

Learning in and from practice: What does it take?

Lynn Paine

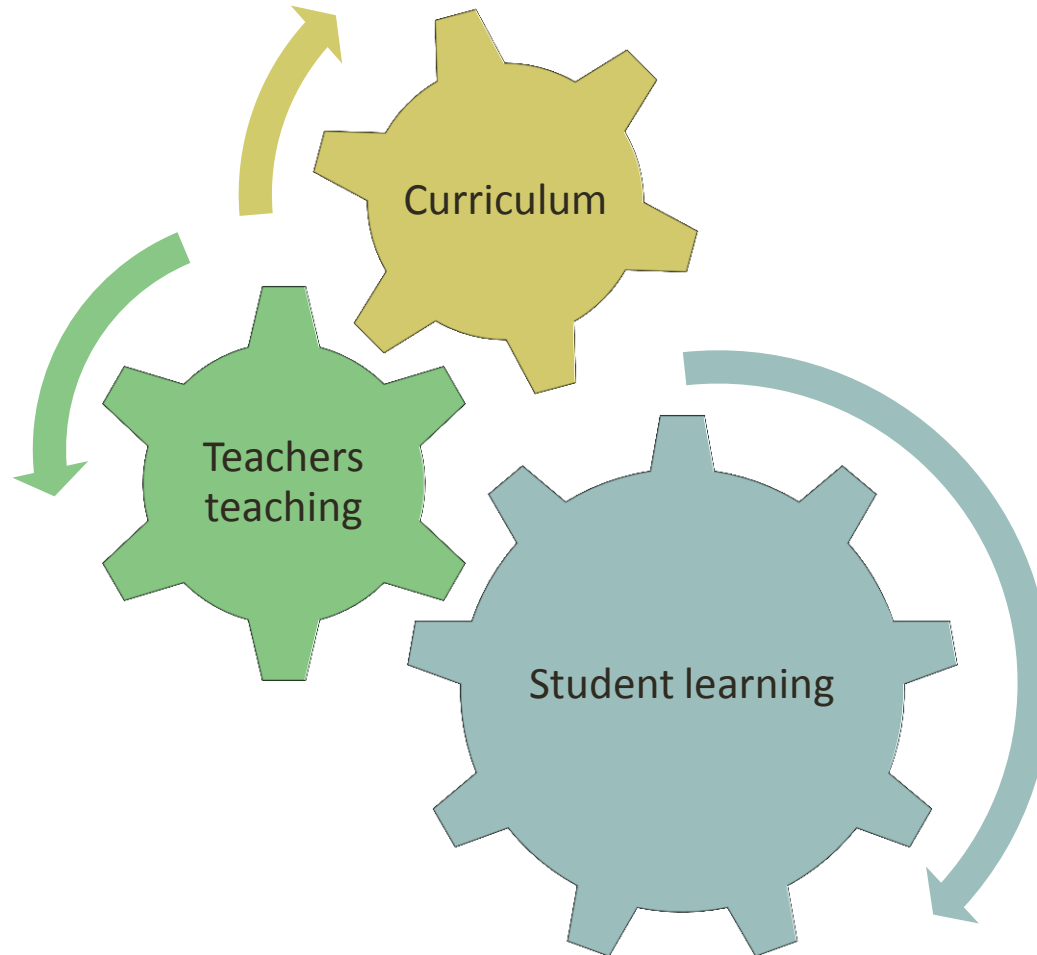
Michigan State University

painel@msu.edu

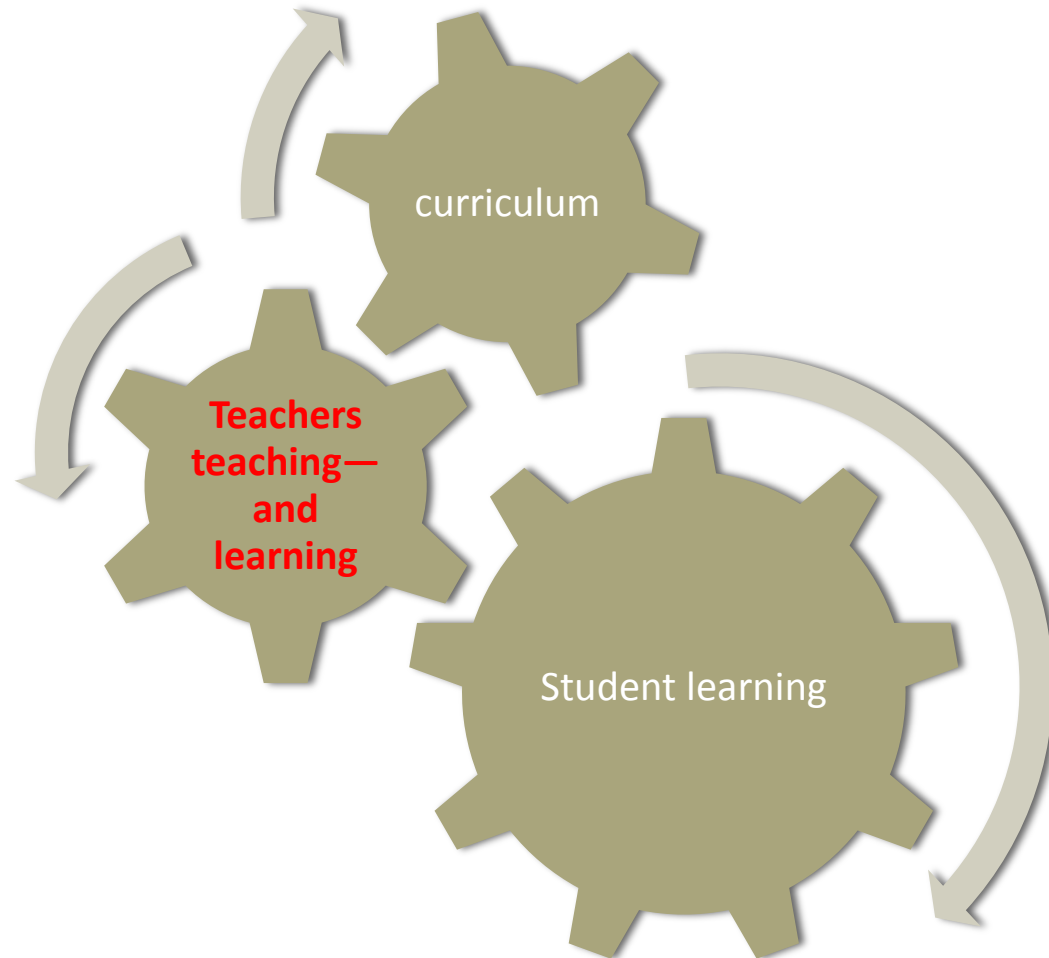
Overview

- Learning in and through practice—*Why?*
- Lesson-based professional development as site for learning—*What?*
 - Variation in approaches
 - Affordances
- Supports for this kind of learning—*How?*

Visions of improving student learning



The importance of teacher learning



What makes professional development effective?

“**core features** ... that have significant, positive effects on teachers' self-reported increases in knowledge and skills and changes in classroom practice:

- focus on content knowledge;
- opportunities for active learning;
- coherence with other learning activities.”

(Garet et al. 2001; Penuel et al. 2007)

Improving student learning through (new kinds of) teacher learning



- Developing ambitious teaching
 - that takes children's thinking seriously
 - that is powerful and substantively rich
- “like expecting someone to learn to swim on a sidewalk”
(Ball and Cohen 1999)



Learning through focused lesson-based inquiry

Practice-based professional development

Oriented towards practice

Sustained

In community of peers

The family of practices of *Focused Lesson Research*

- A form of professional development to improve teaching and learning
- Within larger category of *practice-based professional development*
 - Rooted in, located in, connected to practice
 - Ongoing, sustained
 - Video clubs, study groups to examine student work, action research, coaching, etc.

Versions of Focused Lesson Inquiry practices

- Japanese lesson study
- Learning study
- Public lessons
- Lesson study
- Action education
- Other



What they share as a set of practices

- Classroom at center
- Lesson as unit
- Real time
- Connecting content and learners
- Connecting planning, action and reflection
- Social--learning with others
- Recorded/documented/accessible to inquiry and review

Distinguishing features

- **Focused** and deliberate
 - Specific focus
 - Repetition
 - Intensity
- **Lesson** as unit
 - Tied to content and curriculum,
 - Bounded
- **Research:**
 - Inquiry-oriented, collaborative systematic examination of outcomes in relation to goals



Approaches--Japanese lesson study

- Starting from a question with connection to school goals/vision
- Focus on students and learning
- Collaborative
- Teachers as center, outside experts as guest and consultant
- Research-oriented, collect evidence and develop reports
- Many contexts for openness

Approaches--Chinese public lessons and “teaching research”

- Different formats to serve different purposes
 - Model
 - Try out/experiment
 - Work on “hard” or “difficult” points
 - Disseminate ideas
 - “talk lessons”
- Sometimes competitive
- Revision of earlier format in “action education” model—dynamic possibilities

Approaches--US lesson study efforts

- Challenges in developing new norms
 - Time and space for this work (administrative support)
 - Taking on a researcher stance
 - Identifying researchable question
 - Designing as experiment
 - Identifying evidence to collect
 - Interpreting and generalizing
 - Making teaching public
 - Sharing teaching—finding common ground (curriculum), needing common language
 - Limits of teachers' knowledge
 - Disagreeing

What do these approaches make possible?



- Designing appropriate mathematical tasks for students
- Teaching difficult mathematical ideas
- Using mathematically and pedagogically appropriate language [Example of elementary mathematics public lesson, Han and Paine, 2010]

What is learned

- Develop pedagogical skill (blackboard writing)
- Deepen content knowledge
- Develop new understandings of students as learners
- Develop pedagogical content knowledge
- Develop new materials
- Learn new theories
- Gain competence in new forms of practice
- Develop new understandings of and/or skill in assessment
- Make connections classroom practice and broader goals
- Strengthen reflective abilities
- Enhance understanding of complexities of teaching
- Develop shared language, lens for analysis

What is learned

- Knowledge
 - Content knowledge
 - Pedagogical content knowledge
 - Learners and learning (generally)
 - These particular learners
 - Curriculum and curriculum trajectory
- Skills
 - Learning to notice
- Dispositions and beliefs
 - Habit of inquiry
 - Sense of joint work and collaboration
 - Making reasoned arguments, evidence-based decisions

How different forms support different learning—affordances and constraints

- Repeated cycles
 - Allow learning from variation
 - Time commitment, challenges of logistics
- “high stakes”—competition
 - Building community in the face of outside challenge— “we”
 - Create authentic mentoring opportunities
 - Stressful—risk focusing on performative aspect more than learning

Collaboration among teachers across differences



Affordances of

- Cross-grade collaboration
- Cross-subject
- Cross-career collaboration

Specifically after this project's experience, I see teaching in particular to be less of an individual profession. I knew that colleagues were useful in going through teaching together, but in seeing how closely and effectively I was able to work with my peers on a specific lesson, as well as the helpful feedback we all gave and received, I see mathematics education even more as a group effort. My group and I were able to go beyond what we would have been able to do ourselves and pour time, energy and effort into creating a lesson, trying it out, and debriefing the results as well as developing take-aways and improvements for the future. I see colleagues even more as essential resources now more than ever. (US preservice elementary teacher)

Affordances as new form (vs. old form)

- Developing community
- Developing new language
- Developing new norms
- Developing new tools
- Developing new ways of seeing teaching

- Constraint
 - “hollow shell”
 - Contrived collegiality



Traditions in Japanese and Chinese focused lesson inquiry—help develop a knowledge base of teaching (Hiebert et al., 2002)

- Linked to practice
- Detailed, concrete, specific
- Integrated
- Public
- Storable and shareable
- Verifiable and able to be improved

Affordances—cross grade collaboration

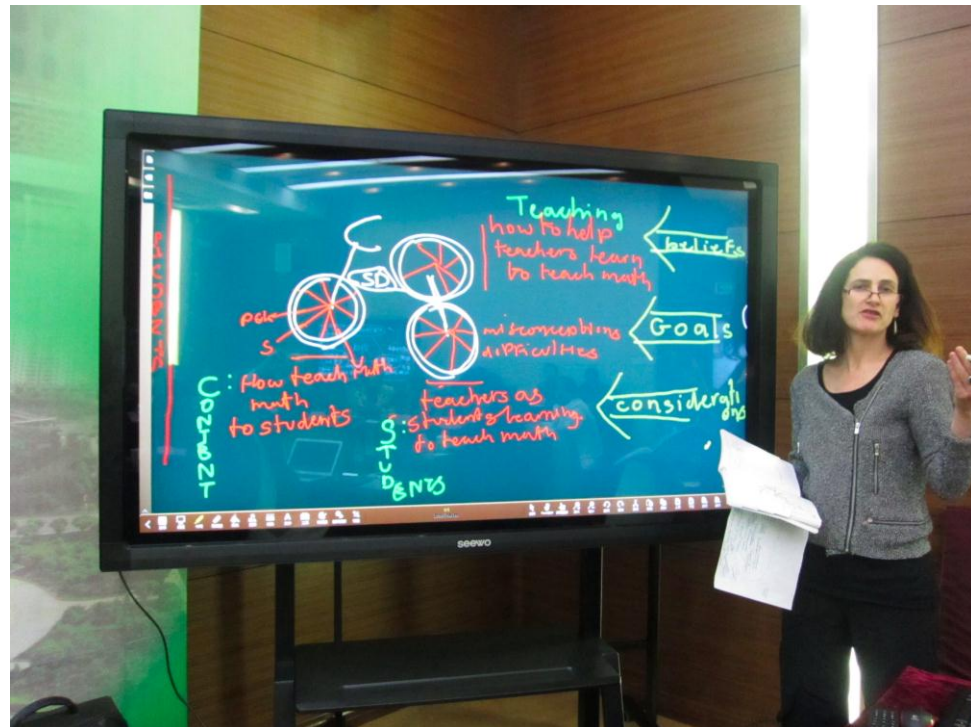
- "It seems like by doing the lesson study many of us have made some changes to class on an everyday basis. Heidi mentioned some things that she has done previously to try to make her students more independent and more resourceful students...She has done the 1 question idea to direct them to their group more often... She has done a lot of things to set up class in a way that is maybe not just the lesson study but is influenced by the lesson study. I know I have done some things I stole from Brenda about brain research and a lot of different things about perseverance. I think we recognized early on that perseverance isn't something that we teach in any 1 lesson but has to be a focus all year.... it seems important that we have changed our practice on a daily basis because of the work with lesson study around this idea."
(US secondary teacher, reflecting on what she learned)

Conditions that support such learning

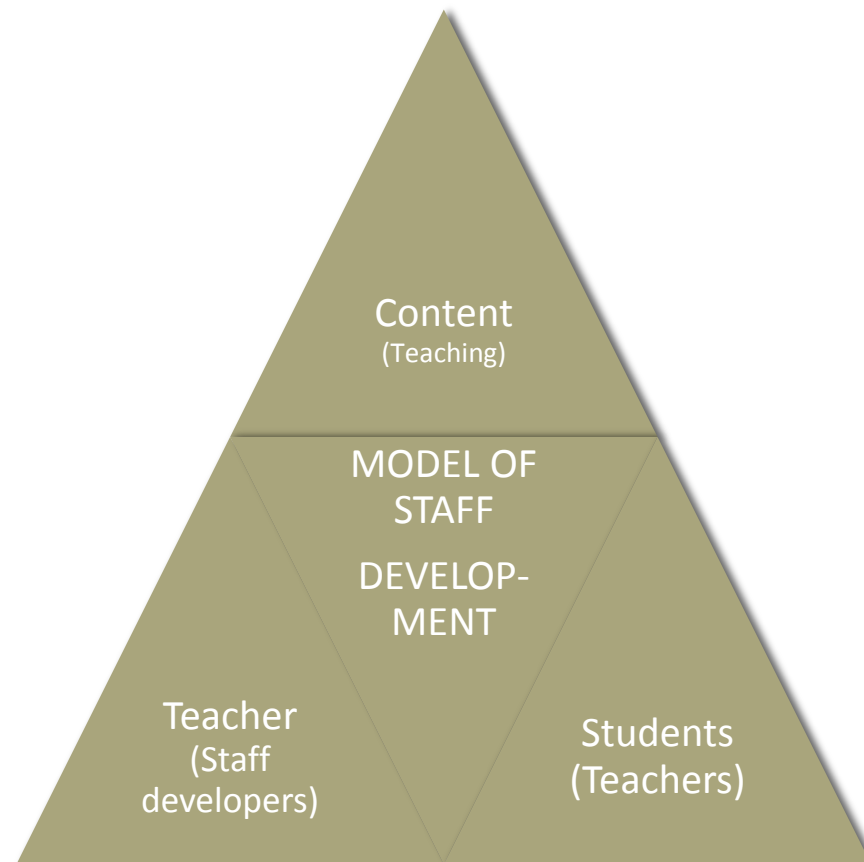
- Time and space
- Administrative support
- Curricular supports
- Tools and resources
- Existing norms
- Facilitation/staff development

How is such teacher learning supported?

- What do elementary staff developers need to know, understand and be able to do when they try to help teachers examine and learn from their practice?



Unpacking professional development as a teaching practice



PD as teaching

- *Knowledge for mathematics professional development*
 - Of content
 - Of pedagogy
 - Of pedagogical content
 - Of learners (teachers) and (teacher) learning
- *Skills, dispositions, and beliefs*
- *Practical rationality (Herbst and Chazan)*



Tasks for supporting teacher learning from practice

- Sizing up teachers' knowledge of a situation
- Drawing teachers' attention
- Getting teachers to consider new or deeper ways of thinking
- Providing teachers information or knowledge they lack
- Giving teachers chances to experience or look at practices
- Making ideas accessible

Thinking behind staff developer moves:

Well, sometimes we have ...sort of **routine set of questions we ask because we think that over time as we work with the group of teachers it'll help them to focus on something that we're interested in**, so, for example, sometimes when we really want to orient people to notice students' thinking we start with questions like: what do the students do, which is really to describe what the students did, and what did you think that means that the students understand. So we really take the time to say what the students did and then we try to name what kind of knowledge is evident in what the students did. Then we ask what questions would you ask the child to know about what he is thinking. **I think about that as a framework that can, with repeated engagement, help people focus more on students' thinking.** (US staff developer)

Thinking behind staff developer moves:

I think, for example, teachers are not sure when they teach this lesson in 4th grade because there are six grades in elementary school. **So it is no use to discuss just specifically about this lesson,** so, I mean, **teachers should think about what these students will find difficult in their 5th or 6th grade,** and what students need to pay attention in their earlier grades based on their observation of the students' struggle (in this particular lesson). (A Japanese staff developer)

Thinking behind staff developer moves:

I often start with positive evaluation of the teaching, commenting on the effective teaching methods that the teacher has used and summarizing the strengths of his/her teaching. However, **the point of praising the positive things in the teaching is not just to say good things, rather it is offered so that it makes it easier for me to shift to the weaknesses.** So I often start with the problems that students seem to have during the class, and move on to an analysis of the reasons, and then point out what problems the teacher had in the teaching. The problems you point out for teachers must be specific, with reference to his/her teaching. Then you need to explain to the teacher where his/her problems are.... After all these steps—analyzing the teaching, the reasons of the problems, and the rationale and theories behind your analysis, you need to offer them specific suggestions. **Teachers love that.**

Particular knowledge, adding to what teachers know

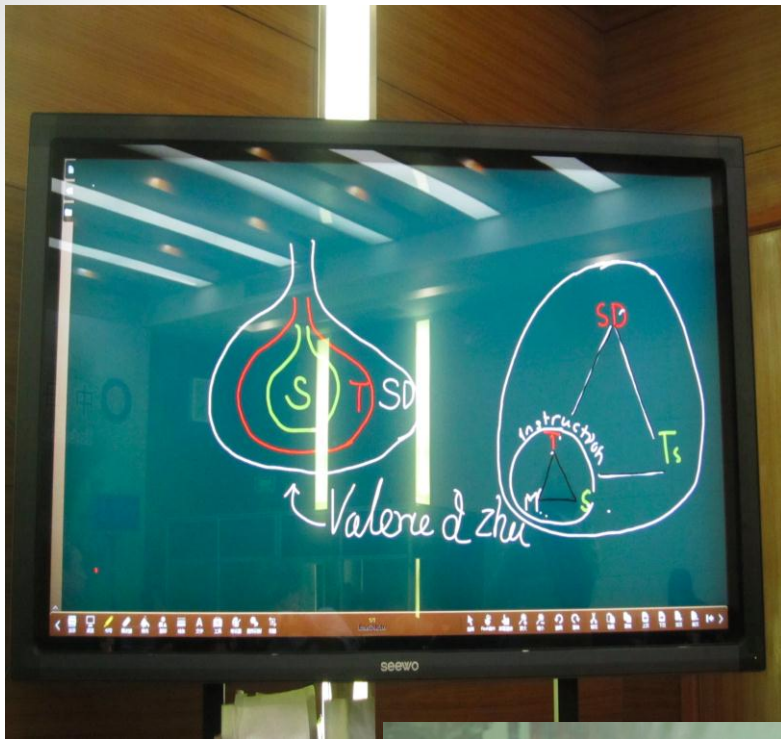
Staff developers should be able to have a clear understanding of content knowledge, ***the key points and difficult points, and critical points*** in one lesson. Besides these, we should also know the strategies for implementing the instructional activities, and teaching method. Just like what we discussed, staff developers should know which parts of the lesson are more difficult and challenging, what better methods teachers should use to solve the problem. Also, staff developers should have some knowledge of disciplinary pedagogy, which is important for them to analyze the students' learning, to understand the basic process of learning. (A Chinese staff developer)

Supporting learning

I saw the staff developer (in the videotape) smiling and I enjoyed the clip. Thus at the end of the conference, I was reminded that discussing a lesson with colleagues is very fun. I think it is important to convey these things.

What SDs talk about when talking about their ways of working--practical rationality

- 1) What they might work on with teachers
- 2) The considerations that shape how they carry out this work
- 3) The beliefs that guide them
- 4) The moves and strategies that they deploy
- 5) The knowledge that they bring to bear



Importance of seeing the intellectual challenges in supporting focused lesson inquiry

- teachers are making teaching culture through the work of focused lesson inquiry professional development
- “I didn’t realize how complex this work is” (Molly, US staff developer)



Thank you!

Lynn Paine
paine1@msu.edu