Lesson Study
How Can It Build System-Wide Improvement?

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Catherine Lewis
Mills College, Oakland, CA

www.lessonresearch.net
clewis@mills.edu
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Presentation Agenda

• Revisit lesson study process
• Pathways for teacher learning
• “Existence proof” of power in U.S.
• How lesson study builds system-wide improvement
Lesson Study is Spreading
Will it be one more fad?

• 1999: 0 sites

• 2000: First US public research lesson

• 2006: 318 Schools, 1222 Teachers, 24 Universities

We lack good data, so please fill out sheet. Group list available at www.lessonresearch.net
Lesson Study During 2006

From lessonresearch.net/What’s new?

Teachers: 1222
Schools: 318
Universities: 24

We lack good data, so please fill out sheet as we talk about each item
Lesson Study Cycle

1. STUDY
   Study curriculum and standards
   Consider long-term goals for student learning and development

2. PLAN
   Select research lesson
   Anticipate student thinking
   Plan data collection and lesson

3. DO RESEARCH
   LESSON
   One team member teaches, others collect data

4. REFLECT
   Share data
   What was learned about student learning?
   What are implications for this unit and more broadly?
   What learnings and new questions do we want to carry forward in our work?
How does lesson study improve instruction?

Visible Features of Lesson Study

- Planning
- Curriculum Study
- Research Lesson
- Data Collection
- Discussion
- Revision
- Etc.

Instructional Improvement
Visible Features of Lesson Study

• Planning
• Curriculum Study
• Research Lesson
• Data Collection
• Discussion
• Revision
• Etc.

Key Pathway

• Lesson Plans Improve

Instructional Improvement

A Common (Mis) Conception of Lesson Study
How Does Lesson Study Improve Instruction?

Visible Features of Lesson Study

- Planning
- Curriculum Study
- Research Lesson
- Data Collection
- Discussion
- Revision
- Etc.

Pathways

- Increased knowledge of subject matter and instruction
- Increased knowledge of students & student thinking
- Stronger collegial networks
- Stronger connection of daily practice to long-term goals
- Stronger motivation to learn and belief that changes make a difference
- Improved materials

Instructional Improvement
Can patterns help us find an easy way to answer the question:

How many seats fit around any number of triangles, arranged in a row as shown?
<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Triangle Tables</td>
<td>Number of Seats</td>
</tr>
<tr>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>
Research Lesson 1
• All students filled out chart correctly but few could verbalize meaning of +2 pattern

Research Lesson 2
• Chart eliminated, students solved individual problems, shared findings
• Students showed their counting methods
• Many students could verbalize meaning of +2 pattern
Highlands School (K-5)

- 2000-01 1 volunteer LS group
- 2001-02 Most faculty join LS groups
- 2002-03 School-wide LS; continues through present

*Kappan*, Dec. 2006 “Lesson Study Comes of Age in North America”
Percent Statements Focused on Student Thinking

Year 1
Year 3

Planning
Debrief

School-wide Lesson Study School
Percent Statements Referring to Established Sources (Standards, research, curricular, named programs or expert)

- Year 1: 2%
- Year 3: 18%
Global Evaluation

e.g. “That was a great lesson”

Fixed Ability

e.g. “he is a low student”
Percent Statements on Evaluation/Ability

Year 1

Year 3

Planning

Debrief
3-year net math increase for students in lesson-study school more than triple that for district (F=.309, 845 df p<.001)
Pathway 1: Teachers’ Knowledge of Subject Matter & Instruction

- Study research and research-based materials
- Do lesson tasks, share solutions
- Collaborate with knowledgeable outsiders
Pathway 2: Teachers’ Knowledge of Students and Student Thinking

- Observe students, record & share observations
- Review student written work
- Read research
- Involve knowledgeable outsiders
Pathway 3: Teachers’ Collegial Networks

• Use protocols to build safety, efficiency
• Opportunities to learn from
  New ideas
  Conflicting ideas
  Revision & integration of ideas
• Teachers come to feel responsible for others’ practice as well as own practice
• Shared vocabulary, linked to practice
Pathway 4: Connection Between Long-term Goals and Daily Practice

- Develop research theme that includes long-term goals (ideal, actual)
- Include long-term goal in lesson planning
- Include long-term goal in data collection
Pathway 5: Teachers’ Motivation to Learn

- Inspired by instruction, reading, tasks
- Wanting your students to be as interested in learning as the students in the research lessons
- Identity changes, e.g., kindergarten teacher sees algebra is relevant; “excellent” teacher is one who keeps learning
Pathway 6: Belief that We Can Make a Difference in Student Learning

• Seeing that small changes in lesson make a dramatic difference for students

• Together getting traction on difficult problems (“When 3 people gather there is a genius”)

• Seeing the power of collective, incremental change (vs. silver bullet)
Pathway 7: Improved Lesson Plans and Materials

- Tools for collaborating, studying student thinking
- Lesson plans and instructional knowledge: spread through textbooks in Japan
Learning From and In Practice

Based on NRC, 2001 & Cohen & Ball, 2000
System-wide Change

- Teachers use lesson study to **pull** high-quality resources in to their sites (teachers are not just **pushed**) and to solve problems they help define.

- Teachers, researchers, policymakers, foundations see lesson study as **the important proving ground**, where a shared agenda is negotiated.

- Textbooks and teachers manuals reflect what is learned through lesson study.
I like stretching my own brain.

Teacher from San Mateo, California
If we had to use one word to describe our work for the past two years, it would be COURAGE.

... to maintain this philosophy and pedagogical thinking as we struggled with our deficient MCAS scores ... overcrowded classrooms...

Lesson Study Communities Team Reflection, Massachusetts
I feel the biggest mistake we can make when pitching lesson study to US teachers is to tell them it is easy and painless. It is hard and possibly painful and they should prepare for it. The rewards, however, are fantastic. Real, concrete, observable improvement occurs in teaching.

Middle School Math Teacher, Paterson School #2, New Jersey
Further Information

Lesson Study: A Handbook... (Lewis) [www.rbs.org](http://www.rbs.org)

Building Our Understanding of Lesson Study (Wang-Iverson & Yoshida; [www.rbs.org](http://www.rbs.org))

Mills College Lesson Study Group
[www.lessonresearch.net](http://www.lessonresearch.net)

Lesson Study Communities Project in Secondary Mathematics [www2.edc.org/lessonstudy/](http://www2.edc.org/lessonstudy/)

Global Education Resources [www.globaledresources.com](http://www.globaledresources.com)

Univ. of Wisconsin [www.uwlax.edu/sotl/lsp/](http://www.uwlax.edu/sotl/lsp/)
Email address: Clewis@mills.edu

Website address: lessonresearch.net