Lessons from Lesson Study: A Model for Improving Instruction in Postsecondary Mathematics

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Adapting Lesson Study Project

- Can lesson study be adapted to be feasibly implemented in higher education?
- Does it show promise for improving teacher practices and student outcomes?
- Faculty teams from three community colleges participated in lesson study adaptation, development, and research activities.
What Is Lesson Study?

Lesson Study Cycle

Ten Steps to Lesson Study
Sample Lesson Study Schedule

<table>
<thead>
<tr>
<th>Timeline</th>
<th>Phase</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>August – September</td>
<td>Study and Plan</td>
<td>Two-hour meetings on three consecutive Fridays</td>
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<tr>
<td>October</td>
<td>Teach, Observe, and Debrief</td>
<td>Lesson is taught in Instructor A’s section on a Thursday; debrief occurs for one hour after class</td>
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<tr>
<td>October</td>
<td>Revise</td>
<td>Two-hour meeting on Friday</td>
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<tr>
<td>October</td>
<td>Reteach</td>
<td>Lesson is re-taught in Instructor B’s section the following Tuesday; debrief occurs for one hour after class</td>
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<tr>
<td>November</td>
<td>Reflect and Report</td>
<td>Team reconvenes for a final two-hour meeting</td>
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Three Practices to Realize the Benefits of Lesson Study

**Develop and Sustain a Collaborative Team**
- Establish purpose and long-term goals
- Articulate and attend to collaboration norms
- Maintain an inquiry focus on student learning

**Study Research and Apply Evidence-Based Practices**
- Enhance research literacy on learning theories
- Investigate evidence-based instructional approaches

**Generate and Share Professional Knowledge**
- Synthesize and document lessons learned
- Consider broader application for teaching practice
- Share knowledge with the field

New Materials for Lesson Study

http://educationnorthwest.org/resources/lesson-study-resources
Findings on Changes to Teaching Practice

1. Long-Term Goals for Students

- A lesson study team selects a research theme to guide their work over multiple cycles
- Research theme defines a broad long-term goal that is focused on improving student learning
  - Sample research theme:
    - How do we build students’ confidence in their mathematical reasoning and willingness to persevere in problem solving?

What are the features of lesson study that encourage changes to teaching practice?

1. Grounds conversations about instruction in long-term goals for students
2. Focuses attention on students and their learning
3. Provides a supportive environment to experiment with something new
2. Attention on Student Learning

- Because the lesson was co-developed by the entire team, during the teaching, observers focus on students, not the instructor.
- Questions to consider during the observation:
  - How do students interact with the mathematical tasks we developed?
  - What does that suggest about their understandings and misunderstandings?
  - What are the implications for instruction?

Because of the debriefing protocol there's no finger pointing. Everybody on the team developed the lesson and everybody thought that this is the way that things should go, so you're off the hook with that. So you're taking a risk by having people watch your class, but at the same time it's not. So I think that that's a great thing about this is that you can kind of experiment with teaching without it necessarily being about judgment.
- Faculty member

3. Supportive Environment to Experiment

Lesson Study at Portland Community College
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Materials available at https://educationnorthwest.org/events/improving-teaching-using-lesson-study