



ABRIDGED

Integrated Curriculum
Topic Study &
Lesson Study Tools

FACILITATOR'S GUIDE

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YOUR ROLE AS A FACILITATOR

The role of the facilitator is to assist the lesson study group in maintaining coherence in planning, focusing on how their lesson will address their research goals, and developing specific questions to assist lesson observers in gathering evidence of student learning. This evidence should yield information which is broadly applicable to their classroom practice. This facilitator's guide is a resource that can help you as you take on this role in your lesson study team.

“Drawing on the knowledge of group members, written resources, and consultation with knowledgeable outsiders, successful lesson study teams increase knowledge of subject matter and instruction in ways that are immediately useful to their teaching”

~ Catherine Lewis

BACKGROUND INFORMATION

What is Lesson Study?

Lesson study is an ongoing practice used in schools throughout Japan in which teachers collaborate to plan, observe, and refine a lesson. Lesson Study involves “backward design” which starts with the clarification of the lesson’s learning goal and then focuses on the design of instructional experiences that lead to the goal.

During the lesson design phase, teachers try to anticipate how students will interpret the subject matter, identify common student misconceptions, articulate what kinds of difficulties students may experience, and what kinds of experiences are likely to support their learning.

The pervasive concern with student learning throughout lesson study distinguishes it from other types of teaching improvement activities. In lesson study, teachers:

- base the lesson design on their ideas about how students learn
- observe student learning when the lesson is taught
- analyze observations of student learning after the lesson is taught
- use information about student learning to revise the lesson and inform instructional practice

COMMON MISCONCEPTIONS ABOUT LESSON STUDY

“Teachers do not have time for lesson study”

Lesson study is time consuming, but the time spent can be highly rewarding. Groups should consider strategies that maximize the available work time, such as assigning roles or distributing materials before the meeting. As much as possible, consider involving administrators in finding time and resources for your work.

“Lesson study is about creating a unique, original lesson”

Some teachers feel lesson study contains an expectation that they create an exciting new lesson. While teachers do spend time drawing up detailed lesson plans, lesson study is most powerful when the lesson is not isolated from the curriculum. Strongly consider taking lessons from existing materials. Ideally, the study lesson should be investigating issues teachers deal with every day.

“The outcome of a study lesson is one perfect, single lesson”

The reason for conducting a lesson study is to improve teaching practice. It is the learning gained by engaging in the intellectual process of the study that is the ultimate goal, more so than the product.

“There is an automatic research focus when a group goes through a lesson study”

Participating in a study lesson will not automatically instill the research focus that is central to conducting lesson study. To insure success, groups should emphasize writing a goal that suggests a hypothesis or a question to be investigated. They should create guidelines for observation to provide a framework for gathering evidence based on the goals of the study lesson.

GUIDELINES

FACILITATING PLANNING SESSIONS, LESSON OBSERVATIONS AND DEBRIEFINGS

These guidelines are intended to help the facilitator prepare and to focus all participants on the most important issues during their brief time together.

Planning Sessions

Before the Planning Session

1. Arrange for a location and time for the writing team to meet.
2. Make sure that necessary resources will be available at your planning session:
 - Copy of the lesson study tools for each member
 - *Science Curriculum Topic Study book*
 - *AAAS Atlas, Science for All Americans*, Benchmarks, ELAR documents, etc. (these resources are on-line if hard copies are not available).
 - The electronic template and a computer for recording your work (electronic template is available on the NCOSP website: www.ncosp.wvu.edu).

During the planning session

1. Assign a record keeper for your discussion.
2. Guide the writing team through the questions in the lesson study tools documents (green or orange book).
3. Ask reflective questions (*page 7 of this guide*) when prompted in the tools document or as needed to keep your group focused on their goals.
4. Make sure the conversation is not dominated by one or a few writing team members.

Observing the Study Lesson

Before the Study Lesson

1. Invite Outside Observers
 - Invite other teachers, administrators, and if possible at least one knowledgeable person from outside the school setting, such as a university-based educator. The number of observers will depend on how comfortable the group is with the lesson study process.
2. Assign Specific Tasks to Writing Team Members
 - Assign a recorder for whole class discussion sessions.
 - Assign members to observe and record specific student responses during the lesson, such as one student's responses or the role of student collaboration.
 - (*Optional*) Assign a videographer. While useful for record-keeping, videotaping is not a substitute for live observation. You may wish to consider videotaping your lesson debrief as well.
3. Prepare Materials for Observers, Including:
 - Points of evaluation: observation questions or guidelines developed by the writing team.
 - The lesson plan: include the goal of the lesson; where the lesson fits in the unit; where the lesson fits across grade levels in the entire curriculum; how it relates to the school goal; anticipated student responses; and progression of the lesson.
 - Copies of student worksheets
 - Seating charts containing student names
 - Observer guidelines (*page 11 of this guide*)

4. Organize the Details and Logistics
 - Allow time in the schedule to meet with the invited observers prior to the lesson to specify the kind of feedback being sought.
 - Arrange the classroom so that observers have space to stand and to circulate through the students' workspaces, consider adding chairs for teachers to sit and observe specific groups students.
 - Schedule a break after the lesson to allow observers to gather their thoughts for the debriefing.

Observers' Responsibilities During the Study Lesson

See observer guidelines handout (*page 11 of this guide*)

DEBRIEFING

Before the Debriefing

1. Prepare the Setting
 - Groups should take a break after the study lesson (minimum 10 minutes) to be sure that all observers have time to gather their thoughts before the debrief.
 - If possible, hold the debriefing in the same classroom where the lesson was taught. Discussants then are able to refer to the blackboard and student work. When this is not possible, bring to the debriefing the materials used/produced during the lesson.
 - Prepare the room so that the writing team, moderator, recorder, and final commentator are seated together at the front of the room.
 - Arrange a short meeting following the debriefing for the writing team to reflect on the lesson and debriefing while memory is still fresh.
2. Establish the Protocol for the Debriefing
 - Establish the following speaking order for the debriefing:
 1. *the teacher who taught the lesson*—comments heard without discussion from the group
 2. *the writing team*—comments heard without discussion from the group
 3. *the observers*—discussion encouraged
 - Remind the teacher and writing team to keep their comments brief to allow the majority of time for comments by the observers. The writing team should be allowed to respond briefly to the observers' comments if desired.

Key Roles for the Debriefing

1. Facilitator Responsibilities
 - Assign roles and be sure all participants are aware of their responsibilities
 - Begin the debriefing by introducing the team and outlining the structure of the discussion.
 - Keep the debriefing focused and keep track of time.
 - Make sure the conversation is not dominated by one or a few observers.
 - Allow all who wish to comment time to speak.
 - Reserve at least 10 minutes at the end for the final commentator's comments.
 - Refrain from making editorial comments.
2. Recorder Responsibilities
 - Take notes of the debriefing.
 - Produce a summary of the debriefing for the lesson study report.
 - Make sure that the lesson summary is given to the team member who is taking responsibility for reporting your lesson study to NCOSP.

Adapted from work developed collaboratively by Global Education Resources LLC, Paterson Public School 2 (Paterson, NJ) and Research for Better Schools.

RESOURCES

Chokshi, Sonal and Clea Fernandez. "Challenges to Importing Japanese Lesson Study: Concerns, Misconceptions, and Nuances." *The Professional Journal for Education* 85 (2004): 520-525. www.pdkintl.org/kappan/k0403cho.htm

Ertle, Barbina, Sonal Chokshi, and Clea Fernandez. "A Tool for Planning and Describing Study Lessons." Columbia University (2001). www.tc.edu/lessonstudy

Fernandez, Clea. "Learning from Japanese Approaches to Professional Development: The Case of Lesson Study." *Journal of Teacher Education* 53 (2002): 393-405.

Lewis, Catherine. *Lesson Study: A Handbook of Teacher-Led Instructional Change*. Philadelphia: Research for Better Schools, Inc., 2002.

"Lesson study is not a vehicle for creating a library of tried-and-tested lessons for teachers to borrow from a shelf and import into their own classrooms. It is a process for creating deep and grounded reflection about the complex activities of teaching that can then be shared and discussed with other members of the profession."

~ Clea Fernandez and Sonal Chokshi, Columbia University

REFLECTIVE QUESTIONS

As you progress through the Abridged Integrated Curriculum Topic Study and Lesson Study Tools document, you will be prompted at certain points to refer to questions in that facilitators guide. It should be kept in mind that as a facilitator, your role is to help your group to maintain coherence in planning, focus on how the lesson addresses the research goals, and develop specific questions to assist lesson observers in gathering evidence of student learning. Do not feel you need to ask every suggested question, and do not feel constrained to these questions if others seems more pertinent. Choose questions based on your group's progress.

SECTION I SELECTING A GOAL FOR RESEARCH (PAGE 3)

If your group is struggling, the following may help to clarify their task:

Every year a cadre of students graduates from your school. Imagine your ideal graduate. Paint a portrait of this imaginary student. What attitudes and knowledge does this student have about science and science learning?

Now paint a portrait of the actual students who are graduating from your school. What attitudes and knowledge do they have about science and science learning?

What gaps do you see between your two portraits?

How can one of these gaps be converted into a goal for your group's Lesson Study research?

PART C SELECT A GOAL FOR THE GROUP (PAGE 3)

In what way is your goal relevant to broad principles of learning and teaching?

Consider the process that your group used to come to consensus on this goal. To what extent does the group's goal represent a true consensus?

If there was a large amount of diversity in the aspirations you have for your students, then how will you ensure the continued relevance of the lesson study process for all group members as you progress in your work?

How will the goals you have articulated address the gap you have identified?

Lesson Study is intended to be a process of research or inquiry into how students learn and how teachers should teach. Can you state or cast the group's goal as a testable hypothesis about student learning?

PART D
SELECT A RESEARCH LESSON (PAGE 3)

What are the reasons for selecting this topic and how does it fit with your group goal?

How difficult is this lesson for your students? How do you expect the level of complexity of your chosen research lesson to help or hinder investigation of the research goal?

In what other ways is the research lesson you picked a good or poor match for the group's research goal?

Do you expect the ultimate findings of your Lesson Study work to be relevant to the teaching of lessons other than the research lesson? Explain.

Do you feel that it is realistic for ALL group members to teach the research lesson? If not, do all group members have an investment/stake/interest in what the group hopes to learn through the LS process?

SECTION II
EXAMINING THE UNIT

PART B
LEARNING THE GOALS OF THE UNIT (PAGE 4)

Does your lesson fit into a particular unit? Which unit? If not, how is this lesson so important that it stands alone?

If the group has chosen a 'process' oriented goal: What important science content is being taught in this lesson? Which SCTS guide is being used?

If the group has chosen a 'content' oriented goal: Did you find a science process SCTS guide that matches your content?

Have you considered SCTS sections on "Science as Inquiry," "Models," or "Nature of Science and Technology", etc., to inform your work?

In what ways is your group research goal applicable to other units?

PART C
HOW THE RESEARCH LESSON FITS INTO THE UNIT (PAGE 4)

Can you explain why this lesson is an appropriate vehicle for researching your question?

Do students currently enter your classroom with the appropriate level of prior knowledge necessary to succeed in learning the content in this unit? If not, have you made a plan to address this deficit?

Has the work in this section made you reconsider in any way the specific lesson you chose at the end of the Goal Selection section?

SECTION III DESIGNING THE RESEARCH LESSON

PART B LEARNING THE GOALS OF THE LESSON (PAGE 4)

What strategies or skills will your lesson require of your students?

How will this lesson make students confront their misconceptions about this topic? How will the teacher respond to these misconceptions? How will the teacher know that students have replaced their misconception with a concept that is accepted in the scientific community?

What science knowledge and skills do you expect students to gain from this lesson? If they don't gain this, will the research lesson still provide useful information? Explain.

Please describe your formative and summative assessment plans related to this lesson.

PART C REVISITING THE GROUP GOAL (PAGE 5)

How does your research goal/hypothesis fit in this lesson? What makes this lesson particularly well-suited to testing your hypothesis?

What features of this lesson will yield information about student learning that is broadly applicable to your teaching? At this point, do you have any motivation to modify the lesson to provide more information about your group's goal/hypothesis?

How are the guiding questions for observers in your research lesson tied to your group's research goals?

What specific instructions will you give observers in order to collect the appropriate data to meet your research goal?

What types of evidence will you and the other observers look for during the lesson that will indicate that the goal is or is not being achieved? In other words, what types of evidence will support or refute your hypothesis?

Have you given the observers too many points of evaluation? If so, can you prioritize the points of evaluation or divide the observers' tasks so that you'll be able to collect the data you intend to?

PART D INSTRUCTIONAL SEQUENCE OF THE RESEARCH LESSON (PAGE 5)

Given your classroom dynamics, have you allocated sufficient class time to execute the entire lesson?

What plans do you have to give students an opportunity for sense-making at the end of this lesson?

PART E
IMPLEMENTATION LOGISTICS (PAGE 7)

Are there specific protocols/procedures for guest to take part in the Lesson Study at the chosen school? (Parking, release forms, passes, etc).

Can this lesson be video-taped?

May other members of NCOSP participate?

Have you arranged for:

- a) A debrief session shortly after the research lesson is completed?*
- b) A second lesson incorporating revisions?*
- c) An opportunity to meet and complete the review and synthesis?*
- d) Writing a final report?*

Have roles been assigned and other observers included/contacted? (Building administrator; science coordinator; NCOSP facilitator) Roles may include a moderator for the debrief session, an outside advisor, and a recorder.

Have you considered how you will construct your written report on this research lesson?

SECTION IV
EVALUATION (PAGE 7)

Describe any difficulties you had gathering evidence of student learning. Were your points of evaluation for observers clear and observable?

How, if at all, will you modify your understanding of what constitutes observable points of evaluation in future Lesson Study cycles?

In what ways was your group's goal/hypothesis informed by the observations made during this lesson? Did your observations help you identify the logical sequence of steps necessary to understand the science content in this lesson without major gaps in understanding?

What observations did you make during this lesson, if any, that indicate that students were able to apply their understanding to new situations?

How will you use the information gained in this lesson to inform your general practice?

OBSERVER GUIDELINES HANDOUT

THE ROLE OF THE OBSERVER

Observers function not as co-teachers but as researchers examining particular aspects of the lesson. As a researcher, the observer should try to view the lesson from an objective perspective—without judgment—suspending one’s personal beliefs about teaching and learning. Far from passive, observers must see student work up close and record their findings in detail.

OBSERVER RESPONSIBILITIES DURING THE STUDY LESSON

Respect the Natural Atmosphere of the Classroom

- Minimize side conversation during the lesson.
- Remain in the classroom during the entire lesson to capture how the lesson is set up, its flow, and the conclusion.
- Do not block the students’ view of the blackboard; do not block 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 discussion.
- Minimize interaction with students. Refrain from teaching or assisting the children. Occasional interaction is permissible if done discreetly and with the purpose of understanding student thinking.

Become a Researcher

- Keep in mind the goal of the lesson.
- Use the lesson plan, seating chart, and work sheets to record your data.
- Study how students are collaborating.
- Take notes on individual student responses, using the students’ names.
- Indicate how individual students construct their understanding through activities and discussion.
- Document the variety of solutions that individual students use to solve problems, including errors.
- Examine the teacher-student interaction; e.g. is the teacher attempting to call on all students?
- Document the type of student talk and student engagement.

OBSERVER RESPONSIBILITIES DURING THE DEBRIEFING

Keep Comments Clear and Focused

- Keep comments focused on student thinking and learning and on the content of the lesson, not on teaching style.
- When commenting on the lesson, keep in mind the goal of the lesson and criteria laid out by the writing team.
- Base discussion on individual records of observations and quantify comments with concrete and specific evidence.

Maintain a Respectful Atmosphere

- Begin comments by identifying the positive aspects of the lesson.
- Be sure the teacher who taught the lesson is not made to feel like s/he is being personally criticized.
- Do not focus on the success or failure of the lesson or on teaching style.
- Select key, relevant observations and avoid a “laundry list.”
- Do not be a passive listener. Try to contribute to the debriefing; however, it is not necessary to repeat what has already been stated.

Adapted from work developed collaboratively by Global Education Resources LLC, Paterson Public School 2 (Paterson, NJ), Research for Better Schools, and Northwest Regional Education Laboratory Mathematics and Science Education Center.