



Professional knowledge building in Online Learning Community (OLC): Embracing the unknown future

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This paper discusses a number of elements of the knowledge building process that were evident amongst educators in Indonesia. These educators took part in the discussion board of an online learning community, called OLC4TPD (Online Learning Community for Teacher Professional Development). OLC4TPD is an OLC-based professional learning case study developed at Edith Cowan University to investigate the feasibility of an OLC-based model to support ongoing professional training of educators in Indonesia. Starting by examining the current professional challenges faced by the teachers in their professional work, the paper talks about the potential of the OLC-based model to provide ongoing support for teachers. It examines in detail one particular aspect of the learning interactions amongst the main stakeholders of the project that is that between teachers and teacher educators. Inspired by Scardamalia's Twelve Socio-Cognitive Determinants of Knowledge, the authors examined the discourses generated on the Discussion board during the period of 2009 – 2010 using qualitative and quantitative analyses. The paper reports the preliminary findings of the study, including the challenges and future works to be done on this project.

Keywords: online learning community, teacher professional learning, knowledge building

Background

There has been an escalating expectation for teachers to ensure that their students meet high standards of performance in learning. With the advancement of Information Communication Technology (ICT), students are often used to having different ways of learning. These changes often require teachers to work more intensively and engage in ongoing collaboration with other practitioners in order to respond effectively to the challenges. This collaboration enables teachers to connect with their community of practice and widens the possibilities for them to update their professional knowledge and skills.

However, in many cases in the traditional professional learning activities in education the emphasis is more on “directive” (Scott and Scott, 2010) and prescriptive information dissemination than interactive and active collaboration. Putnam and Borko (2006) explained that teachers are unlikely change their way of thinking that has been shaped in the system unless they have the opportunity to interact with other colleagues and experts in a professional community.

In Indonesia, the practice of teacher professional development is facing similar challenges. The

programs are normally organized as a one-shot training activity using a top-down, directive, prescriptive and general dissemination method. Several factors that influence the situation include the large number of teachers to be trained, the shortage of teacher educators and teacher institutes, and dispersed geographical locations. At least 66% of the 2.7 million practicing teachers in Indonesia are under qualified (Pannen, Riyanti and Pramuki, 2007), yet there is an insufficient number of teacher educators and teacher institutes. Furthermore, the teachers work in dispersed geographical locations in the biggest archipelago in the world, which often makes it difficult for them to attend regular or on-campus professional training activities.

Several studies have suggested that there should be a shift in the practice of conventional teacher professional development to prepare teachers in answering challenges induced by the expectations of the knowledge society (Cuban, 2001; Lock, 2006; Solomon & Schrum, 2007). Online Learning Community (OLC) is suggested as one of the more viable solutions to tackle the challenges of teacher professional development practice in Indonesia.

The Online Learning Community was inspired by the concept of Community of Practice developed by Lave and Wenger (1991). A number of studies suggested that an OLC provides a sustainable support for teachers (Barab, Makinster, Moore & Cunningham, 2001; Dede, 2000; Lock, 2006). The OLC members are encouraged to engage in collaboration to achieve a common goal, in this case is to develop professional knowledge and skills. The learning process supported by the OLC is ongoing, on-demand, situated, collaborative and self-motivated.

The development and implementation of the OLC was aimed to tackle the challenges of teacher professional development in Indonesia. The authors envisioned that OLC-based professional learning model would bring together educational practitioners in a collaborative and ongoing professional learning process across the archipelago.

Theoretical framework

Stahl (2000) suggested that knowledge building is one of the most important indicators in an online collaborative environment. OLC, as a proposed professional learning framework for teachers in Indonesia, looks at how teachers and other educational practitioners can build their knowledge collaboratively through an online community. Previous studies show that, there are several factors that influence knowledge building in online collaborative learning environments (Stahl, 2000, Scardamalia, 2002). Based on Scardamalia's (2002) Twelve Socio-Cognitive Determinants of Knowledge Building, the authors analyzed the discourse in the discussion board and synchronous online meetings.

The Twelve Socio-Cognitive Determinants of Knowledge Building determinants are elaborated as follows:

- real ideas and authentic problems (KB1)
- improvable ideas (KB2)
- idea diversity (KB3)
- rise above (KB4)
- epistemic agency (KB5)
- community knowledge (KB6)
- collective responsibility (KB7), democratizing (KB7)
- symmetric knowledge advancement (KB8)
- pervasive knowledge building (KB9)
- constructive users of authoritative sources (KB10)
- knowledge building discourse (KB11)
- concurrent, embedded transformative assessment (KB12).

In this paper, the authors discuss the knowledge building process that has occurred through the discussion board. While the use of a discussion board has already been used in a number of previous studies online learning, the use of this tool for engaging educators in a professional knowledge building in Indonesia has been not explored. The discussion board is the first online tool used to engage the community members in knowledge building.

Findings and discussion

From October 2009 to May 2010, there were 16 from 104 members (15.4%), who had been participating actively on the OLC4TPD discussion board. From interview data, the main reasons for a lack of participation were due to English language barriers, and differences in learning styles. Several members mentioned that they were not comfortable when the discussion was conducted in English, because they did not feel confident to write in English.

The participants' learning style is a paradigm that cannot be changed easily. In a strong collectivist country (Hoftse, 2004) like Indonesia, people are used to receiving information and knowledge from their teachers rather than actively initiating a discussion and questioning other people's ideas. A teacher is considered a role model, and people would not easily tolerate it if he/she makes mistakes. This culture often causes a lot of hesitations when a teacher or a teacher educator tries to develop new ideas on the Discussion Forum. They did not want to look incompetent when they wrote something of which they were still unsure. They felt that everything published on the public forum should be "perfect".

While the number of participants was limited, the authors found that in the later stages of the study, these initial participants helped build the sense of belonging to the community and led to a deeper process of the knowledge building.

During the period between October 2009 and May 2010, there were 6 female (5.8%) and 10 male (9.6%) active participants on the Discussion board. In total, both, participants and moderators made 181 postings. 83 postings came from the male participants and 15 from female participants, while the rest were from the moderator. 38 postings came from the male teachers, 33 from male educators and 12 from male school leaders. From the female participants, teachers made six contributions and the teacher educators made nine contributions (see Figure 1). From the number of participants, only 15.4% of them have participated in the discussion. The male participants posted more entries in the Discussion board compared to female participants; however, their overall participation was only 54% of the total number of postings. There were more contributions from the male teachers compared to teacher educators, while there was less of a contribution from the female teachers compared to female teacher educators (See Table 1).

Table 1: Ratio of member contributions OLC4TPD (Oct 2009 – 2010)

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

Using lenses borrowed from Scardamalia's Collective Cognitive Responsibility (2002), the authors found that from the 181 postings, the most common category from the postings was KB1 (*Real Ideas, Authentic Problems*) and second highest was KB3 (*Idea Diversity*). On the other hand, the least categories with no postings were KB9 (*Pervasive Knowledge Building*) and KB12 (*Embedded and Transformative Assessment*). KB2 (*Improvable Ideas*) and KB5 (*Epistemic Agency*) made the 3rd and 4th places consecutively from the top, while KB10 (*Constructive Uses of Authoritative Sources*) and KB11 (*Knowledge building discourse*) made the 3rd and 4th places consecutively from the bottom (See Figure 1).

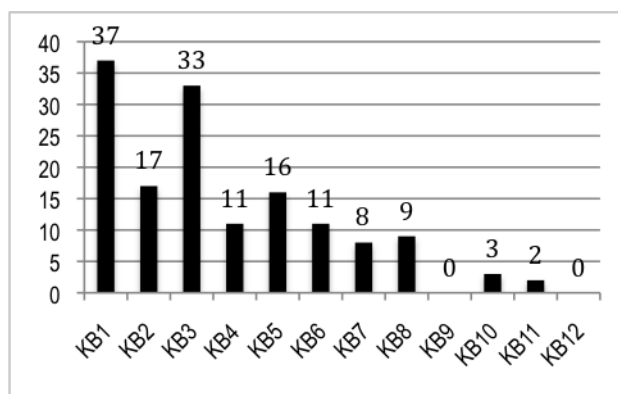


Figure 1: Discourse Categorization into 12 Elements

When looking deeper into user profiles, the most contribution made by teacher educators was KB3 (*Idea Diversity*), while for teachers were KB1 (*Real Ideas, Authentic Problems*). The next significant contributions of teacher educators were the KB1 (*Real Ideas, Authentic Problems*) and then followed by the KB5 (*Epistemic Agency*). From teachers' side, the 2nd and 3rd highest contribution were made on the categories of KB2 (*Improvable Ideas*) and KB 3 (*Idea Diversity*) consecutively. School leaders made their highest contribution on KB5 (*Epistemic Agency*) and only one of them made KB10 (*Constructive uses of authoritative sources*) contributions.

From these preliminary findings, the authors believe that the teachers' place in the knowledge building process was to discuss and share their experiences (KB1). They always looked for answers to their questions and solutions for their problems. On the other hand, the teacher educators engaged more in providing various ideas and feedback (KB3) that were useful for the teachers based on real-life examples (KB1). The teachers usually responded more positively to postings containing real ideas and authentic problems, as they assumed that hands-on knowledge were needed for improving professional skills. Below is an example, where teachers are searching for ideas to improve their practice and how others offer various suggestions based on authentic experience.

Post 1. by Primary Teacher (ARG) – KB1, KB2

I have been developing an educational game on my blog (*name of blog is erased*) I need any suggestions how to design it so my students like to play it whenever they are.

Post 2. by Secondary Teacher (AWH) – KB1, KB2, KB3

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 ya, to motivate them to open the blog often and play your game, give them rewards, such as: write the name of those visit the blog often as the “Top Visitor”. Thanks.

The school leaders' posting is interesting as well, as leaders in a collectivist environment (Hofstede, 1994) often exercised similar roles in the online environment. They always tried to provide answers to most of the problems and often supply information from authoritative resources (KB10). Most of the time, they tried to make a strong stance of their thoughts (KB5) through negotiation with other members.

Conclusion and future works

This paper examined the tip of the iceberg of the knowledge building occurred in the OLC4TPD Discussion board. The findings suggest that there has been a significant move from conventional ways of professional learning to an Online Learning Community (OLC)-based model using asynchronous online discussion. The limited numbers of the contributors in the Discussion board are mainly caused by socio-cultural and time factors. These initial contributions at the Discussion board have lead to a deeper engagement in the OLC4TPD, which we will discuss in a later publication. Scardamalia's Twelve Socio-Cognitive Determinants of Knowledge Building has given insights about different

elements of the knowledge building processes that happened in the OLC4TPD Discussion board, which suggests the model, outcome and impact for educational practitioners in Indonesia. The preliminary results suggested that the Discussion board has a great possibility to support professional learning in Indonesia. It needs to be improved, however, with regards to delivering the lessons, strategies of using the tool and engaging other community members. Consideration of socio-cultural issues, such as Hofstede's Cultural Dimensions (1994), helps a lot to build a better online learning community for professional development.

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