Lesson Study in North America
Progress and Challenges

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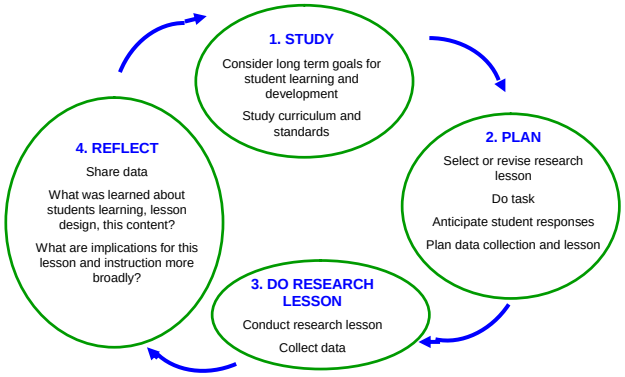
Lesson Study



Areas of Growth in U.S.

- Interest
- Resources and Tools
- Proof of Effectiveness

Progress 1: Growth of Interest

- 1999: 0 sites
- 2004: 32 states, 150 lesson study clusters/ groups, 2300 teachers
- Listserves with 900+ members
- Many public research lessons

Source: www.tc.columbia.edu/lessonstudy/timeline.html

Until lesson study we never discussed the value of the content being taught. …Never had those discussions involved…problem-solving techniques, how to develop a particular concept…what to expect for outcomes.

Lesson Study Communities Teacher (EDC), Massachusetts

I like stretching my own brain.

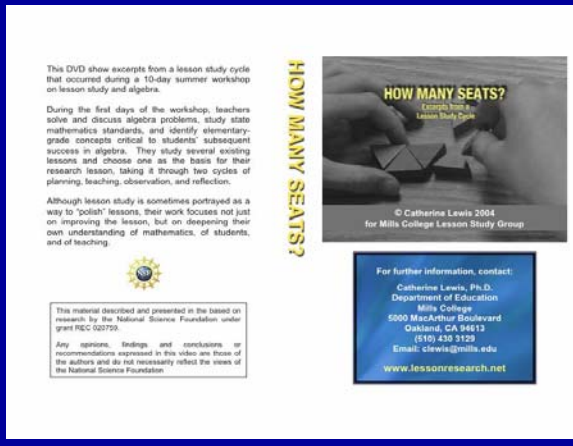
Teacher from San Mateo, California

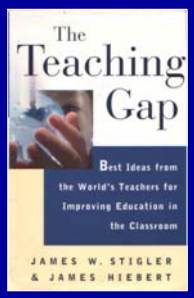
Being able to talk together as a whole group is such a big part of lesson study… you're not just going down this little road of your own.

Teacher from North Marion Middle School, Oregon, NWREL Collaborator

Progress 2: Tools and Resources

- Video of US & Japanese lesson study
  www lessonresearch.net, globaledresources.com
- Lesson Study Books & Handbook
  www rbs.org
- Articles, reports
- Protocols at websites

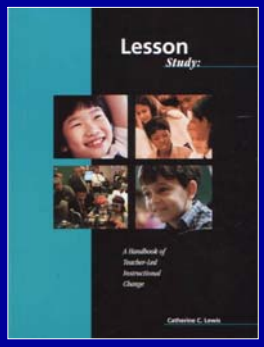




The Teaching Gap

Stigler & Hiebert (1999)

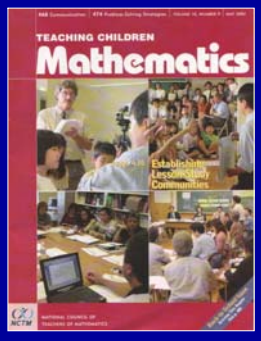
The Free Press



Lesson Study: A Handbook of Teacher-Led Instructional Change

Lewis (2002)

Research for Better Schools (RBS)

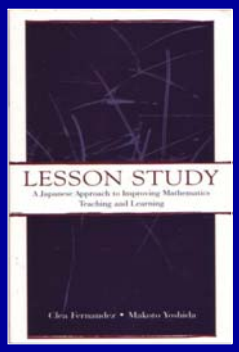


"Ideas for Establishing Lesson Study Communities"

Takahashi & Yoshida

Teaching Children Mathematics (2004)

National Council of Teachers of Mathematics (NCTM)



Lesson Study: A Japanese Approach to Improving Mathematics Teaching and Learning

Fernandez & Yoshida (2004)

Lawrence Erlbaum Associates, Publishers

Building Our Understanding of Lesson Study

Wang-Iverson & Yoshida (2005)

Research for Better Schools (RBS)

www.rbs.org

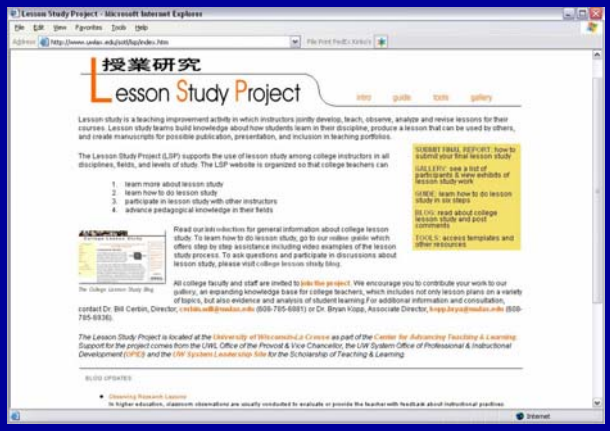
Too Many Websites to List!

Education Development Center
www2.edc.org/lessonstudy/lessonstudy/

Northwest Regional Lab
www.nwrel.org/msec/lessonstudy/index.html

Global Education Resources
www.globaledresources.com/

Univ. of Wisc. Lesson Study Project
www uwlax.edu/sotl/lsp



Growth of Websites that Provide Lesson Study Tools & Information

Mills College Lesson Study Group
www lessonresearch.net

Research for Better Schools
www rbs.org

Global Education Resources
www.globaledresources.com/

Teachers College Lesson Study Research Group
www tc.edu/lessonstudy/

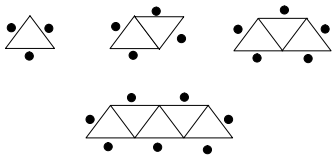
Diverse Lesson Study Settings

- Many Levels (university, high school, middle school, preschool)
- Many Subjects (e.g., social studies, second language learning, science, special ed)
- Many Themes (e.g, "accountable talk," understanding, interest, fluency)

Progress 3: Proof of Effectiveness

- Lesson Study Cases
- School-wide Lesson Study Site

For any given number of triangles arranged as shown,
how many circles are there?



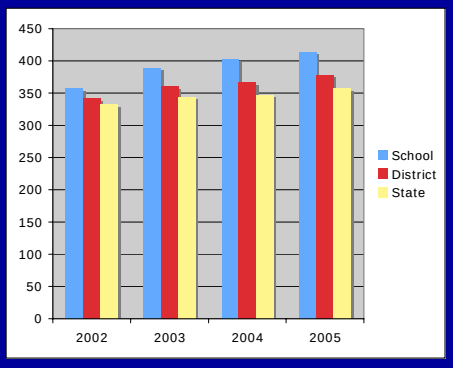
INPUT Number of Triangle Tables	OUTPUT Number of Seats
1	3
2	4
3	
4	
5	
6	

Video Context

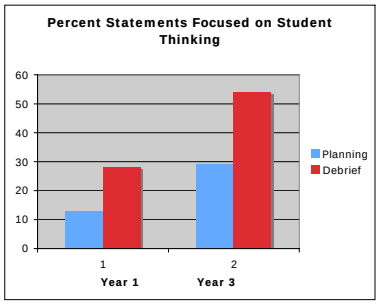
- Voluntary summer workshop
- "Dive-in" lessons
- Plan-teach-revise-teach

Teachers' Learning

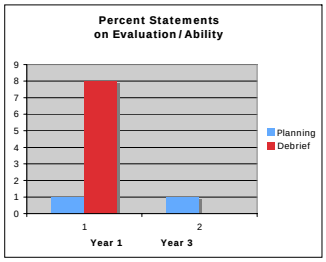
- Distinguish "plus one" and "plus two" pattern
- Connect numerical and geometric patterns
- Consider impact of chart on students
- See importance of student counting methods



Math Scale Scores, State Achievement Test



Schoolwide Lesson Study School



Challenges in U.S.

1. Access to Rich Mathematics
2. Simplistic Research Models
3. Need to Learn Across Sites and From Japanese Colleagues

Challenge 1: Access to Rich Mathematics

"Big deal, an A in math. That would be a D in any other country."

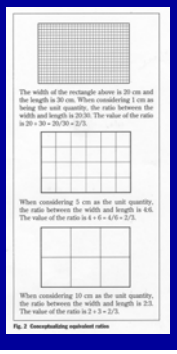
A fourth-grade class needs 5 leaves each day to feed its 2 caterpillars. How many leaves would they need each day for 12 caterpillars?

Answer: _____

Use drawings, words, or numbers to show how you got your answer.

(NCTM, 2002)

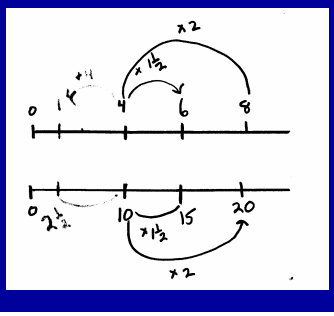
Asian Aids to Understand Proportional Reasoning



(Lo, Watanabe, & Cai, 2004)

Ideas from Asian Curricula

- Double number line can summarize methods



Ideas From Planning

- These methods differ from the standard cross-multiply and divide algorithm

(McDougall Littell, 2004)

EXAMPLE 1 Using the Cross Products Property

Use the cross products property to solve the proportion $\frac{3}{m} = \frac{5}{15}$.

Solution

$\frac{3}{m} = \frac{5}{15}$	Write original proportion.
$3 \cdot 15 = m \cdot 5$	Cross products property
$\frac{3 \cdot 15}{5} = \frac{m \cdot 5}{5}$	Divide each side by 5.
$9 = m$	Simplify. m is by itself.

ANSWER The solution is 9.

CHECK ✓ You can check the solution by showing that $\frac{3}{9}$ and $\frac{5}{15}$ simplify to the same fraction:

$\frac{3}{9} = \frac{1}{3}$ and $\frac{5}{15} = \frac{1}{3}$, so $\frac{3}{9} = \frac{5}{15}$.

Challenge 2: Simplistic Research Models

What Is Good Research Model for Lesson Study?

Lesson Study as

- Aspirin?
- Recipe?

OR

- Flexible Learning System With Core Principles?
- Cultural Change

How does lesson study improve instruction?

Visible Features of Lesson Study

- Consider Goals
- Study Curriculum and Standards
- Plan and Conduct Research Lesson
- Collect Data
- Debrief Lesson
- Use Debrief to Inform Instruction

→ ? → **Instructional Improvement**

How does lesson study improve instruction?

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→ ~~Improved Lesson Plans~~ Not just lesson plan → **Instructional Improvement**

How does lesson study improve instruction?

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- Consider Goals
- Study Curriculum and Standards
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- Use Debrief to Inform Instruction

→

Intervening Changes
- Teachers' Knowledge
- Teachers' Commitment-Community
- Teaching & Learning Resources

→

Instructional Improvement

What is Lesson Study?

A system of collaborative learning from live instruction that includes most features in the left column and that creates, over time, an increase in
- Teachers' Knowledge
- Teachers' Commitment-Community for Instructional Improvement
- Teaching-Learning Resources

How Does Lesson Study Improve Instruction? (Hypotheses)

1. Teachers' Knowledge
2. Teachers' Commitment-Community for Instructional Improvement
3. Teaching-Learning Resources

1. Teachers' Knowledge

- Subject matter
- Instruction
- Student thinking
- Data collection in classrooms
- Connections between daily practice and long-term goals

2. Teachers' Commitment-Community for Instructional Improvement

- Belief that improvement is needed and possible
- Capacity to work with colleagues
- Sense of accountability to valued practice community
- Data collection in classrooms
- Connections between daily practice and long-term goals

3. Teaching-Learning Resources

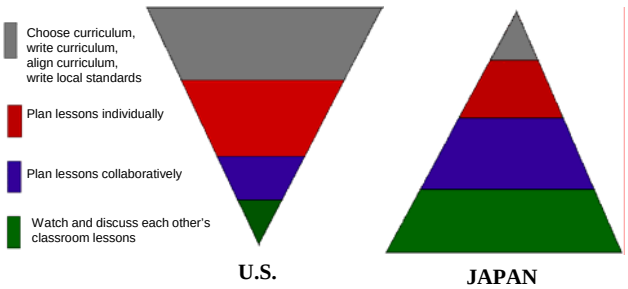
- Tasks that reveal student thinking
- Data collection protocols
- Meeting protocols that support exchange of ideas

Challenge 3: Need to Learn Across Sites

Need National Learning Community on Lesson Study. Difficulties:

- Geographic expanse of U.S.
- Lack of tradition, funding for cross-site lesson study sharing
- Commercial motives undermine learning across sites in some cases

Teachers' Activities to Improve Instruction



Lesson Study in the US has progressed!

Thanks to the hard work of

- Many courageous US teachers
- Many generous Japanese colleagues
- Some far-sighted organizations & administrators

This experience has affected the way some of us structure our lessons, and has given us the courage to try challenging lessons

Massachusetts

Great trust has developed over time that allows us to be both teachers and learners with each other. Isn't that what it's all about?

Massachusetts

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…

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.

New Jersey

Thank You

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