



## Abstract

This mixed-methods study investigated the teachers' perceptions of a yearlong Japanese Lesson Study professional development project on improving the teaching of Disciplinary Literacy. Analysis of the middle school teachers' reflections, surveys, and interview data suggested that Lesson Study provided specific traits, such as unique strategies to collaborate, constant focus on student learning behaviors, specific ways to plan and observe how lesson plans are taught, and repetitive cycles, that differentiate it from other forms of Action Research. Through the thus defined features of Lesson Study (LS) as a very special form of Action Research (AR), the data supports Lesson Study's potential of becoming a sustainable, continual, context-based form of professional development for teachers to use when implementing local and/or statewide policy changes.

## Introduction

### Objectives

- The study focused on the defining characteristics of LS that make it unique among other forms of AR.
- Conceptualization and classification of LS revealed that it is a very structured form of AR requiring specific team activities for research, decision making, implementation, and reflection.

### Theoretical Framework

- The LS method of practitioner inquiry is based on a teacher-generated problem around student learning.
- The ideal attributes of effective professional development are perfectly aligned with the LS model:
  - intensive, ongoing, and connected to practice;
  - focus on student learning and addressing the teaching of specific curriculum content;
  - aligned with school and district improvement priorities and goals;
  - built upon strong working relationships among teachers;
  - engagement in social constructivism and reflection (see figure 1 below).

## Lesson Study Cycle

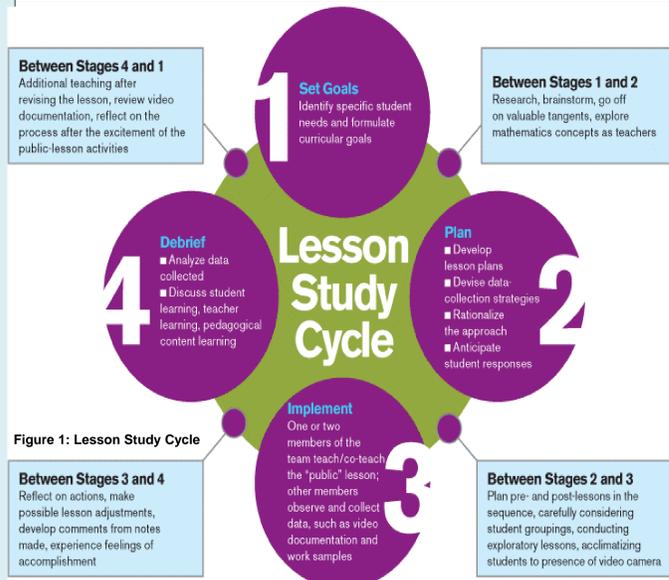


Figure 1: Lesson Study Cycle

## Research Questions

- What were the teachers' perceived professional benefits for participating in a professional development through LS?
- What are the teachers' perception of using LS as a form of practitioner inquiry and continuous form of professional development?
- Were there any changes in the teachers' beliefs and perspective on their practice?



Figure 2: Teachers research and plan the lesson by grade teams



Figure 3: Teachers observe the lesson being taught

## Participants

26 middle school teachers from in 2 school systems in Southeastern USA:

- 15 English Language Arts (ELA) and Social Studies
- 6 Math teachers
- 5 Science teachers

Ethnic distribution:

- 19% were African American,
- 8% Native American
- 73% Caucasian

Gender:

- 35% males
- 65% females

## Procedure

150 hours of Professional Development during the school year

- During the one week summer institute they learned the three goals of the project:
  - Strategies to teach **Disciplinary Literacy (DL)**;
  - Increase use of mobile devices and teaching apps;
  - Learning the Japanese Lesson Study form of PD.
- Lesson Study cycle using "practice lessons" focused on what to observe and
- Interactive online module focused on teaching methods for DL.
- LS cycles facilitated by LS trainers. The teams formed across schools and around grade levels in one district that had only ELA teachers, and around subject in the school district with math and science teachers (see fig. 2 & 3).

## Data analysis

Three data sources:

- Likert style pre- and post-surveys on teachers' knowledge about and preparedness to implement both the DL strategies and the LS.
- Monthly reflections on main project activities.
- Semi-structured exit interviews (7 teachers) about main components of the project aligned with the research questions.

## Data analysis (continued)

Data analysis methods:

- SPSS (2014) to analyze the surveys' quantitative data through a paired sample t-test comparing pre-survey scores to final ones by theme.
- Qualitative software program (MAXQDA) for analysis of survey open-ended questions, reflections, and interviews taken together.

## Results

The results of both quantitative and qualitative data are grouped by research questions below.

Table 1: Select survey responses about the usefulness of the DL strategies in the final survey (N=26)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	SD
I know how to engage students in disciplinary literacy	0%	3.85%	7.69%	23.07%	65.38%	4.08	0.67
I know how to apply disciplinary literacy in your teaching context or classroom.	0%	3.85%	11.53%	61.54%	23.07%	4.04	0.71
I know how to create engaging lessons utilizing inquiry-based disciplinary literacy	0%	7.69%	15.38%	50%	26.92%	3.96	0.85
I know how to evaluate student learning within an inquiry-based disciplinary literacy	0%	7.69%	11.53%	61.54%	19.23%	3.92	0.78

Table 2: Select survey responses about the usefulness of the LS model of practitioner inquiry and professional development in the final survey (N=26)

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree	Mean	SD
My LS team collaborated effectively to plan a research lesson	0%	0%	8%	38%	54%	4.461	0.64
Developing the research lesson as a team allowed me to think deeply about issues in my content or teaching	0%	0%	15%	50%	35%	4.2	0.7
I know how to conduct an implementation of a LS cycle	0%	0%	7.69%	73.08%	19.25%	4.12	0.51
I know how to identify a research theme for a Lesson Study cycle	3.85%	0%	15.38%	61.54%	19.23%	3.92	0.83

Teacher's perceived benefits are shown in Tables 1 & 2 above

### Teachers' perceptions of LS as educational AR and PD and their thoughts about its impact on their practice

The aspects of Lesson Study teachers valued the most define it as a very structured form of Action Research:

- Teaming and Collaboration
- Focus on the Student
- Context-based
- "Getting the Whole Picture" - while planning a single lesson, teachers considered the entire teaching unit and the sequencing of lessons with their respective goals and objectives
- Intentionality in Teaching
- Reflection

### Changes in the teachers' beliefs and perspective on their practice

- Increased confidence in their's and their colleagues' ability to change their teaching practice through collaboration.
- Belief that LS is a sustainable model for professional development given the full support of the administration.

## Discussion

- Teachers' instructional beliefs, perceived benefits, and reported effectiveness of their practice changed remarkably after being involved in a yearlong LS form of AR and PD.
- LS fits into the AR category that Somekh and Zeichner (2009) described as a "locally-sponsored systemic reform sustained over time" because it is started and organized by teachers at a local level as context-based and teacher-directed form of professional development.
- Our data identified the collaboration aspect of the LS as the most valuable part of the project. The LS stages allow teachers to collaboratively examine and reflect on their beliefs and assumptions about student learning and identify the components of classroom instruction that promote student learning based on the data collected from their own students during the research lesson (Lewis, 2005; Lewis & Hurd, 2011).
- LS requires the team to plan the lesson from the students' perspective, process through which teachers discuss their beliefs and assumptions of what constitutes effective instruction, share knowledge of their particular students and try to anticipate their responses to various activities.
- Although LS is cyclic like most forms of AR, the continuation of LS cycles is necessary for improving teachers' skills and for demonstrating the sustainability of teacher-driven professional research and development.
- LS, more than other forms of practitioner inquiry in education, provides an opportunity to develop a shared vision of high quality instruction among teachers, school and district leaders, as well as policymakers through observations of research lessons (Akiba, Murata, & Wilkinson, 2016; Lewis, 2015). Having a shared vision is an essential condition for designing coherent policy and organizational conditions for promoting a statewide instructional improvement (Bryk, 2015; Lewis, 2015).

## Future Research

- Study the implementation of LS for several years to examine the effects and sustainability of such a continuous model of context-based professional development.
- Conduct comparative studies of both LS and other forms of AR to distinguish differences and similarities.

## References

- Akiba, M., Murata, A., & Wilkinson, B. (2016). Race to the Top and Lesson Study Implementation in Florida: District Policy and Leadership for Teacher Professional Development. Working Paper. Tallahassee, FL: Florida State University.
- Bryk, A. (2015). Accelerating how we learn to improve (2014 AERA Distinguished Lecture). Educational Researcher, 44(9), 467-477.
- Lewis, C. (2005). How do teachers learn during lesson study? In P. Wang-Iverson & M. Yoshida (Eds.) Building our understanding of lesson study. Philadelphia, PA: Research for Better School Inc.
- Lewis, C. (2015). What is improvement science? Do we need it in education? Educational Researcher, 44(1), 54-61.
- Somekh, B., and K. Zeichner. (2009). "Action Research for Educational Reform: Remodeling Action Research Theories and Practices in Local Contexts." Educational Action Research 17 (1): 5-21.
- Zeichner, K. M., and S. E. Noffke. 2001. "Practitioner Research." In Handbook of Research on Teaching, 4th ed. edited by V. Richardson, 298-330. Washington, DC: American Educational Research Association.

## Acknowledgments

Funding for this project was received through NC QUEST (North Carolina Quality Educators through Staff Development and Training) Title II-A, "Improving Teacher Quality State Grants" awarded through the University of North Carolina at Chapel Hill, 2015.