Chapter 57
Lesson Study as an Effective Performance-Based Measure of Teacher Effectiveness

Mark Patrick Ryan
Loyola Marymount University, USA

ABSTRACT

The Japanese Lesson Study Model (JLSM) became a focus of much research after the publication of the Third International Math and Science Study (TIMSS). The JLSM has various possible manifestations, but most forms of the model include three key elements – collaborative planning of one or more lessons that will be taught by all participants, delivery of the lesson with fellow teacher observers in the room or with videotaping, and collaborative analysis by participants of students work and the lesson delivery. This study presents quantitative and qualitative data from approximately 400 teachers who participated in a form of lesson study. The history and research basis of lesson study is presented, followed by the researcher's adaptation of the model for use in the university classroom and professional development courses, followed by an analysis of the impacts of the model on teacher participants.

INTRODUCTION

Over a seven year period, the researcher implemented varied forms of the Japanese Lesson Study Model (JLSM) with university classes of intern teachers and also as part of professional development in-service programs offered to P-12 school faculties throughout California. Quantitative and qualitative data from university intern teachers and in-service teacher participants are presented in this study which had the following objectives: 1) Explain the history and research basis of the JLSM and the nexus of the model to the extensive research accomplished through the TIMSS; 2) Describe in detail the adapted lesson study model used in the research; and 3) Document the impacts of the lesson study process on teacher participants.

DOI: 10.4018/978-1-5225-1624-8.ch057

Background

The publication of the Third International Math and Science Study (TIMSS) sparked a variety of research efforts to get to the bottom of why Japanese students were at the top of the international measure of academic achievement while American students were at the bottom. The barrage of research that accompanied and followed the publication of TIMSS included a systematic analysis of videotapes of 8th grade mathematics teaching in Japan, Germany, and the United States. James Stigler and his colleagues analyzed hundreds of hours of classroom videotapes in all three countries. Their analysis found, among other things, that American math classrooms emphasized breadth over depth, covered significantly many more topics than Japanese classrooms, and usually involved ten or more times the number of actual "problems" being taught and learned in a typical Japanese lesson. In other words, while an American teacher might "cover" 20-30 problems in a typical day, and then assign 20-30 homework problems of the same type, Japanese teachers "covered" 2-3 problems in a 50-minute lesson and did not necessarily assign "homework" in the same way American teachers did. Stigler's analysis found that Japanese teachers initiated a powerful professional development practice that was neither funded nor forced by school and government leaders. That practice was Lesson Study. Stigler and his team concluded that Lesson Study was a powerful professional development tool that Americans might consider using to transform mathematics education and education in general (Stigler, Gonzalez, Kawanaka, Knoll, & Serrano, 1999). Arguably, their work was the beginning of the American (and worldwide) fascination with the Japanese Lesson Study Model (JLSM).

At the April, 2000 American Educational Research Association meetings in New Orleans, Catherine Lewis from Mills College in Oakland, California addressed the Special Interest Group on Research in Mathematics Education explaining the "nuts and bolts" of the JLSM. She identified five special characteristics of the model: lessons observed by other teachers, lengthy and collaborative lesson planning, planning which is highly goal-driven and focused, recording of the lessons, and collaborative discussion of the lessons. Lewis also identified that research lessons were sometimes local in scope, limited to teachers within a single school (*kounai kenkyuu jugyou*), but sometimes were regional or national in scope --- "public research lessons" (*koukai kenkyuu jugyou or gakushuu kenkyuu happyoukai*).

Perhaps the largest and best-known public research lessons are those conducted several times a year at national elementary schools, the 73 selective-admission public schools throughout Japan where new educational approaches often originate. Emerging from a Tokyo subway station in 1996 to attend a research lesson at a national elementary school, I found the broad walkways leading to the school were jammed with educators from all over Japan, in a scene that reminded my colleague Ineko Tsuchida of the huge crowds that pay homage at Japanese shrines on New Year's Day. The elementary school attracted nearly 5000 educators over its two days of research lessons. As lessons went on throughout the school, dozens of teachers crowded inside each classroom, and dozens more looked in from the hallways, through large sliding windows opened to afford a view of the classroom. Each visitor received a packet that included lesson plans, unit plans and background on the teachers' research. During panel discussions following the lessons, visiting teachers had a chance to question the teachers about their lessons, to exchange views, and to hear the teachers' own assessments of what went well and poorly (Lewis 7-8).

Lewis revealed multiple benefits to the JLSM, including individual professional development for teachers (both new and experienced), the sharing of best approaches to teach various concepts, the con-