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Learning beyond Boundaries: Japanese Teachers Learning to Reflect and Reflecting to Learn

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Introduction

Challenge and change are two words that are commonly used to describe many aspects of our life in the world in the early 21st century. We can expect more challenges because of increasing globalization, information and communication technologies and socio-economic development. Meeting these challenges quickly points to the crucial need to enhance new perspectives on educational leadership, policies, curriculum, contents and methods of teaching (Sarkar Arani, 2004). The need to re-construct teaching, both within and outside the school, is gaining increased attention among educational researchers, policy-makers, administrators, practitioners, parents and media. Therefore educational management in the recent past has heavily emphasized the importance of re-thinking education for more effective teaching, enhanced learning, higher student achievement, and civic and moral education.

In the latter decades of the 20th century, educational reform in many countries emphasized the one-way and top-down relationship between educational administrators and schools and teachers. It appeared to be a more authority-oriented strategy for change and focused on educational policies,

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school management, and the content of teaching and curriculum as ideology. However, it seems that in the early 21st century, it shifted to put more emphasis on learning-oriented strategy for change and to focus on empowerment of teachers and self-sustaining change in school. Consequently, teacher quality has developed into a core innovation issue of school education in many countries. This observation is based on the results of TIMSS (1999, 2003, 2007) and PISA (2000, 2003, 2006) which emphasize what actually goes on in the classroom and how the quality of teaching can be improved (Inprasitha et al., 2009; Steele and Boudett, 2008; Sternberg, 2008; Johnson and Bonaiuto, 2008; Matoba, Krawford and Sarkar Arani, 2006; Sato, 2006; Lewis et al., 2006; Matoba and Sarkar Arani, 2003; Stigler and Hiebert, 1999).

Japanese Lesson Study and Lessons for other Nations

The school education system is taken seriously in Japan, particularly from the perspective of student ability to fully understand teaching materials, motivation to learn, and scholastic achievement level in international assessment tests such as TIMSS and PISA. (Sarkar Arani and Fukaya, 2007; Monbukagakusho, 2003). Recently Japanese approach of Jugyou Kaizen (improving teaching), which is also called Jugyou Kenkyuu (lesson study), has become an alternative model of core innovation of school education and improving teaching-learning process in the world (Matoba, Krawford and Sarkar Arani, 2006; Sarkar Arani, 2007).

This model of classroom-based research and school-based teacher professional development has been examined as an effective approach for teachers to design more attractive lessons and to improve teaching in many countries based on their culture and educational context. Educational researchers and educators in the U.S. and the U.K. look at lesson study as an alternative approach for teachers who are interested in critically examining their classroom practice and shifting from a focus on 'teaching' to a focus on 'learning' (Lewis, 2006; Lewis et al., 2006; Fernandez et al., 2003; Stigler and Hiebert, 1999). The Hong Kong Institute of Education applies lesson study that supports teachers to understand variation in student learning capacity and how to improve their teaching style to change students from passive recipients of information to critical thinkers and learners (Lee, 2008; Lo, 2006). Educational researchers in Singapore and Thailand have suggested that lesson study might be a new model for professional development of mathematics teachers and beneficial means of improving the quality of teaching and student academic

achievement (Inprasitha et al., 2009). In China, lesson study brings a new perspective to initial teacher training programs and teacher professional development in school (Gao, 2006). Recently a large number of Indonesian and Vietnamese educators have looked at lesson study as a way of creating new approaches for promoting effective teaching and learning strategies in school and university (Saito et al., 2008; 2006). Lesson study has also become popular among educational researchers and educators in the Middle East as a model of action research and school-based teacher professional development. For instance, Iranian scholars have applied lesson study as an alternative system for training teachers who are high school graduates and have no chance to continue their study at the university or professional college for teachers (Sarkar Arani, 2006). Also in South Korea, with the highest rank of students' success in the TIMSS, educators especially in a teacher education university have recently started to investigate lesson study to examine new teaching methods and improving teaching-learning processes (Cheon, 2008). In Japan, with a long history and rich cultural background in lesson study, also educational researchers and practitioners have started to investigate lesson study as an effective means to rebuild schools as 'learning organizations' and to look at the impact of lesson study on transforming schools for expanding 'learning community' and 'organizational learning' as a new term in school reform (Abiko and Fukaya, 2008; Sarkar Arani, Shibata and Matoba, 2007; Sato, 2006).

Lesson Study as Learning Community

Lesson study refers to collaborative research on teaching and learning processes in school that is conducted by and for teachers. It focuses upon key school issues as they relate to the teachers' teaching processes and students' learning styles. They are conducted as a learning community circle, following the steps of planning, acting and observing, checking, and reflecting. These steps are discussed below to show how they help teachers learn from each other and improve their teaching practice as well (Sarkar Arani, Shibata and Matoba, 2007; Sarkar Arani, 2006).

1. *Preparing a collaborative lesson plan:* Teachers usually discuss in detail the teaching theme that they have already chosen to focus upon. Teachers then discuss the content and teaching materials and methods used in the

teaching-learning process. Finally, the teachers argue ways of improving the lesson plan before implementation.

2. *Doing and observing the lesson:* One of the teachers agrees to present the lesson based upon the lesson plan and other teachers are active observers during the class session and make notes on what happens in the classroom during the lesson. Each teacher has a specific assigned role to observe explicit and implicit educational activities in the classroom.
3. *Checking and evaluating:* After teaching the lesson, all teachers meet again as a group to evaluate the lesson plan and its implementation by the teacher. During this session they examine the appropriateness of the teaching theme, the materials used, instructional methods, problems with the teacher's performance, and the reactions of individual student's participating in the classroom activities.
4. *Reflecting and acting:* Teachers discuss ways of revising the lesson plan and teaching method in practice. Based upon their observations and reflections, teachers suggest new teaching-learning strategies, share their findings and conduct self-directed learning, self-improvement professional development and classroom-based research in practice. The teachers provide action steps to be taken based on what is learned and what must be achieved to enrich classroom practice and to enhance learning.

Kaizen is the heart of lesson study process, and through it, teachers learn from each other to share ideas and to improve quality of their teaching in practice. These collaborative and intellectual activities provide teachers with learning community opportunities to raise level of their professional skills and the relationship with students, as well as engagement in classroom-based research activities, and emphasizing on "learning by doing" (Sarkar Arani, 2006).

Outcomes of Lesson Study

In research and particularly case studies of lesson study in which we have been involved, we have understood that lesson study helps teachers to conduct and analyze lessons which encourage individual students to express themselves

creatively, to be active during teaching-learning processes, and consequently to be able to fully participate in cooperative learning (Abiko and Fukaya, 2008; Sarkar Arani, 2006; Fukaya, 2002). The following viewpoints are the main outcomes of our understanding on the impact of lesson study on the quality of Japanese teachers and teaching in practice which is recognized in other studies on Japanese culture and quality of education (Matoba and Sarkar Arani, 2006; Sarkar Arani, 2006; Takahashi and Yoshida, 2004; Lewis et al., 2004; Fernandez et al., 2003; Stigler and Hiebert, 1999; Sarkar Arani, 1999; Rohlen and LeTendre, 1996; Lewis, 1995).

- **Paying more attention to student variation:** Japanese teachers learn to observe students individually and carefully in the lesson study process. They learn how to recognize the needs of students by creating an individual database in school and calling on students who do not raise their hand in class or have special problems or interests and provide them with opportunities to learn the feeling of successful achievement through group participation. Through participant observation in the lesson study process sufficient attention is paid to students who are docile, quiet, and who think over things carefully and seriously.
- **Looking for more effective way of establishing and concluding lesson:** Each activity in the teaching-learning process, even in mathematics and science classrooms, has a logical relationship with the daily life of students. Regarding student motivation, teachers posed questions that had meaning for the daily lives of the students at the beginning of specific lessons. When thinking about ways to measure the area of a triangle, a teacher in our case study uses a park or an object of play, for example, to increase the students' interest in learning math. At the end of a lesson, the teacher and students together as a group try to discuss and correct a problem. The objective is to make a convenient record of this in a notebook as conclusion and sometimes reflection. Since this method is often used by students, the format for the record they make will be virtually identical. What needs to be mentioned here is that lesson proceedings are summarized through 'reflection', 'comments', 'formulas' or 'questions'. In this way, the teaching-learning process has a purpose, and is easy to follow and understand.

- **Designing learning for more mutual interaction:** Through their participation in lesson study, teachers learn how to design learning opportunities for more student-student interaction as a means of facilitating classroom activities. Moreover, small groups of students and team teaching are organized to demonstrate their individual characteristics and needs as much as possible. Teachers and students work together during lesson study to develop alternative strategies to build new standards for their successes and order within the culture of expanding learning.
- **Looking for creative ideas:** Lesson study is a leading method to train school teachers to utilize a problem-solving approach consisting of questions and discovery of solutions. There is more emphasis on the problem-solving process than on a specific answer. Therefore, teachers and students try to make connections between thinking and action in order to facilitate the learning environment for developing critical thinking skills. In these ways students are the teachers' partners in examining more effective teaching and learning in practice. According to our case study analysis, the teachers of a school at Nagoya rarely mention whether a student's answer is correct or wrong. Moreover, students are instructed not to evaluate their classmates in such a manner. Instead, emphasis is placed on explaining how to solve problems, and students are taught the perspective that there are various ways of problem solving. The teacher and his students often use the expressions such as 'T's way of solving the problem', 'K's method of reflecting' or 'N's idea of thinking'. Here, the emphasis is not placed on finding one single absolute method of problem solving, but one idea out of many available ideas and that idea becomes an understandable point through students' argument. In the event that students have a different opinion than their teachers, it is considered to be important information that supports student in developing their own thinking.
- **Learning to assess and assessing to learn:** Teachers learn during lesson study to change their assumptions about students' capacity and to give them a chance to be different even while making mistakes. Teachers learn how to apply such 'mistakes' to discussion of various interpretations and provide opportunities to support them in further challenges. When teachers are asked questions by students, rather than just answering, they respond in

a way in which the students can think of the fundamental issues involved and solve process of the problem by themselves as well as construct knowledge in an effective way. Students will cease asking questions if teachers do not pose self-initiated questions or are unable to accommodate the students' interests. To let students freely ask questions, and freely try to explain their opinions, teachers must respond effectively to self-initiated questions as well as to students' needs and interests. Therefore, a mistake is attributed to a lack of learning and thinking efforts, rather than the student's lack of academic ability. Consequently, students do not feel hesitant to present their critical opinions, different ideas and reflect on their own learning performance.

- **Learning to reflect and reflecting to learn:** Japanese teachers as members of a learning community reflect individually and in groups on their own thinking, mental model, teaching materials, learning design, and decisions and actions via lesson manuscripts and a process of analysis. They are always looking for peer group learning opportunities which bring them alternative perspectives for managing classroom activities in a more effective way. Rather than learning about theoretical or abstract principles, teachers are thought to acquire skills and practical knowledge through re-planning, participant observation, doing and reflecting on the classroom activities that comprise lesson analysis. Such educational experiences which came from self-reflection on action have been considered essential in providing opportunities for self-evaluation and feedback; and teachers learn that "when I learn, my students learn" (An Ohio teacher, November 1999 cited in Ploeg et al., 2000:p.1).

Challenges to Sustaining Momentum in Lesson Study

The main challenges to sustaining momentum in Japanese lesson study include the educational system, school cultural issues and other social and economic aspects (Sarkar Arani, 2006). However, in our view we can make the following points.

- Teachers' time limitation, work style, socio-economic and their professional quality status.
- Lack of systematic support in collaborative work.

- Limited opportunities for collaborative activities and shared decision-making regarding school management.
- Greater emphasis on individual capacity rather than group potential and productivity in regard to the issue of improving the quality of school education.
- Emphasis on theoretical knowledge rather than professional knowledge regarding teaching improvement in practice.
- Looking at lesson study as a way of teacher assessment rather than an approach for improving teaching.
- Emphasis on results rather than process and pressing teachers into more teaching than learning.
- Teachers' anxiety and assumptions about opening the class to observers, lesson analysis and group-reflection.
- Looking for quick results and outcomes in regard to putting lesson study into practice as an alternative approach.

Guideline for Implementing Lesson Study

The following essential schemes which we examined with our colleagues in practice (for example see Matoba, Shibata, and Sarkar Arani, 2007) are useful for teachers, educational researchers and administrators in conducting lesson study for improving teaching, building a capacity for expanding learning communities (Sarkar Arani, Shibata and Matoba, 2007:pp.29-32) and as Berreth (1999) mentioned for being a partner in reform that works.

- Consider that lesson study is a cultural movement in Japanese schools and as such it will take time to effectively implement in other countries' educational context.
- Bring partners together and organize informal and formal meetings for expanding professional dialogue.
- Establish and use a common language and meaning from the beginning.
- Build relationships for sharing ideas and trying to achieve team discussion making and dialogue to share knowledge and practical experiences.
- Look for shared ideas that are transferable from teaching to learning.
- Highlight both the process and the outcomes of the collaborative research on classroom activities.

- Search for a common mission and try to find points which are common among teachers, principals and educators that can be built upon.
- Clarify the roles and tasks of participants in classroom-based collaborative research activities.
- Build a culture of improvement such as Japanese Kaizen which is based on collaborative work and support for constant change.
- Recognize that change takes time and needs systematic hardware and software supports from inside and outside the school.
- Consider that the lesson study model is likely to be seen as easy to learn but difficult to adequately master in practice.
- Look at lesson study as a process rather than a project or an event and as Japanese slow food not American fast food.

Conclusion

During a case study of school-based teacher training in an elementary school a teacher told us that “for most Japanese teachers, learning and teaching is collaborative work and the best training is done where ideas and experiences are shared and reflection is accomplished through discussion in small groups and networks” (Sarkar Arani and Matoba, 2002, p.100). We think that this is because teachers are able to think deeply about their teaching practices and exchange understanding with other teachers through lesson study. Therefore we reflect on lesson study as an effective model for classroom-based teacher professional development and expanding learning-oriented strategies for school change that has real meaning for improving teaching, leading the learning community, and the potential for significant impact. Teachers and educational leaders worldwide could also respond positively by sharing their experiences of conducting Japanese lesson study in practice and learning from each other.

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