

Understanding the Role of Lesson Study in K-12 Mathematics and Science Teacher Education

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This working conference brought together 34 science and mathematics teacher educators from 25 institutions across 17 states and territories. Our purpose was to collaboratively build knowledge about utilizing lesson study as a mechanism to support pre-service teacher learning. We discussed essential features of lesson study, design features of teacher education programs that enhance or inhibit lesson study practice, and the implications of lesson study for partnership with schools and colleagues.

Context of the work

- Working conference
- Invited participation to STEM teacher educators via professional associations
- Originally, proposal intended to be held in person and include attendance at a live research lesson.
- COVID required that we move the meeting to an online digital format

Enabled	Constrained
Increased number of attendees (32)	Shared research lesson experience
Shared repository of artifacts to be constructed during the conference, rather than afterward	Informal networking and discussion
Participants' time was focused on conference work, rather than some portion of their time on travel	Reduced daily number of meeting hours to prevent digital fatigue

Questions

- How are US STEM teacher educators using lesson study in preservice teacher education?
- How are they using the steps of lesson study?
- How are they currently researching or planning to research the efficacy of lesson study with their candidates?

Design

Day One	Day Two
Welcome & Introductions	Revise ideas about steps of lesson study
Poster Roundtable: Our lesson study practice	Research proposal feedback cycles
Discussion of Lesson study research	Discuss book structure and essential features
Focus groups for steps of lesson study	Learning and next steps
What is “prepare”?	

Evidence-based results

Tools	Artifacts
Zoom	Chats
Google Docs	Conference Program, planning team documentation
Google Slides	Book idea generation and feedback
Jamboard	Patterns of essential features of lesson study across posters
Google Sheets	Virtual Discussion Board
Google Maps	Participants' Locations & Biographies

Products

- Book outline
- Invitations sent to chapter authors
- Abstracts and book proposal to be sent to publisher late fall 2022
- Conference proposals submitted to WALS 2022 and AERA 2022

Implications

- Lesson study challenges several existing structures of teacher education in higher education
- Teacher educators need more opportunities to learn and improve their own practice
- Because there are a myriad of goals lesson study is used to pursue, we need a myriad set of measures of evaluate lesson study's efficacy in alignment with those goals.

Impacts

- Teacher educators from 26 institutions attended the conference.
- Including the organizing team, six attendees expressly focused on science education, two on literacy education, and the remainder on mathematics education.
- Four doctoral students participated in the conference.
- The book is expected to broaden the use of lesson study within MST education.

