

EXPLORING THE IMPACT OF DISCUSSION-LEADING PROFESSIONAL DEVELOPMENT ON TEACHERS' PRACTICE

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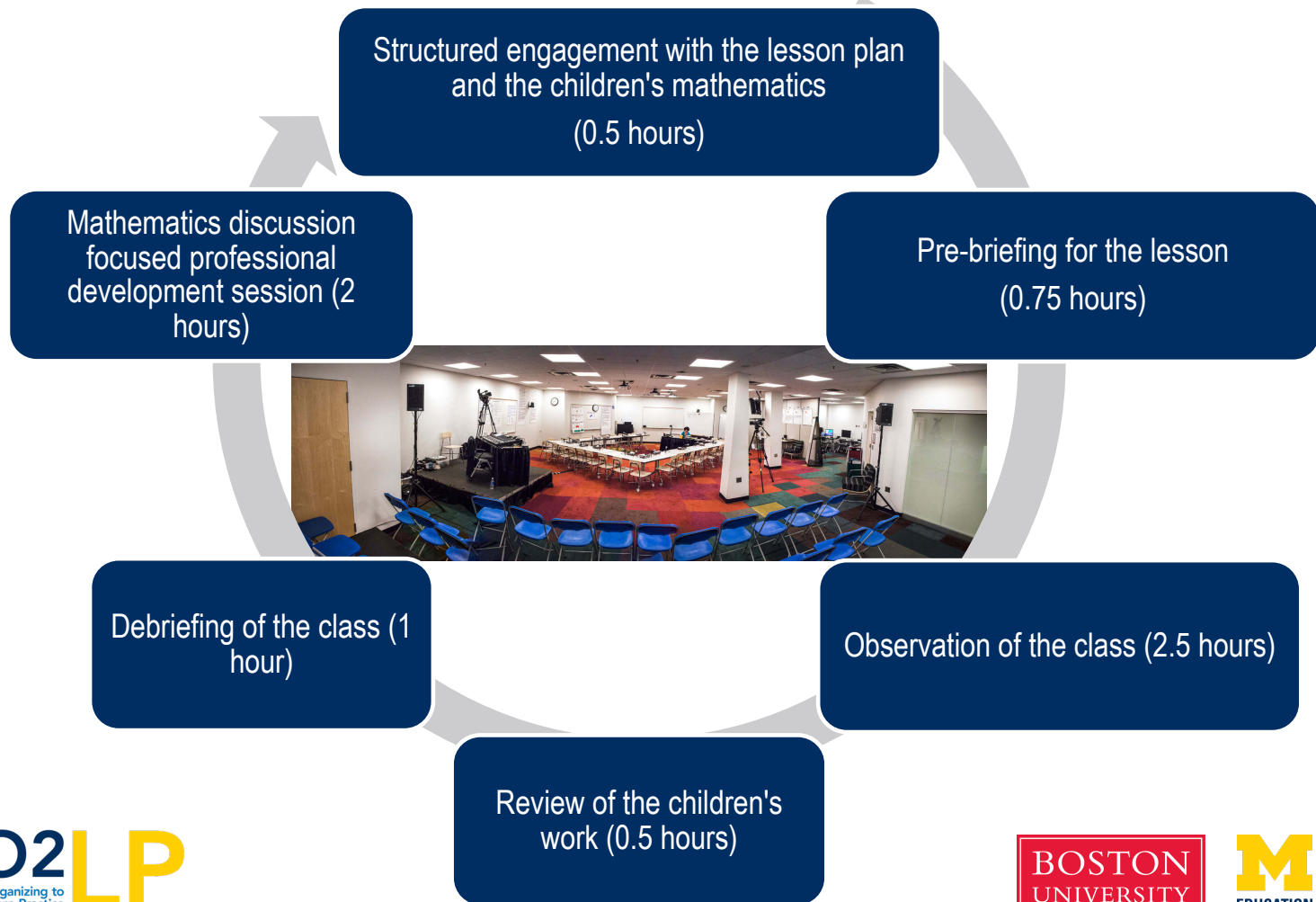
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DAILY PROFESSIONAL DEVELOPMENT STRUCTURE OF WEEK-LONG PROGRAM



PD SERIES TAKES UP WHAT IS KNOWN ABOUT EFFECTIVE PROFESSIONAL DEVELOPMENT

- Focused, active, coherent, sustained duration, and collective (Desimone & Garet, 2015)
- Targeted subject-specific instructional practice, involved practice-supportive materials, addressed relationship-building through discussions, and provided in-the-moment coaching (Hill & Papay, 2022) through rehearsals



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SO WHY EXAMINE TEACHER LEARNING FOR THIS PROFESSIONAL DEVELOPMENT STRUCTURE?

- Much of the impactful, evidence-based professional development that currently exists is time and resource intensive for both teachers and schools
- Time and resource intensity make access to such professional development inequitable – available to those districts and teachers with funding, substitute teachers or release time, and other resources
- The structure we are investigating requires reduced resources



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RESEARCH QUESTIONS FOR THE LARGER PROJECT

Impact of structured peripheral participation paired with practice-focused professional development: What do teachers learn? (How) does participation impact teaching practice?

- **Learning from structured peripheral participation in “live practice”:** What do teachers learn? Does (and how does) their participation impact their own teaching practice?
- **Impact of supplementary practice-focused professional development:** Does the addition of professional development focused on a particular teaching practice impact teachers’ own practice, and if so, in what ways?
- **Impact of setting:** Does the setting of the structured peripheral participation matter (in person or online)? Does the setting of the supplemental practice-focused professional development (Ann Arbor or remote site) matter?

OUR FOCUS FOR THIS STUDY

(How) and in what ways does peripheral participation in an instructional laboratory that uses whole class discussions as a key pedagogical approach paired with practice-based professional development focused on leading mathematics discussions impact teachers' demonstrated skills in leading mathematics discussions?



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WHOLE CLASS DISCUSSION

- A period of relatively sustained dialogue among the teacher and multiple members of the class
- In a whole-class discussion, participants respond to and use one another's ideas to develop ideas about specific content

TeachingWorks, 2015



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METHODS

33 teachers participated in the data we are sharing today

Three cohorts across two different years

Cohort H1

12 teachers from the same district attending at the University of Michigan with a project facilitator

Cohort H2

10 teachers from a different district attending at the University of Michigan with a project facilitator

Cohort A2

11 teachers from a large urban district attending from their home site with a project facilitator

DATA COLLECTION



PRE- AND POSTTEST MEASURES

AREA OF LEARNING	MEASURE
Mathematical knowledge for teaching	LMT Survey
Teaching practice	Three video-recorded lessons (2 teacher-choice, 1 provided) analyzed using Mathematical Quality of Instruction instrument
Skill with leading a mathematics discussion	Three video-recorded lessons analyzed using a discussion-specific instrument

EXAMINING INSTRUCTIONAL IMPROVEMENT

- 193 videos of mathematics discussions from this group of 33 teachers were double-coded using two instruments:
 - MQI
 - Project-developed mathematics discussion-specific instrument



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UNDERSTANDING THE TOOL USED TO ANALYZE DISCUSSIONS

- Records frequency of 68 particular moves related to discussions, as well as whether the teacher was responsible for the move, a student initiated the work, or the move was unnecessary
- Records structure of the discussion and whether the lesson would qualify as a discussion under our definition. This was meant to attend to the purposefulness of the work and the general orientation of the talk.

DESCRIBING THE LESSON AND TEACHING

- Task set-up
- **Launch**
- **Eliciting**
- **Probing**
- **Orienting**
- **Generic orienting**
- Revising
- Connecting and extending
- **Concluding**
- Issues
- Overall quality

EXAMINING CATEGORIES TO DESCRIBE TEACHING

Eliciting

- Elicits multiple ideas
- Elicits a range of responses
- Engages several students
- Asks about processes

Probing

- Poses questions to get students to explain their understanding
- Follow-up questions focus on why a student did particular work

Generic Orienting

- Encourages the class to attend/listen/respond
- Uses turn-and-talk to encourage discourse
- Elicits student to student discourse
- Uses moves that require all to respond to others' work



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EXAMINING CATEGORIES TO DESCRIBE TEACHING

Concluding

- Makes a closing statement
- Supports students in remembering a key idea
- Takes stock of the discussion



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RESULTS



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RESULTS

We hypothesized that participation in the instructional laboratory paired with practice-based professional development would lead to shifts in participants' skill with leading mathematics discussions.

So what happened?



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CHANGES IN TEACHING PRACTICE AS MEASURED BY THE DISCUSSION CHECKLIST

H1

Nearly significant increase in:

- number of discussions led ($p=0.053$, from 20% to 36%),
- **probing** ($p=0.077$), **generic orienting** ($p=0.084$), and
- revising ($p=0.056$)

Significant increases in:

- task set-up ($p=0.012$),
- **eliciting** ($p=0.009$), and
- **concluding** ($p=0.016$)

H2

Nearly significant increase in **generic orienting** ($p=0.069$)

No significant increases in any other area

A2

Nearly significant increase in:

- Connecting/extending ($p=0.055$)
- Revising ($p=0.080$)

HYPOTHESES

1. Differences in the observation portion of the professional development

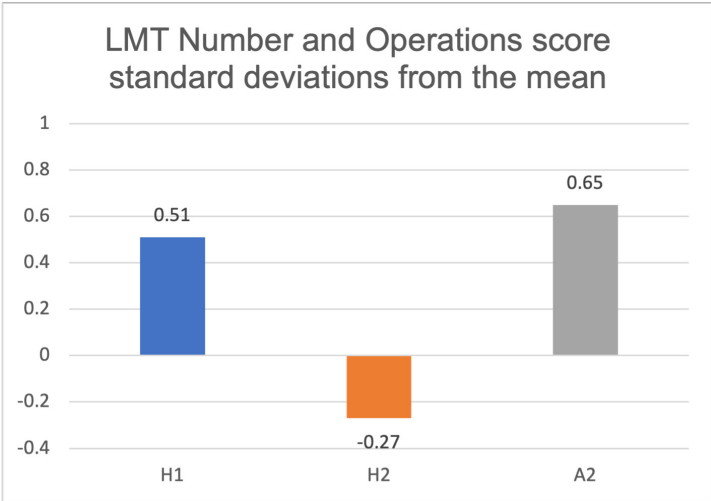
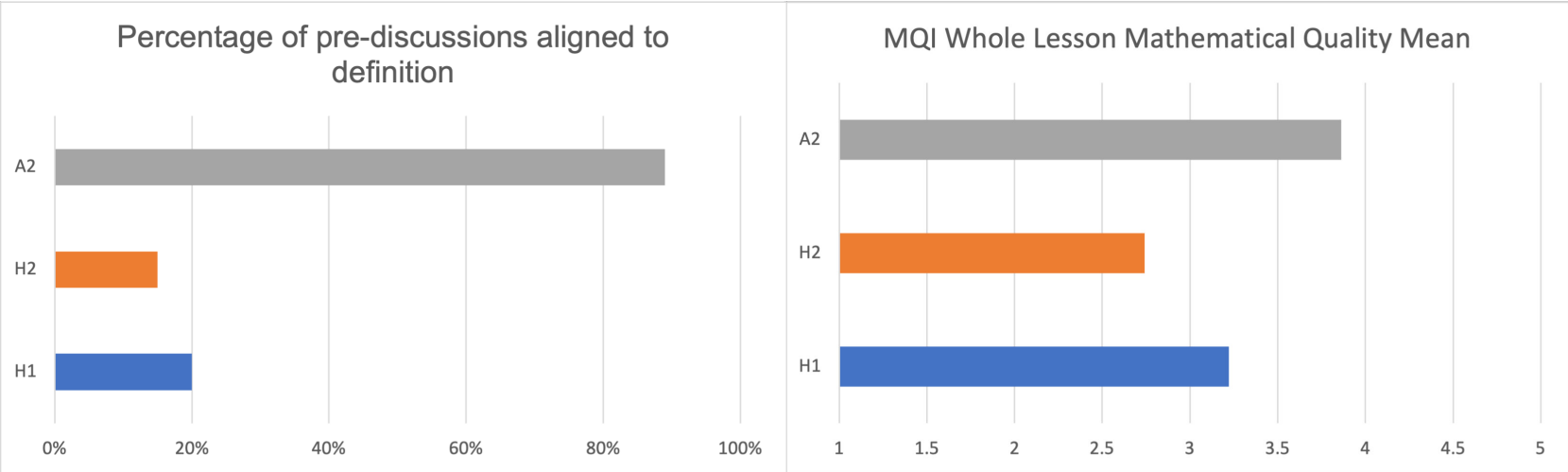


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HYPOTHESES

1. Differences in the observation portion of the professional development
2. Differences in teachers' incoming knowledge and skill

PRE-STUDY GROUP DIFFERENCES



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HYPOTHESES

1. Differences in the observation portion of the professional development
2. Differences in incoming knowledge and skill
3. Contextual differences



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IMPLICATIONS



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IMPLICATIONS

- It is possible to impact teachers' actual teaching practice through peripheral participation in a summer intensive paired with practice-based professional development
- Practice-specific tools can support us in targeting specific changes and alignment of those changes with the professional development experience
- More analysis is needed, but results suggest that sufficient MKT is likely needed for professional development to support the improvement of practice