

Lesson Study: Teachers learn how to improve instruction

Tools for Schools, February/March 2004

Presented by Michael Romero



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LESSON STUDY

Teachers learn how to improve instruction

BY JOAN RICHARDSON

When Becky LaChapelle and Nancy Sundberg joined a lesson study team in Rochester, N.Y., two years ago, they were expecting to learn how to improve their ability to teach mathematics. What they didn't expect was how much they would learn about improving student learning.

"It has totally changed my practice. I don't look at a lesson the same way. Every lesson I do, whether it's a study lesson or a day-to-day lesson, I always think 'What is the student response going to be?', 'What do I want students to show so I will know they have learned this?'," said LaChapelle, math specialist at Kodak Park School in Rochester.

The process of lesson study — a practice imported to the U.S. from Japan — stands apart from many professional development practices because it focuses on "our children in our classrooms," said Sundberg, a 4th-grade teacher at the Children's School of Rochester.

In the words of Catherine Lewis, one of the leading U.S. researchers on lesson study, "tests and student work may offer information about *what* to improve, (but) lesson study also sheds light on *how* to improve."

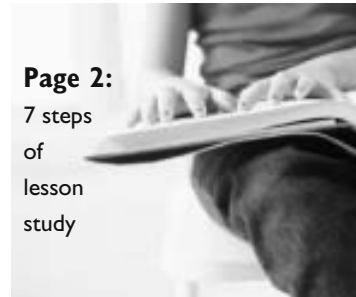
"Lesson study" is different from "lesson planning" because it focuses on what teachers want students to learn rather than on what teachers plan to teach. In lesson study, a group of teachers develops a lesson together and ultimately one of them teaches the lesson while the others observe the student learning. The entire group comes together to debrief the lesson and often revises and re-teaches the lesson to incorporate what has been learned.

Lesson study is as much a culture as a professional development activity, said Tad Watanabe, a professor of mathematics education at Pennsylvania State University who worked with the Rochester lesson study group. Being successful at lesson study requires teachers to feel comfortable sharing with each other and observing each other teaching.

Having a collaborative culture in the first place benefits a group's ability to engage in lesson study, he said. But lesson study may also show teachers the value of working together more closely.

Developing the lesson as a team signals that the lesson is owned by all participants. It is the lesson and the learning that it generates that is being evaluated during the observation, not the teacher. Observers are told to watch for evidence of student thinking, student learning, and student confusion. They make notes on what students say, whether they are collaborating, whether they are engaged during the lesson, and the work they produce as a result of the lesson.

Lesson study is one of those professional development strategies that is deceptively simple on the surface and remarkable complex as you begin to probe beneath the surface. What follows is an overview of the steps involved in lesson study, each of which can be expanded greatly.



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7 steps
of
lesson
study

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I. Form a lesson study team.

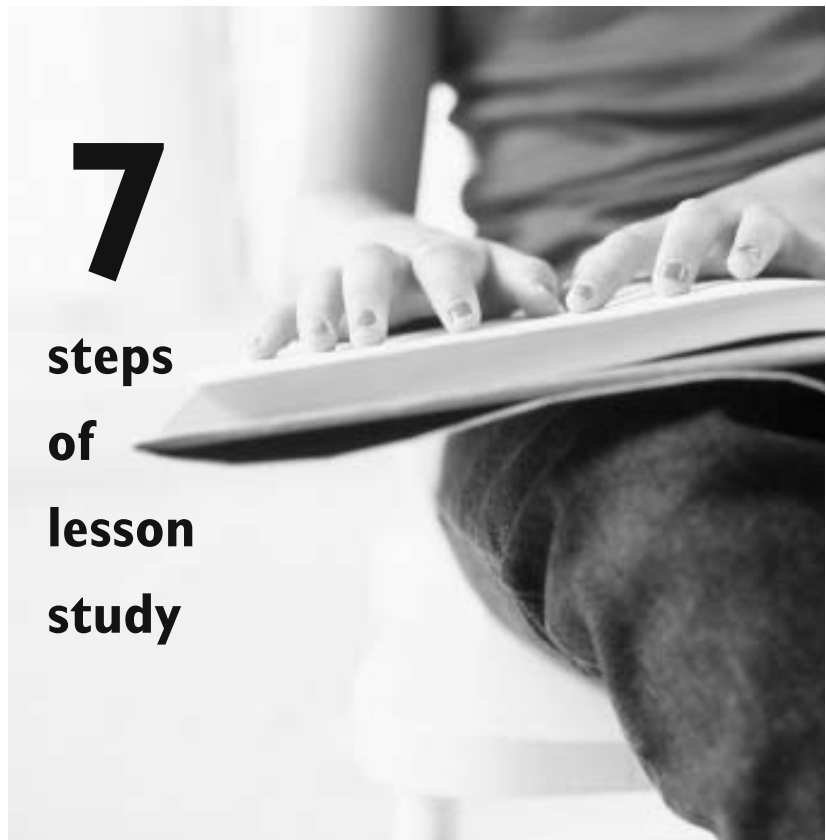
Begin by recruiting teachers interested in the concept of lesson study and who work with a similar group of students or a similar topic. For example, lesson study teams might be composed of 4th-grade teachers who work in three different schools, teachers of 8th-grade American history in one middle school, or specialists who help other teachers integrate technology into their instruction.

In Rochester, 15 teachers from several schools worked on two different lesson studies for two years. All of the participants were elementary school teachers who had been part of a summer Thinking Math institute offered by the American Federation of Teachers. Facilitator Alice Gill, associate director in AFT's educational issues department, suggested lesson study as a way to follow-up and transfer what teachers had learned in the institute. Because Gill works in Washington, D.C., much of the team discussion about the lessons occurred online, but the team did reassemble in order to observe and debrief the completed lesson.

One of the teachers can facilitate the team or, as in Rochester's case, an outside person may be facilitator.

Each lesson study team also needs a "knowledgeable other" to provide perspective and a broader view of the issues. These individuals may also be known as outside commentator, evaluator, or outside advisor. Typically, knowledgeable others are university professors who bring a depth of expertise in the given content area but they could be districtwide curriculum specialists or specialists from a regional education agency.

Watanabe was Rochester's knowledgeable other. He cautions that anyone who is selected for that role should come in with the mindset of being a learner. "You have something to share but you have to have this notion that you are also there so you can learn from it," he said. When knowledgeable others have that learning mindset, he said, it sends a message that lesson study is a process for professional learning.



7 steps of lesson study

2. Focus the lesson study.

The lesson study team selects a research theme that captures schoolwide goals as well as the academic content goals for students. If the teachers in the group are from a single grade level, they will choose a subject area in which to focus their work.

Then, the team identifies a unit or lesson on which to focus. They thoroughly discuss the unit and agree about what they are trying to achieve with the lesson. The crucial question is: *What do we want students to know and be able to do when this lesson is concluded?* In order to answer this question, teachers also must understand how this lesson links to others in the subject, both in this grade and future grades.

One of Rochester's study lessons was "What happens to area when you double the sides of a square?" The second was "What is the value of 25 in 2,500?"

This part of the work could take from one to four meetings.

3. Plan the study lesson.

The bulk of the lesson study team's work occurs in the planning of the lesson. This may require between three and six face-to-face meetings or several months of online discussion.

As they begin, teachers share and discuss their existing lessons related to the topic, explaining what they believe has been successful and where they believe the lessons could be improved.

The facilitator keeps the conversation moving by focusing the discussion on the lesson that these teachers will develop together.

Developing the lesson as a group signals that the lesson is owned by all participants. This is key because it sets the stage for the observation in which the lesson — the product of the entire team — and the learning that it generates is being evaluated and not the teacher who is presenting the lesson as a representative of the team.

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A crucial piece of planning the lesson includes anticipating student responses to various aspects of the lesson and preparing appropriate teacher responses: If the student does or asks X, then the teacher does Y. The group also identifies what students will say and do that will signal that they have learned what the teacher intends to have them learn.

In assisting the planning, the facilitator and the knowledgeable other walk a fine line when guiding teachers, Gill said. In her Rochester experience, for example, she realized teachers were making an inaccurate assumption. Gill refrained from pointing out their error, believing that they would learn by discovering the error on their own.

“These are adults. You have to respect what wonderful experiences they have and all of that. You can’t leave it all so wide open that they wander off and over a cliff. But you do have to allow them to make the decisions,” Gill said.

4. Prepare for the observation.

The lesson study team may want to invite additional observers — such as the superintendent, union president, and lead teachers — to the study lesson. The team ensures that each person at the observation knows the expectations of the lesson study and the ground rules for observing the lesson. (See Page 5.) All observers will collect data that will be shared in the debriefing. The “data” are the comments of students and the work students produce during the lesson.

In some situations, the team assigns certain observers to closely watch the work and comments of particular students. (See Page 4.)

The lesson study team prepares copies of the lesson plan, seating chart, and any worksheets that students will be using.

The lesson study team prepares the classroom so observers can circulate freely among students or stand comfortably around the periphery during whole-class instruction.

5. Teaching and observing the lesson.

On the day of the study lesson, all of the observers gather in one area in advance and everyone goes to the room together. The teacher probably will introduce the observers as a group before beginning the lesson.

Having observers in the room is what enables the team to learn so much about the lesson being taught. As Rochester facilitator Alice Gill said, “it’s 14 pairs of eyes observing in the classroom and seeing what one teacher simply cannot pick up if she’s the only one person in front of that classroom.”

“A teacher could not possibly have walked around and written down the comments of all 25 students. But the other adults who were observing were writing down the conversations they overheard,” said LaChapelle.

“Even though it’s a study lesson, we’re still managing the classroom. Someone has to go to the bathroom or somebody doesn’t have a glue stick and the teacher has to handle that. But everyone else was free to just observe. They could really hone in on the conversation and what students were thinking and doing,” Sundberg said.

6. Debriefing the lesson.

Rochester teacher Nancy Sundberg calls the debriefing “the meat of lesson study” because this is the time when the lesson study teams share their learning from the observation.

The entire lesson study team plus any additional observers gather following the lesson to begin the debriefing. Some groups may choose to continue the debriefing in later meetings as well. See Page 6 for a more detailed structure for the debriefing.

7. Reflect and plan the next steps.

Depending on what teachers learn in the debriefing, the team may decide to revise and re-teach the lesson. Calendar issues and other circumstances may make that difficult in some schools.

Lesson Study Cycle

1. Goal-setting and planning

- Select planning team.
- Identify goals for student learning and long-term development.
- Collaboratively plan instruction designed to bring these goals to life, including a “research” or “study” lesson that will be observed.



2. Research or study lesson

- One planning team member teaches classroom lesson while other team members collect data on student thinking, learning, engagement, behavior, etc.



3. Lesson debriefing

- Share and analyze data collected at research or study lesson.
- What is the evidence that goals for student learning and development were fostered?
- What improvements to the lesson and to instruction more generally should be considered?



4. Consolidation of learning

- If desired, refine and re-teach the lesson and study it again.
- Write report that includes the lesson plan, student data, and reflections about what was learned.
- Share the lesson with all members of the team and other interested persons.

Preparing for observation of the study lesson

Assign observers key tasks.

- Are there particular students who should be observed?
- Do you want someone to keep time? Collect student work at the end of the lesson? Make notes on anything written on the blackboard? Record any disruptions that occur during the lesson?

If you are going to videotape the lesson:

- Determine who will be the videographer.
- Determine where you will station the camera(s) to record both the teacher and students.
- Ensure that you secure permission slips from students in advance. (Familiarize yourself with your district's policy regarding videotaping of students.)

Prepare materials for observers.

- The lesson plan. Include the goal of the lesson, where the lesson fits in a unit, where the lesson fits across grades in the entire curriculum, how it relates to school goals, anticipated student responses, and progression of the lesson. Leave plenty of space so observers can record their notes.
- Copies of student work sheets.
- Seating chart including names of students and space to write notes.

Determine where observers will be stationed in the room as the teacher presents the lesson.

Arrange the classroom so observers can circulate around students as they work without disrupting their learning.



Observing the study lesson

Observers should take these actions while observing:

- ▶ Make notes on individual student comments and conversations, noting the names of students.
- ▶ Note situations in which students are collaborating or choosing not to collaborate.
- ▶ Look for examples of how students construct their understanding through their discussions and activities.
- ▶ Document the variety of methods that individual students use to solve problems, including errors.

Observers should consider these questions while observing:

1. Was the goal clear? Did the supporting activities contribute effectively to achieving the goal?
 Yes No
2. Was the flow of the lesson coherent, and did it support students' learning of the concept?
 Yes No
3. Were the problems and the materials helpful in achieving the goal of the lesson?
 Yes No
4. Did the classroom discussions help promote student understanding?
 Yes No
5. Was the content of the lesson appropriate for students' level of understanding?
 Yes No
6. Did students apply their prior knowledge to understand the content of the lesson?
 Yes No
7. Did the teacher's questions engage and facilitate student thinking?
 Yes No
8. Were student ideas valued and incorporated into the lesson? Did the lesson summary refer to student theories or ideas?
 Yes No
9. Was the lesson summary consistent with the lesson goal?
 Yes No
10. How could the teacher reinforce what the students learned during the lesson?

Respect the natural atmosphere of the classroom

- Minimize side conversations during the lesson.
- Remain in the classroom during the entire lesson to capture how the lesson is set up, its flow, and its conclusion.
- Do not block the students' view of the blackboard or any area where the teacher is writing and posting materials or demonstrating an activity.
- Do not block the video camera.
- Circulate freely when students are working individually or in groups but move to the side or back of the room during whole class discussions.
- Minimize interactions with students. Refrain from teaching or assisting the students. Occasional interaction is permissible if done discreetly and with the purpose of understanding student thinking.

Source

"Guidelines for Lesson Study Observations and Debriefings," *RBS Currents*, Spring/Summer 2002 (Vol. 5, No. 2). Available online at www.rbs.org/currents/0502/guidelines.shtml

Debriefing the study lesson

Preparation

Even if you are doing some of the lesson study preparation in an online format, the initial debriefing should be done face-to-face on the same day as the observed lesson.

In advance of the debriefing, members of the group that designed the lesson should assign themselves the following roles: facilitator who keeps the conversation moving, a recorder who take notes and will provide a written summary of the debriefing, a time keeper, and a commentator.

Determine in advance how much time you will devote to the debriefing.

Members of the group that designed the lesson should arrange themselves at the front of the room in panel-style. This set-up emphasizes that it is the entire group and not just the teacher who taught the lesson who will be receiving the feedback from the observers.

Directions

1. Facilitator introduces everyone in the room and reminds participants of each person's role during the observation.
2. Facilitator reviews the agenda for the debriefing. *2 minutes.*
3. Facilitator briefly introduces the goals of the lesson study. *5 minutes.*
4. Facilitator describes the norms or expectations for how the group will provide feedback. There are three key norms for the debriefing:
 - 1) During this discussion, only one person speaks at a time.
 - 2) Everyone will be allowed an opportunity to speak.
 - 3) Observers should provide specific evidence for their observations and not merely offer opinions about the lesson.
5. The teacher who presented the lesson speaks first, commenting on his or her reactions to the lesson. The teacher should address what actually occurred during the lesson — what worked, what did not work, what could be changed. *15 to 20 minutes.*
6. Each planning group member speaks.
7. In a round-robin fashion, the facilitator calls upon observers to offer his or her feedback, ensuring that each person has an equal opportunity to share their observations.
8. The knowledgeable other summarizes the discussion.
9. The facilitator thanks the participants and ends the meeting with an announcement of the next step.

Maintain a respectful atmosphere

- Observers should begin their comments by identifying the positive aspects of the lesson.
- Ensure that the teacher who taught the lesson is not made to feel like he or she is being personally criticized.
- Do not focus on the success or failure of the lesson or on the teaching style.
- Select key, relevant observations. Avoid producing a “laundry list.”
- Be an active participant. Try to contribute to the debriefing without repeating what has already been stated.

Sources

“Lesson Study Protocol” developed by the Lesson Study Research Group at Teachers College, Columbia University. The protocol is regularly updated. To see the latest version, please go to www.tc.columbia.edu/lessonstudy/tools.html.

“Guidelines for Lesson Study Observations and Debriefings,” *RBS Currents*, Spring/Summer 2002 (Vol. 5, No. 2). Available online at www.rbs.org/currents/0502/guidelines.shtml

Resources for lesson study

“Everywhere I Looked — Levers and Pendulums”

Catherine Lewis, *Journal of Staff Development*, Summer 2002 (Vol. 23, No. 3).

Describes the process of lesson study in Japan and explores differences between U.S. and Japanese supports for such activity. Available online at www.nsd.org/library/publications/jsd/lewis233.cfm



Lesson Study: A Handbook for Teacher-Led Instructional Change

Catherine Lewis. Philadelphia: Research for Better Schools, 2002.

This handbook illuminates both the key ideas underlying lesson study and the practical support needed to make it succeed in any subject area. Provides practical resources including schedules, data collection examples, protocols for lesson discussion and observation, and instructional plans for mathematics, science, and language arts. Includes contributions by U.S. lesson study pioneers Lynn Liptak, Tad Watanabe, and Makoto Yoshida. Order from Publications Department, Research for Better Schools, 112 N. Broad St., Philadelphia, PA 19102-1510, (215) 568-6150 or online at www.rbs.org.

Lesson Study group at Mills College

Lessonresearch.net

Catherine Lewis, one of the pioneers of using lesson study in the United States, is a professor at Mills College and uses this web site as a repository for information on the topic. The web site includes documents and lesson plans and access to videotapes and handouts for lesson study workshops. Science is the primary interest of this group.

“Lesson Study: Japanese Method Has Benefit for All Students”

Joan Richardson, *Results*, December/January 2001.

Describes Paterson (N.J.) School No. 2's experiences with lesson study and the potential for lesson study to work in U.S. schools. Available online at www.nsd.org/library/publications/results/res12-00rich.cfm

Lesson Study Research Group web site

www.tc.edu/centers/lessonstudy

Clea Fernandez, a researcher at Teachers College, maintains this web site for sharing her work regarding lesson study. This site provides access to a listserv and discussion forum to connect educators who are using lesson study. Maintains a database of schools and districts across the United States that have worked with lesson study.

Research for Better Schools web site

www.rbs.org/lesson_study/

Contains extensive background information on developing lesson studies and links to numerous citations for lesson study. Includes a page on Frequently Asked Questions about Lesson Study and the Spring/Summer 2002 issue of *RBS Currents* newsletter on lesson study which is available at www.rbs.org/currents/0502/index.shtml.

Tools For Schools

ISSN 0276-928X

Tools For Schools is published five times a year (August, October, December, February and April) by the National Staff Development Council, P.O. Box 240, Oxford, OH 45056, for \$49 of standard and comprehensive membership fees. Periodicals postage paid at Wheelersburg, OH 45694.

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Ask Dr. Developer



Dr. Developer has all the answers to questions that staff developers ask.

(At least he thinks he does!)

Going online for lesson study

Q *There are not enough interested teachers in my school to do lesson study effectively. I'm intrigued by the possibility of doing a lesson study online. What's the best way to structure that?*

A Doing lesson study online may not be as easy as face-to-face work but it offers a great deal of potential for motivated educators.

The Rochester, N.Y., group referenced in the main article in this issue worked together for two years and had only a handful of face-to-face meetings. Most group members had participated in a summer Thinking Math institute together. But the "knowledgeable other" who joined the group did not meet the others until the observation lesson.

The Rochester facilitator was Alice Gill, associate director for educational issues at the American Federation of Teachers.

Gill said the optimal number of participants for an online discussion is probably 10 to 12, including the facilitator and the "knowledgeable other."

Using a listserv, Gill sent questions to

the group and set deadlines for each response to keep the discussion moving along.

As with any meeting, the facilitator must be sensitive to the group's needs to keep the conversation going or to pause and assess the group's discussion. Gill said she periodically paused the conversation and assembled ideas into documents that could be shared with all participants. That also made it possible to check that all participants shared the same understanding of the work to that point.

As the lesson plan is created, documents generated by the group can either be posted on a web site or sent to all participants as attachments.

If you decide to pursue an online lesson study, Gill recommends that the group meets face-to-face after the observed lesson. This should work out well since all of the participants will be together to observe the lesson anyway.

After the final debriefing, Gill recommends posting the group's final report on a web site. This provides ready access for group members as well as enabling other educators to view the work.

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