Teacher In Charge: Improving teaching practices through lesson study

Tad Watanabe
Kennesaw State University
twatanab@kennesaw.edu

I would like to express my appreciation to Dr. Makoto Yoshida of William Paterson University for allowing me to use some of his photos and slides in this presentation.
What does (should) effective professional development look like?
National Staff Development Council (NSDC) Standards

• …because many of the recommendations contained in these standards advocate for increased teamwork among teachers and administrators in designing lessons, critiquing student work, and analyzing various types of data, among other tasks, it is imperative that professional learning be directed at improving the quality of collaborative work.

• Staff development that has as its goal high levels of learning for all students, teachers, and administrators requires a form of professional learning that is quite different from the workshop-driven approach.

• The most powerful forms of staff development occur in ongoing teams that meet on a regular basis, preferably several times a week, for the purposes of learning, joint lesson planning, and problem solving.
Professional Learning Community

• To create a professional learning community, focus on learning rather than teaching, work collaboratively, and hold yourself accountable for results.
  – Richard DuFour (Educational Leadership, May 2004)

• 3 Principles of True PLC
  – Ensuring that students learn
  – A culture of collaboration
  – A focus on results
Lesson Study
jugyo kenkyuu
授業 研究

Lesson Study/Research

• A teacher professional development activity long favored by Japanese teachers.

• Center piece: research lesson
Lesson Study in Japan

- Over 100 year history as a means to improve teaching and learning
- Done in elementary and secondary schools nationwide
- Supported nationally and locally
- Part of pre-service training

(because of lesson study) “...Japanese mathematics instruction has transformed from teacher-directed instruction to child-centered instruction during the past 15 years.” (Takahashi and Yoshida 2004)
<table>
<thead>
<tr>
<th>Lesson Study Types in Japan</th>
<th>Description</th>
<th>Main Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>School-Based Lesson Study</strong></td>
<td>• Teachers from a school participate</td>
<td>• Systematic and consistent instructional and learning improvement</td>
</tr>
<tr>
<td></td>
<td>• School lesson study goal</td>
<td>• Common vision of education at the school through teacher collaboration</td>
</tr>
<tr>
<td></td>
<td>• Form several sub-groups</td>
<td></td>
</tr>
<tr>
<td><strong>District-Wide Lesson Study</strong></td>
<td>• Cross-school lesson study group</td>
<td>• Developing communication</td>
</tr>
<tr>
<td></td>
<td>• Subject oriented groups (e.g., mathematics)</td>
<td>• Exchanging ideas</td>
</tr>
<tr>
<td></td>
<td>• Meet once or twice a month</td>
<td>• Improving instruction and learning in the district as a whole</td>
</tr>
<tr>
<td><strong>Cross-District Lesson Study</strong></td>
<td>• Voluntarily organized group (enthusiastic practitioners)</td>
<td>• Developing new ideas for teaching</td>
</tr>
<tr>
<td></td>
<td>• Improving teaching and learning or curriculum in a certain subject</td>
<td>• Investigating curriculum sequences and contents</td>
</tr>
<tr>
<td></td>
<td>• Meet once or twice after school on off-school days</td>
<td>• Developing curriculum</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Teaching Gap
Stigler & Hiebert (1999)

• Chapter 7 “Beyond Reform: Japan’s Approach to the Improvement of Classroom Teaching”

• Based on the TIMSS Video Study

Through the gradual improvement of individual lessons, and through the knowledge developed and shared during this process, the Japanese system enables the steady improvement of teachers and teaching. (p. 127)
Lesson Study Cycle

1. Defining the Problem – Setting the Goal
2. Planning the Lesson
3. Teaching the Lesson
4. Evaluating the Lesson and Reflecting on Its Effect
5. Revising the Lesson
6. Teaching the Revised Lesson
7. Evaluating and Reflecting, Again
8. Sharing the Results

All completed collaboratively.
Lesson Study Goal

• **School Goal:**
  – “Creating a community of responsible learners”

• **Question:**
  – What kind of students do we have?
  – What kind of students do we want to develop?
  – How do we get there?

• **Lesson study goal:**
  – Fostering student problem-solving and responsibility for learning

(Paterson Public School No. 2, 1999)
Paterson
School No. 2
Evolving Lesson Study Goal

School Goal: Creating a community of responsible learners

– Lesson Study Goal:

    – Problem Solving, Student Engagement
    – Note Taking, Blackboard Organization, Student Presentation
  • Maximizing learning for every student (2004-2005)
Working on a “Research Lesson”

- Researching & Planning
- Discussing & Recording
- Implementing & Observing
Lesson Study Cycle

Lesson Study Group

- Develop a lesson plan
- Research Lesson Participants
  - Teachers from other schools within the district
  - Teachers from other districts

- Revise the lesson plan
- Post-Lesson Discussion
- New Ideas for Teaching and Learning

Research Lesson Participants

- Revise lesson plan and examine in own classroom
- Reexamine lesson in own classroom using the lesson plan
Lesson Study as PLC

• DuFour’s 3 Principles of a True PLC
  – Ensuring that students learn (observing student learning in the classroom)
  – A culture of collaboration (collegial dialogue and planning)
  – A focus on results (data collection and reflection)
Why Lesson Study?

Through the gradual improvement of individual lessons, and through the knowledge developed and shared during this process, the Japanese system enables the steady improvement of teachers and teaching.

(Stigler & Hiebert, 1999, p. 127)

(because of lesson study) “…Japanese mathematics instruction has transformed from teacher-directed instruction to child-centered instruction during the past 15 years.”

(Takahashi and Yoshida 2004)
Japanese math lessons

“In Japan, teachers appear to take a less active role, allowing their students to invent their own procedures for solving problems. And these problems are quite demanding, both procedurally and conceptually. Teachers, however, carefully design and orchestrate lessons so that students are likely to use procedures that have been developed recently in class.”

Sigler & Hiebert, 1999, p.27
“When we watched a Japanese lesson, for example we noticed that the teacher presents a problem to the students without first demonstrating how to solve the problem. We realized that U.S. teachers almost never do this. … The (U.S.) teacher almost always demonstrates a procedure for solving problems before assigned them to students.

Stigler & Hiebert, 1999, p.77
The Teaching Gap (Stigler & Hiebert, 1999)

Mathematics Contents Studnets are Studying

Germany: Law 34, Medium 38, High 29
Japan: Law 51, Medium 39, High 11
United States: Law 89, Medium 11, High 0

Percentage of lessons rated as having low, medium, and high quality of mathematical contents
Learning Mathematics with Understanding

Average percentage of topic in eighth-grade mathematics lessons that contained concepts that were “Developed” or “Stated”
Student Presentation of Alternative Solution Methods

Percentage of lessons that included student-presented alternative solution methods
Average percentage of seatwork time spent in three kinds of tasks.
Why Lesson Study?

Through the gradual improvement of individual lessons, and through the knowledge developed and shared during this process, the Japanese system enables the steady improvement of teachers and teaching.

(Stigler & Hiebert, 1999, p. 127)

• (because of lesson study) “…Japanese mathematics instruction has transformed from teacher-directed instruction to child-centered instruction during the past 15 years.”

(Takahashi and Yoshida 2004)
Why Lesson Study?

• In order to improve practices, we need to reflect on practices. Lesson study provides a mechanism for systematic reflection on teaching practices.
Teachers’ Activities to Improve Instruction

Choose curriculum, write curriculum, align curriculum, write local standards, reflect on data

Plan lessons individually

Plan lessons collaboratively

Watch and discuss each other’s classroom lessons

C. Lewis (2002)
Why Lesson Study?

• Because Lesson Study puts teachers in charge of their own professional development.
## Professional Development

<table>
<thead>
<tr>
<th>TRADITIONAL</th>
<th>Lesson Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Begins with answer</td>
<td>• Begins with question</td>
</tr>
<tr>
<td>• Driven by expert</td>
<td>• Driven by participants</td>
</tr>
<tr>
<td>• Communication trainer → teachers</td>
<td>• Communication among teachers</td>
</tr>
<tr>
<td>• Relationships hierarchical</td>
<td>• Relationship reciprocal</td>
</tr>
<tr>
<td>• Research informs practice</td>
<td>• Practice is research</td>
</tr>
</tbody>
</table>

By Lynn Liptak, Paterson School #2, New Jersey.
VIDEO
Lesson Study Resources

• Publications
Lesson Study Resources


Lesson Study Resources

• Web Pages
  - Chicago Lesson Study Group
    http://www.lessonstudygroup.net/
  - Lesson Study Group at Mills College
    http://www.lessonresearch.net
  - Center for Lesson Study at William Patterson University
    http://www.wpunj.edu/coe/lessonstudy/
  - APEC Human Resource Development Working Group
    http://hrd.apecwiki.org/index.php/Lesson_Study
Lesson Study Resources

• Events
  – Lesson Study Conference at William Paterson University, March 10-11, 2011 (check Center for Lesson Study webpage)
  – Tenth Chicago Lesson Study Conference, May 11-14, 2011. Theme: Bringing the Common Core State Standards to Life through Lesson Study. (check Chicago Lesson Study Group webpage)

• Other
  – Global Education Resources
    http://www.globaledresources.com
What Does Lesson Study Afford?
Classroom-based research on teaching and learning of mathematics

- During lesson study, teachers investigate *instructional materials* and *lesson goals* by examining *students’* thinking, understanding, and learning.

- This process generates ideas for improving instructional materials, student learning, and teaching.
Focused, coherent, and consistent education for all students

- Collaborative nature of lesson study offers the promise of a focused, coherent, and consistent education for all students

- Lesson study helps to develop a shared understanding of:
  - Curriculum aligned with standards
  - Instruction
  - Goal of education
  - Students
Developing life-long learners

• Lesson study is professional learning, not lesson development
  ✓ Provides opportunities for teachers to think deeply about instruction, learning, curriculum, education
  ✓ Develop the steady, continuous improvement of teaching

• Teachers become:
  ✓ Life-long learners
  ✓ Independent thinkers
  ✓ Problem solvers
  ✓ Researchers
Beginning lesson study and embarking on the road to improving teaching is within the reach of any teacher or group of teachers with enthusiasm and commitment to the profession.

(Takahashi and Yoshida, 2004)
Thank You!!