	Eunice Sari	AU	OLC4TPD and Teacher Professional Development
9-Aug-10	Eunice Sari	AU	Australia Primary and Secondary Education
20-Aug-10	Asep Sapa'at	ID	Students' Scientific Projects
3-Sep-10	Sofwan Gozali	ID	Lesson Study and Teacher Professional Development
17-Sep-10	Sofwan Gozali	ID	Lesson Study and Teacher Professional Development
1-Oct-10	Dr John O'Rourke	AU	Including All Students in Secondary Classroom
15-Oct-10	Asep Sapa'at/Eunice	ID	Rural-based community quality education

16-Oct-10	Eunice Sari	AU	Introduction Familiarisation with Web and Tool
12-Nov-10	Agung WH/Eunice	ID	Teacher Character Development
18-Nov-10	Gail Taylor	AU	Adoption WA Curriculum
17-Dec-10	Titin Setyorini	ID	Pre-Service Teacher Recruitment
21-Jan-11	Margaret Davies	PH	International Baccalaureate Curriculum
4-Mar-11	Nunuk Karyati	ID	International-standard School
1-Apr-11	Dr Michael Nott	AU	Blog - Social networking
29-Apr-11	Tati Setiawati/ Sofwan Gozali	ID	School-based Lesson Study
27-May-11	Brenda Hamlet	AU	Math for Primary Teachers
24-Jun-11	Muhammad Nurul Hanna	ID	Chemistry and ICT
15-Jul-11	Harun Imansyah	ID	Lesson Study Indonesia
12-Aug-11	Belinda Nelson	AU	Society Environment Study
9-Sep-11	Sirdjanul Ghufron	ID	Teaching and Learning
7-Oct-11	Jeremy Pagram	AU	ICT and Learning
4-Nov-11	Dr Michael Hartley	AU	Fun Mathematics
7-Dec-11	Dr Jeremy Pagram	AU	One Laptop Per Child

Appendix 15.
List of Related Publications, Presentations and Award

<div align="center">

Publications

</div>

Sari, E., & Lim, C. P. (2012). Online learning community: Building the professional capacity of Indonesian teachers. In J. Jia (Eds.), *Educational stages and interactive learning: from kindergarten to workplace training* (pp.451-467). Hershey, PA: Information Science Reference..

Sari, E. R. (2012). Online Learning Community (OLC): A case study of teacher professional development in Indonesia. *Intercultural Education, 23*(1). February 2012, 63-72.

Sari, E., & Lim, C. P. (2012). Design-based research: Understanding its application in a teacher professional development study in Indonesia. *The Asia-Pacific Education Researcher, 21*(1), 28-38.

Sari, E., Lim, C. P., & Pagram, J. (2010). Professional knowledge building in Online Learning Community (OLC): Embracing the unknown future. In C. Steel, M. J. Keppell, P. Gerbic & S. Housego (Eds.), Curriculum, technology & transformation for an unknown future. *Proceedings ascilite Sydney 2010* (pp. 864-868). Australian Society for Computers in Learning in Tertiary Education.

Sari, E. and Tedjasaputra, A. (2010). Collaborative learning among Australasian educators through online learning community (OLC). In C. H. Steel, M. J. Keppell, P. Gerbic & S. Housego (Eds.), *Curriculum, technology &*

transformation for an unknown future (pp. 869-871). Sydney: Ascilite 2010 Sydney.

Sari, E. R. (2010, August). *Supporting in-service teacher professional development practice in Indonesia with online learning community.* Proceeding of National Symposium of Research and Innovation in Education. Jakarta, Indonesia: Depdiknas.

Sari, E. (2010, July). *Enhancing professional development of educators with online learning community: A case study in Indonesia.* Proceedings of ICT 2010 Conference, UNISIM, Singapore.

Sari, E. R. (2011). Foreword (Preface). In Sapa'at, A. (2011). *Membumikan pendidikan karakter*. Bogor, Indonesia: LPI Dompet Dhuafa.

Conferences, Workshops and Seminars

Sari, E. R and Sapa'at, A. (2011, November). *Community-based teacher professional development in Indonesia*. Paper presented at the WALS 2011 Conference, Japan, 27 November 2011. Retrieved June 1, 2012, from http://www.wals2011.com/program.html#sessionA

Sari, E. R and Sapa'at, A. (2011, May). *Community-based teacher professional development in Indonesia*. Paper presented the 16th International Conference on Education, Brunei Darussalam.

Sari, E. R., Lim, C. P., Hendayana, S., Kadarohman, A. (2010, December). Collaborative and reflective teacher professional learning through online learning community. Paper presented at the 2nd East Asian International

(EAI) Conference on Teacher Education Research, Institute of Education, Hongkong. Retrieved June 1, 2012, from www.ied.edu.hk/eai-conference2010/download/Parallel_Session_Day1.pdf

Sari, E. R. (2010, November). *Online Learning Community for Teacher Professional Learning.* PiBT Edith Cowan University, Perth, Western Australia, November.

Sari, E. R. (2010, September). *Designing online learning community for teacher professional development in Indonesia*. The Postgraduate Research Colloquium, Edith Cowan University, Perth, Western Australia, September

Sari, E. R. (2010, September). *Educating teachers in Indonesia through online learning community*. The Postgraduate Project Pitch Show, CAPA Roadshow 2010. Edith Cowan University, Perth, Western Australia.

Sari, E. R. (2010, August). *OLC4TPD: Supporting teacher professional development in Indonesia*. The Three-Minute Thesis Competition. Edith Cowan University, Perth Western Australia

Sari, E. R. (2010, August). *OLC: Supporting in-service teacher professional development*. Plenary The 3rd International Conference on Lesson Study. Bandung, Central Java, Indonesia.

Sari, E. R. (2009, September). *Designing Online Learning Community for Teacher Professional Development in Indonesia*. The Postgraduate Research Colloquium, Edith Cowan University, Perth, Western Australia.

Sari, E. R. (2009, August). *Online Learning Community for Teacher Professional Development in Indonesia*. The 2nd International Conference on Lesson Study. Bandung, Central Java, Indonesia.

Award

2010, September. Special Commendation for Vice-Chancellor Student Award for

Community Engagement, Edith Cowan University, Perth, Western,

Australia