

Lesson Study as Practice: An Indonesian Elementary School Experience

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This paper describes the “practice architectures” and “ecologies of practice” of LS (lesson study) in an Indonesian private elementary school. It aims at drawing on LS as a form of professional learning from the perspective of contemporary practice theory (Kemmis, Wilkinson, Hardy, & Edwards-Groves, 2009; Kemmis, 2009a, 2009b). This case study discusses the distinctive features of LS as social practice at that school. Firstly, the author highlights the context of LS activity (January-June, 2010), as a part of School Improvement Program, which aims to develop participating teachers’ capacities, i.e., teacher learning, by studying the nature of teaching and learning processes. Aligned with school’s vision to develop a learning community, the program developed three main activities: (1) Leadership for Learning workshop that focused on exploring the nature of learning and teaching and the role of teacher in LS practice; (2) LS workshops that involved a “Plan-Do-See” cycle for designing, implementing, and reflecting upon teaching and learning activities; and (3) School Forum in which the participants shared experiences with other fellow teachers. Data were collected through focused group discussion, field observation, and document study. Secondly, the author discusses the practice architecture to describe distinctive “sayings”, “doings”, and “relatings” characteristics of LS practice in terms of interconnected “meta-practices” of learning community, leadership, and teacher learning. Finally, the paper argues, following Kemmis’ works, that those meta-practices are mutually interdependent within ecologies of LS practice, which influence and are influenced by each other.

Keywords: LS (lesson study), practice architecture, ecology of practice, learning community, elementary school

Introduction

LS (lesson study), as an approach to teacher’s professional development, has been introduced to Indonesian educators for almost a decade. A team of Japanese experts work collaboratively with institutional partners, including ministry of education offices, local education offices, universities, and schools, to develop, implement, and evaluate the practice of LS (Hendayana, 2010).

In Indonesian context, LS is defined as a model of professional development for educators by studying teaching and learning activities collaboratively and continually, based on the principles of collegiality and mutual learning to develop a learning community among educators (Hendayana et al., 2007; Suratno & Cock, 2009). Therefore, LS is also a process by which teachers and teacher educators work together to improve the quality of classroom practice critically through a planning (Plan), implementation and observation (Do), and

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reflection (See) cycle for lesson designing and delivery (Suratno & Cock, 2009). In addition, LS can be implemented by means of subject teacher groups' level (e.g., science teacher groups' LS) and school's level (whole school LS involving all subject teachers). Currently, LS in Indonesia is gaining its popularity and is spreading from its original sites (Suratno & Cock, 2009; Hendayana, 2010). This paper highlights one of its initial experiences of LS practice in a private elementary school in Indonesia.

While a considerable number of researches have been written concerning how to develop teacher capacities and collaboration to develop an engaging lesson through LS, there have been limited attempts to theorize about such practice in a detailed theory of practice. In the sense of professional development studies, literature review shows that there are many researches that differentiate the mode of professional learning (Hawley & Valli, 1999) and the extended research on learning occurring in what-so-called professional learning community (Cochran-Smith & Lytle, 2004). The author argues that those types of researches are prescriptive in their orientation and need additional insights by viewing teachers' learning from practice theory perspective (Kemmis, Wilkinson, Hardy, & Edwards-Groves, 2009; Kemmis, 2009a, 2009b), which still has a scant regard.

This study draws upon data collected in a case study of manifestation of school improvement initiative in a private elementary school in Jakarta, Indonesia. The school conducts LS as a professional learning approach (Suratno, 2010). Thus, this paper aims to describe how the notion of practice may be illustrated to explain the reason why LS as a professional learning approach exhibits certain characteristics at given sites of implementation.

The author argues that LS as a form of professional practice is manifested in particular social sites which involve particular participants and their influential roles to achieve particular purposes. The interest in studying the practice of LS is based on the notion that professional learning should focus on studying the very aspects of practices (Ball & Cohen, 1999). Thus, it is aimed at studying the practice of particular practices and how such practices change and improve the very basic practices of education, from policy-making to teaching and learning (Kemmis et al., 2009).

By using Kemmis' (2009c) ideas of practice research, the author identifies two important stances of LS as practice. The first one is LS as practice-based practice of professional learning. This idea considers LS practices have particular "practice architectures", the changing "practitioners' practice" ("doings"), "their understanding of their practice" ("thinkings/sayings"), and "the conditions in which they practice" ("relatings") (Kemmis, 2009c, p. 463). The second one is the LS as practice-changing practice (Kemmis, 2009c, p. 464), which relates to what-so-called as "ecologies of practice". One would view such ecologies as living things in which LS practices shape and are shaped by other practices called "meta-practices", such as teaching, learning, and leadership (Kemmis et al., 2009; Kemmis, 2009b).

This paper focuses on those two issues by describing initial observation of LS practices in the context of "School Improvement Program: A LS Approach", hereafter called SIP-LS program. By using interpretative approach to the data gathered through focused group discussion, field observation, and document study, the author aims to explain: (1) What are distinctive features of practice architectures of LS (i.e., the sayings, doings, and relatings)? and (2) How LS practices shape and are shaped by other practices (i.e., teaching, learning, and leadership)?

The Context of LS Practice: SIP-LS in an Indonesian Elementary School

The school is a private elementary school located in urban area of central Jakarta, the capital of Indonesia. Founded about 150 years ago, the school still exists among other progressively developing schools. One of the key school features is its vision that is to build a critical, creative, and innovative learning community. School vision, as a strategy used by the learning community, involves not only the learning process of student, but also teacher's learning and school's learning as the system (Knapp, Copland, Ford, Markholt, McLaughlin, Milliken, & Talbert, 2003). This paper describes current effort implemented by the school in enacting its vision through a program called SIP-LS (Suratno, 2010). The program started from January to June, 2010, and involved seven participating teachers.

SIP-LS was developed by means of current development in teaching and learning literatures (Bransford, Brown, & Cocking, 2000) and in the area of LS development, particularly in Asian countries and specifically in the Indonesian setting (Hendayana et al., 2007; Suratno & Cock, 2009). As Stigler and Hiebert (1999) stated that teaching was a culture and so was the learning process of the teacher. Therefore, a professional learning approach should represent the notion of teaching and learning of the teacher, as cultural activities that are closely related to daily practical work of teacher by means of: (1) school-based approach or work-based approach; (2) collaboration and collegiality form of relation; (3) focus on the needs of student learning and how to provide learning situation for diverse learners; (4) analysis of curriculum, and teaching and learning practices; and (5) long-term orientation (Darling-Hammond & Sykes, 1999; Loucks-Horsley, Hewson, Love, & Stiles, 1998).

The program aimed at designing teacher's learning situation to improve participating teachers' capacities, i.e., learning and leadership, through the nature of teaching and learning processes. The program developed several activities: (1) Leadership for Learning workshop that focused on exploring the nature of learning, teaching, and leadership of teacher; (2) LS workshops that involved a "Plan-Do-See" cycles for designing, implementing, and reflecting upon teaching and learning activities; and (3) School Forum in which the LS team shared experiences with other fellow teachers (Suratno, 2010).

Within a learning community, there exist numerous dimensions: relation, agency, content, problem, and context. In the leadership for learning workshop, participating teachers discussed those dimensions. Agreed norms are needed to develop the context of teacher's learning. During the workshop, participating teachers discussed and agreed upon the following norms: (1) collegiality: to value diverse experiences and expertise of participating teachers; (2) focus: to focus on students; learning and how to develop an effective learning and avoid criticizing teacher's teaching; (3) vision of effective teacher and teaching; (4) individual and collective improvement; and (5) valuable ethics and polite behavior during discussion (Suratno, 2010). The agreed norms were important, as they had formed the context of teacher's learning through LS implementation.

The triangle of learning situations, i.e., student-teacher-system learning, demand strong leadership to be put in practice. To articulate this leadership into LS activities, the participating teachers identified several roles they had to play, namely: (1) coordinator of the LS team; (2) moderator of LS meeting/discussion; (3) model teacher—a teacher who is appointed to implement the planned lesson; and (4) observers who observe the teaching and learning processes, take notes, and collect documents and data of the classroom activities. The participating teachers agreed that those roles promoted teacher's leadership in the area of responsibilities:

coordination, collaboration, and consolidation of the teaching and learning activities. The identified roles and responsibilities represent the determined relation within the LS team (Suratno, 2010).

During the program implementation, the team conducted two LS cycles. Plan phase was done once, while Do-See phases twice. The later was carried out twice to provide an opportunity for revision after the first open lesson had been done. The team discussed and prepared the tools to be used and those would enable participating teachers to understand the substantive aspects of LS, i.e., teacher's thinking. In what follows, the author highlights each implemented phase and focuses on the tools used, respectively.

During Plan phase, the discussion focused on designing teaching sequences based on the identification of students' needs and learning styles, as well as the conceptual structure of content to be taught. The team used the "CoRe" (content representation) framework for analyzing PCK (pedagogical content knowledge) developed by Loughran, Berry, and Mulhal (2006) at Monash University. The team also adopted the lesson design commonly used by Japanese teachers (Suratno, 2010). Both tools were used to develop two important aspects: teaching sequences and student learning trajectories.

Do-See phases consisted of three activities: (1) briefing (pre-class discussion); (2) open lesson (classroom observation); and (3) debriefing (post-class discussion/reflection). Do-See phases were led by a moderator who designed the flow of the discussion. In briefing, the moderator started the session and explained the focus and guideline for the classroom observation. Then, the model teacher was given an opportunity to explain his/her teaching sequences and share the prediction over his/her student's response, the teaching materials used, and the ultimate goal of the lesson.

During observation and reflection sessions, the team followed the guiding questions as follows: (1) How does student respond to the problems? (2) Are there any students who find difficulties in understanding the problem and the concept being taught? (3) Do worksheet, group discussion and other activities enable and engage student to learn? (4) Do planned prediction and anticipation emerge? Are there any changes made by teacher and why? and (5) Is the learning goal achieved? Does the lesson run effectively? Those guiding questions were developed to dig into a broader context of teaching and learning practices. The result provided evidence used subsequently for analyzing problems and formulating alternative solutions. Meanwhile, the teacher reflection was developed under the following principles to: (1) build a self-reflection mechanism; (2) identify the problems found in the class observation; (3) focus on the factual observation based analysis; and (4) emphasize the lessons learned and to find alternative solutions.

The guiding questions were initially used to measure the overall processes of teaching and learning, but they were too general. Therefore, the following Do-See practices applied the chronological observation. The open lesson was observed in a chronological way. The guiding questions were integrated into teaching sequences step by step. Then, the reflection was conducted in the similar structure. The emerging approach of chronological observation and reflection enabled participating teachers to frame and reframe problems of students' learning and to formulate alternative solution.

Seeing the analysis and the content of teacher's reflection, the author summarizes the lessons learned as follows: (1) understanding students' learning is of paramount important for teacher; (2) understanding the substantive and procedural aspects of LS enables participating teachers to articulate the nature of learning for both student and teacher; (3) developing and applying the patterns of relation, norms and tools to improve teacher's understanding of the spirit of LS; and (4) practicing LS activities to enhance participating teachers'

knowledge, experience, and belief about the powerful teaching and learning.

Finally, during School Forum, participating teachers had a chance to share the capacity of improvement of the team with their fellow teachers. Model teacher, moderator, and observer identified and shared the positive changes, as well as the challenges they had encountered. The analysis result shows that: (1) The participating teachers were more reflective in understanding the need and the process of students' learning; and (2) There was a related link among the teacher's learning norms, relation patterns, and tools used for improving the roles of participating teachers. Other contributing factors found were the principal leadership and the role of facilitators (Suratno, 2010).

Practice Architectures and Ecologies of Practice

The aforementioned manifestation of SIP-LS shows that LS as professional development or professional learning approach involves participants and other things in various roles and actions. They interact and relate each other to shape particular practices, i.e., LS practices. In this case, thus, LS can be seen as social practices.

Derived from Theodore Schatzky's works, Kemmis and his colleagues argued that, "Practices are shaped not only by the intentional action and practice knowledge of participants, but also by circumstances and conditions that is 'external' to them" (Kemmis et al., 2009, p. 7; Kemmis, 2009b, p. 3). They altogether formed the "Web" of practices that are situated in a particular "social site" "where people and other things meet and interact with one another" (Kemmis et al., 2009, p. 7; Kemmis, 2009b, p. 3).

Kemmis and Grootenboer (2008; as cited in Kemmis et al., 2009, p. 2; Kemmis, 2009b, p. 1) develop a theory of practice as embedded in what they called "practice architectures". They defined the nature of practice architectures that has "the cultural-discursive, material-economic and social-political orders and arrangement that prefigure and shape the conduct of practice". Furthermore, they argued that those orders and arrangements shape what they called as distinctive characteristics of a particular practice, which were "sayings", "doings", and "relatings".

Those characteristics represent practice architectures and, as described by Kemmis et al. (2009, p. 2) and Kemmis (2009b, p. 1), give practices, such as education: (1) their "meaning" and "comprehensibility" (in the cultural-discursive dimension, in semantic space, and in the medium of language); (2) their "productiveness" (in material-economic dimension, in physical space-time, and in the medium of work or activity), and (3) their value in establishing "solidarity" among the people involved in and affected by a practice of a particular kind (in social-political dimension, in social space, and in the medium of power) (emphasis in origin). Kemmis et al. (2009, p. 2) and Kemmis (2009b, p. 2) argued that these practice architectures "'hung together' in 'teleo-affective structures' that gave a sense of purpose (the 'teleo' element) and shaped participants' commitment (the 'affective' element) to achieve particular purpose" of that practice.

In addition, Kemmis and his colleagues (Kemmis et al., 2009, pp. 2-3; Kemmis, 2009b, p. 2) underlined that they saw practices not only as embedded in practice architectures, but also as "clustered together in relationship with other practices" mentioned as "meta-practices". They define meta-practices as "practices that shape other practices". They exemplified that, "The practice of education shapes the practice of commercial and political life in a community" (Kemmis et al., 2009, pp. 2-3; Kemmis, 2009b, p. 2).

In his International Collaboration Research Group of Pedagogy, Education, and Praxis, Kemmis and his colleagues (Kemmis et al., 2009, p. 3; Kemmis, 2009b, p. 2) explored "complex of meta-practices in the field

of education”, in which each of them “shapes and influences the others”. They described it as follows (Kemmis et al., 2009, p. 3; Kemmis, 2009b, p. 2):

The *academic and social practices* of students in a group of primary schools are shaped by and shape →

New and innovatory *educational practices* of the teachers in these schools, which in turn are shaped by and shape →

Meta-practices of *initial and continuing teacher education* which form and shape teachers’ practices ((by) focusing in particular on teachers’ *formal and informal professional development and professional learning*), and how these, in turn, are shaped by and shape →

Meta-practices of *educational policy and administration* which determine the resources, infrastructure and policies that influence the conditions for educational practice ((by) focusing on different participants’ practices of *leadership* in primary schools), and how all of these are shaped by and shape →

Meta-practices of *educational research and evaluation* that shape and are shaped by the practice of education and the other meta-practices by suggesting how these other meta-practices can be understood, and by monitoring the conduct and consequences of the other meta-practices (for example, educational consultants assisting the schools have been introducing research-based ideas and practices like those of “learning communities”, and “principles of effective practice”). (emphasis in origin)

Considering the complexity of meta-practices, Kemmis and his colleagues (Kemmis et al., 2009, p. 3; Kemmis, 2009b, p. 2) argued “practices and meta-practices as living things, as connected to one another in ‘ecologies of practice’”. They exemplified that compulsory schooling practice in the West shapes the complexity of meta-practices of education, teacher education, educational policy and administration, and educational research and evaluation that “have been mutually interdependent, each influences and is influenced by the others” (Kemmis et al., 2009, p. 3; Kemmis, 2009b, p. 2).

In addition, Kemmis and his colleagues (Kemmis et al., 2009, p. 4; Kemmis, 2009b, p. 2) also identified “the ecological relationships that exist in the detailed local connections among different kinds of ‘subsidiary practices’ below the level of large-scale practice”, such as education. They described that “there are particular kinds of interconnections and interdependence between particular subsidiary practices of ‘teaching’ and particular corresponding practices of ‘learning’” (Kemmis et al., 2009, p. 4; Kemmis, 2009b, pp. 2-3). Furthermore, they exemplified that the “idea of ‘learning community’ is realized in one set of practices of ‘community’ and collaboration among teachers, in a similar set of collaborative academic and social practices among groups of learners, and also in changed relationships between teachers and students” (Kemmis et al., 2009, p. 4; Kemmis, 2009b, p. 3).

To describe practices as living ecological relationships, Kemmis and his colleagues (Kemmis et al., 2009, p. 10; Kemmis, 2009b, p. 4) used a “set of criteria” developed by Fritjof Capra, such as “principles of ecology, principles of sustainability, principles of community, or even the basic facts of life”. They analyzed eight key concepts of ecological relationship, i.e., networks, nested systems, inter-dependence, diversity, cycles, flows, development, and dynamic balance, to measure whether “(1) practice (by analogy with species); and (2) ecologies of practice (by analogy with ecosystem) meet each criterion” and to examine whether “practices and ecologies of practice are living systems” (Kemmis et al., 2009, pp. 10-11; Kemmis, 2009b, p. 5).

By determining that practices as living systems, Kemmis and his colleagues were attempting: (1) to explore “the notion that they are particular kinds of ‘entities’ that come into existence in particular places (sites) at particular times” (Kemmis et al., 2009, p. 8; Kemmis, 2009b, p. 4); and (2) to show that “They are situated within ecologies of practice that are sustainable (or not sustainable) because of their relationships of interdependence with other practices in an ecology of practices” (Kemmis et al., 2009, p. 17; Kemmis, 2009b, p.

5). Although both attempts represent spectator point of view, like naturalist observers, Kemmis (2009b, p. 5) argued that “It aims to show that practices are ‘inside’ the sites in which they are situated, and that practitioners, are inside these sites, too”.

LS as Professional Practice

In this section, the author describes the two main issues of LS practice: (1) practice architectures; and (2) ecologies of practice. It is important to note that the following descriptions mostly represent the participants’ point of view.

Practice Architectures of LS

Practice architectures are “the cultural-discursive, material-economic, and social-political orders and arrangements that prefigure and shape the conduct of practice, that is, shape the distinctive ‘sayings’, ‘doings’, and ‘relatings’ characteristics of a particular practice” (Kemmis et al., 2009, p. 2; Kemmis, 2009b, p. 1).

Table 1

Distinctive “Sayings” of Achieving Learning Community Through LS

Participant	Their meaning and comprehensibility
Principal	When I looked back at the process (of LS implementation), I was really convinced that LS strengthens our vision mission. The team was much involved and they experienced how a learning community works.
School foundation leader	The LS team has carried out innovation that forms the inner power of learning community.
LS team coordinator	LS is a program for articulating our school vision that is to build a learning community. We realize the important principle of collegiality and collaboration among us the members of the community. The principle serves as our basic foundation in understanding how students learn.
Model teacher or research lesson teacher	At the beginning, I was not confident enough and not sure to undertake this task. As the team fully supported in designing and preparing the open lesson, I was much helped and I got so much valuable and constructive feedback from them.
Teacher (observer)	We had a wonderful process of LS and it was different from the common activities we used to do: (1) the teamwork was very good...; (2) respected the opinion of team members...; (3) attempted to follow the agreed norm...; (4) the team commitment was extraordinary...; (5) each (member) supported one another...; (6) each role was played well and seriously...; (7) amazing resource persons...; and (8) full support and trust from school management and school foundation.
Student	Today, we learned in a different way... Got excited to learn in groups but at the same time got a bit uneasy for so many teachers were observing in the class... but we liked much to be observed.
LS facilitator	The LS team worked to fulfill the school vision that was to build a learning community. That was wonderful! I was really involved in learning how a learning community takes its learning.

Central to “sayings” characteristic of LS practice is the idea and articulation on how to achieve school vision as a learning community by implementing LS. The following “sayings” (see Table 1) represent how participants think about and make a meaning of LS as manifestation to their school vision.

In addition to their meaning of LS based on their experiences to do so, it is also identified some emerging vocabularies that represent additional “sayings” characteristic. Those are: (1) the role and responsibility (distributed works) of LS member; (2) norms of teacher’s learning; (3) tools for teacher’s learning; and (4) prediction and anticipation of students’ learning. Table 2 presents “sayings” characteristic of emerging vocabularies.

As it is the first experience of implementing LS, field observation reveals some “doings” characteristic of such practices in the school. These can be seen from emerging formation of activities and actions and the flow of the work undertaken by the participants.

Initially, the principal forms the structure of LS team which is informal in nature. This team consists of

several roles and responsibilities that in fact are quite different from their main role as teachers; those are LS coordinator, moderator of LS meetings, model teacher or research lesson teacher, observer, and note taker. This team works closely in each SIP-LS activity, from preparation to implementation and evaluation of each activity: Leadership for Learning workshop, LS workshops and School Forum. In doing so, each participant plays a key role and supports each other to deliver many kinds of action, such as coordination, collaboration, consolidation, and documentation. Table 3 highlights the workflow within the LS team which shows a kind of distributed works.

Table 2

“Sayings” Characteristic of Emerging Vocabularies

Emerging vocabulary	Their meaning and comprehensibility
Role of LS team members	The important roles in LS are: (1) coordinator; (2) moderator; (3) role teacher; (4) observer; and (5) recorder.
Responsibility of LS team members	A few tasks to carry out LS are coordination, collaboration, consolidation, and documentation.
Norms of teacher learning	The whole process taken in the LS implementation went well as we put our common learning agreement into practice...: (1) collegiality...; (2) focus on the student’s meaningful learning...; (3) mutual learning... and (4) politeness as the means of good manners.
Tools for teacher learning	We had a set of tools to implement LS; they are: (1) general agreement/norm in the Plan-Do-See phase as guidelines for the moderator; (2) observation sheet that focuses on the chronological steps of instruction; (3) clinical interview used for deepening student’s knowledge; (4) PCK based analysis; and (5) analysis on student’s learning: prediction and anticipation.
Prediction and anticipation of student learning	We did something new that was likely often forgotten in our planning. We analyzed our student’s response, which in the plan phase was often called as prediction and anticipation.

Table 3

Distributed Works Within LS Team

Roles		Responsibilities
LS team coordinator	Leading LS team in planning, implementing, and evaluating LS activities.	(1) Coordination (action planning, monitoring, resourcing, and reporting); (2) Collaborating (working closely with school leaders and collaborating resource person); (3) Consolidation (preparing and directing the learning process of teacher and student).
Model teacher	Leading LS team to design lesson (Plan) and to scrutinize teaching and learning practice in his/her classroom.	(1) Coordination (leading lesson planning preparation, implementation, and improvement); (2) Collaboration (structuring discussion of lesson planning and teaching preparation with other participating teachers); (3) Consolidation (organizing teaching preparation and other supporting things ready before open lesson implementation); (4) Modeling (providing case for teacher’s learning through observing his/her classroom).
Moderator	Leading teacher discussion in each Do-See sessions of LS.	(1) Coordination and collaboration (developing the focus of discussion and its guideline); (2) Consolidation (organizing teacher’s learning tool to be ready to use: forms, guideline); (3) Moderating the flow of talk and directing to analyze evidence, frame problems and formulate alternative solutions.
Observer	Collecting data and evidence to be discussed and reflected.	(1) Applying observation guidance and rules during classroom observation; (2) Taking notes and conveying findings in reflection session; (3) Taking active participation during discussion; (4) Supporting other roles in coordination, collaboration, and consolidation.
Note-taker	Documenting the results of LS discussion.	(1) Taking notes of each discussion session; (2) Documenting all LS activities (notes, artifacts, photos, videos, etc.).

In addition to undertake the actions and activities, the principal also supports adequate resources. It relates

to providing time and other materials needed to conduct LS (e.g., budget, recording devices, and rooms for meetings). Finally, in order to experience how learning community works, the team establishes the space of learning situation by setting the seat arrangement, and a group work style, for both teacher's discussion and classroom interaction.

Those workflows, resources, and space arrangements, along with their growing understanding of the principles of LS, shape specific relations in conducting LS. In overall process, the participants use agreed norms and pattern of relations to sustain their interaction. From participants' point of view, the norms and pattern of relation manifested are based on the following aspects: (1) articulation of school vision into agreed norms; (2) principal leadership and support; (3) interdependence of each role in an informal structure (to some extent, represents the so-called teacher's leadership manifestation); (4) commitment and inner-power of participants to undertake their responsibilities; and (5) social conduct, such as conveying comments in a polite manner.

Central to "relatings" characteristic is interaction among participants' roles. Each role contains leadership aspects which were structurally working in distributed ways: a combination of roles and responsibilities of each agency. Such informal distribution of roles is shown as follows:

School Leader ↔ LS coordinator ↔ Moderator ↔ Model Teacher ↔ Observer ↔ Note-taker

The flow of such distributed tasks provides data and evidence about learning that underpins decision-making process both by school leaders (school policy) and teachers (pedagogical policy) (Suratno, 2010). For example, LS coordinator made policy for coordinating, collaborating, and consolidating LS implementation, such as providing appropriate resources (e.g., time scheduling) that needed support from school leaders. Another example is the role of model teacher that represents how pedagogical decision-making works. This can be seen from the way model teacher leads his/her small team in preparing the lesson (e.g., lesson planning, teaching materials, and classroom arrangement) and to provide modeling by implementing the lesson. Through observing teaching and learning activities conducted by model teacher, observers objectively learned and collected data which framed learning problems and explored alternative solution to improve the lesson during "See" stage. Finally, the role of moderator represents LS coordinator and school leaders in leading teacher's learning. The role of moderator is really important, because he/she must organize the series of talks and structure their flow. In this case, the talks itself, i.e., discussion and reflection, are the key features of "relatings" characteristic of teaching learning.

To summarize, the author observes the changes in practice architectures. In terms of "sayings", there is growing understanding regarding to making new meaning of teaching, learning, leading, and learning community. In terms of "doings", providing resources, space arrangement, and manifestation of roles and responsibility shape the mode of purposive actions in conducting LS activities. Finally, "relatings" characteristic is represented by the flow of distributed works and pattern of relations. Thus, how these hang together is manifested by the agreed norms, committed leaders, and participants and their articulation to school vision as a learning community.

Ecologies of Practice of LS

In this study, ecologies of practice of LS involve "meta-practices" in which each of them "shapes and influences the others" (Kemmis et al., 2009, p. 3; Kemmis, 2009b, p. 2) in an elementary school learning

community. There are, at least, three meta-practices identified: learning, teaching, and leadership.

The learning process involves both teacher and students' learning that underpins the notion of teaching and leadership. It relates the notion of understanding teacher's learning through students' learning as basis for enhancing teaching practice through sharing roles and responsibilities between teachers. These roles and responsibilities, in essence, represent teacher commitment to learn, thus, it can be seen as a particular aspect of teacher's leadership. However, such changing nature of teaching and learning needs powerful leadership of principal.

The interdependence of leadership, teaching, and learning of principal and teachers shape the learning, teaching, and leadership of students. These can be seen from the nature of collaborative learning established by the LS team. This arrangement includes grouping and classroom setting. Students learn in group in which students help each other to solve the presented problems.

The followings show the interaction among meta-practices that shape ecological relationships of ecologies of practice that exist in SIP-LS program:

- (1) Distributed leadership in the learning community by sharing roles and responsibility and developing norms and relations →;
- (2) LS as professional learning community approach by establishing collegiality, collaborative learning, and reflexivity →;
- (3) Developing teaching materials and classroom setting that promote meaningful learning condition (collaborative and reflective learning) →;
- (4) Students learn in groups to discuss, solve problems, and reflect upon their learning.

Those relationships describe that there are "particular kinds of interconnections and interdependence between particular subsidiary practices of 'teaching' and particular corresponding practices of 'learning'" (Kemmis et al., 2009, p. 4; Kemmis, 2009b, pp. 2-3) and "leading". According to Kemmis et al. (2009, p. 4), their existence underlines the manifestation of learning community realized in "collaborative academic and social practices".

One would argue that in a detailed sense, the notion of collaborative academic and social practices represents the nature of LS as teacher learning community that consists of the notion of learning (collaborative academic practice) and leadership (collaborative social practice) (Kemmis et al., 2009, p. 4; Kemmis, 2009b, p. 3). These shape the features of ecological relationship in LS practice:

- (1) Learning and leadership are the essential properties. Their existence highly influences the practice of teaching;
- (2) Learning how student learns underpins learning "teaching" from practice settings;
- (3) Learning community is manifested through distributed leadership in a collegial nature of relationships. It represents the interdependence of roles of responsibilities of participants;
- (4) Learning community involves different participants' ideas, interest, and experience. Their diversities constitute how they learn, teach, and lead;
- (5) Learning and leading are cyclical in nature, such as in LS; there is a Plan-Do-See cycle and changing role of participants;
- (6) Norms, common languages, and pattern of relations energize the LS practice;
- (7) Enhanced learning is facilitated by the improvement of intellectual tools being used. A changing

approach of lesson planning and observation tools enhances the development of reflective practice;

(8) Collaborative learning experienced by the LS team leads their understanding in managing resources needed (time), playing important roles, and approaching their works (workflow). These represent the nature of the dynamic balance of LS: learning, teaching, and leadership.

Concluding Remarks

As Kemmis and his colleagues (Kemmis et al., 2009, p 7; Kemmis, 2009b, p. 3) explained, the author argues that LS practice as new initiative in the school studied is shaped not only by “the intentional action and practice knowledge of participants”, but also by “circumstances and conditions which are external to them”. The evolving nature of forms of relation, agency, content, and situation by improving the role and tool used to enhance practical understanding, rules, and general understanding to achieve important purpose (Kemmis, 2009a, p. 27) of learning community as perceived by the LS team: understanding teacher learning through understanding students learning. In this case, the role of leadership and “social other” like LS facilitator is necessary in shaping initial features of LS practice in that school.

This study illustrates two important features of LS from practice theory point of view: (1) practice architectures (“prefigure and pre-form”) and meta-practices (“create conditions”); and (2) ecologies of practice (“different subsidiary practices are interconnected in ecological relationships to sustain the whole complexity of practices”). Thus, following Kemmis’ works, LS practice in which it interconnects learning, teaching, and leadership, in this case and to some points, demonstrates itself as a living system: each influences and is influenced by the others.

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