Exploring Pedagogies of Practice that Support Preservice Teachers in Learning How to Facilitate Argumentation-Focused Discussions

NSF DRK-12 Online Practice Suite (OPS)
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Exploratory Session

ETS | TOWSON UNIVERSITY | MIT | TEACHING SYSTEMS LAB

Workshop Presenters

- Meredith Park Rogers, Indiana University - Bloomington
- Jamie N. Mikeska, ETS
- Pamela S. Lottero-Perdue, Towson University
- Heidi Masters, University of Wisconsin – La Crosse
- Ron Hermann, Towson University
- Laura Zangori, University of Missouri - Columbia

- *Dionne Cross Francis, University of North Carolina at Chapel Hill

Workshop Goals and Structure

- **Session Goal** – to introduce you to different methods teacher educators are using to support PSTs in planning for AND/OR reflecting on their practice of argumentation-based discussions.
- **Our context for teaching about argumentation** – an online practice suite that involves virtual learning contexts, but the pedagogical approaches shared today could be used in a variety of "real" learning contexts as well.

Structure of the Session

- Short overview of our context and our position on argumentation-based discussions
- Adjusted presentation format
  - > All presenters, 12 mins each to share approach.
  - > 2 mins for Qs for each presenter between as we prepare for the next person.
- Final Qs for the group and collecting information to share resources

Background on the Issue

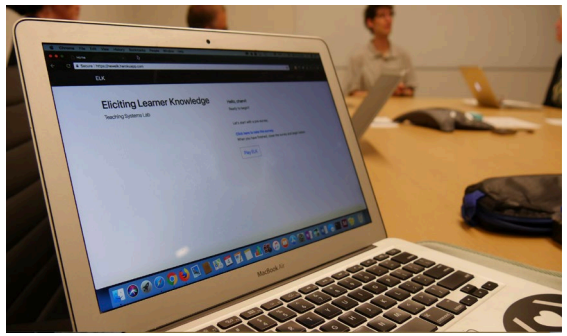
- Practice teaching experiences in PK-12 classrooms such as field placements and student teaching are the most widely used approaches to preparing teachers.
- While these experiences are critical to supporting pre-service teachers' (PSTs) learning, they often fall short.
- **Challenges with relying on these approaches:**
  - They provide PSTs with few opportunities to rehearse components of complex practice repeatedly and without adverse effects on real students (Dieker et al., 2014; Straub et al., 2015).
  - PSTs tend to observe more traditional instruction in the field and then struggle to reconcile these experiences with the vision of ambitious instruction they study in university courses (Feldman & Kent, 2006; Wilson et al., 2001).
- These issues are notably acute when it comes to facilitating argumentation-focused discussions.
  - This practice is essential to supporting students' learning in science classrooms but difficult to learn how to do well;
  - PSTs tend to have limited familiarity with argumentation in their own previous experiences as learners.

Introduction to the Online Practice Suite (OPS)

Online Practice Suite (OPS) Overview

- The OPS includes three different practice-based learning activities:

Focused Practice Spaces (FPS)



Avatar-Based Simulations (ABS)

Virtual Teaching Simulator (VTS)

- All activities focused on supporting teachers in learning one specific teaching competency: **facilitating discussions that support the practice of argumentation**

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Dimensions of Facilitating Argumentation-Focused Discussions

- Dimension 1: Attending to student ideas
- Dimension 2: Facilitating a coherent and connected discussion
- Dimension 3: Encouraging student-to-student interactions
- Dimension 4: Developing students' conceptual understanding
- Dimension 5: Engaging students in argumentation

Micro Cycle for Each OPS Activity

Presenters

Pam - Elementary Science
Transcript Coding to Prepare and Reflect

Coding a Making Lemonade Transcript from a Former PST, "Alexis"

Other Preparatory Activities

Facilitating their own Making Lemonade Discussion

Coding their own Making Lemonade Transcript

Writing an "Evidence-Based Reflection" using their Transcript Coding

Coding focused on teachers' elicitation/encouragement of: (1) students' initial constructed arguments; (2) argument critique; (3) consensus building; and (4) student-to-student talk.

Heidi – Elementary Science

Focusing vs. Funneling Argumentation Discussions

- Are your preservice teachers funneling students to the right answer when facilitating discussions?

- Let's explore activities and strategies to help preservice teachers learn to focus discussions in science.

- Elementary focus – Applicable to any preservice teacher

Ron – Secondary Science

Building Consensus

- Middle School Science Methods Course – 1 day/week for 3 hours
- 9 PSTs specializing in 2 areas (science/math/LA/SS)
- OPS was one thread lasting most of the semester
- PSTs utilized a 5 Practices approach to engage students in argumentation with the aim of connecting student work to learning goals to develop a consensus model
- We will discuss how to prepare PSTs to use student work to plan discussions that encourage argumentation practices and build consensus

Laura – Secondary Science

A potpourri of activities

- Overall course goal: Asking good questions and listening to student responses
- Bio 4994: Third science methods class
  - Focus content; Biology (LS2, LS1, LS3, LS4)
  - Focus practice: Argumentation
  - Focus cross-cutting concept: Energy
- How practice/CCC implemented in a bio methods class
  - All DCI looked at through energy lens
  - Readings
  - Micro-teaching using argumentation
  - Simulation tasks
  - Field assignment

Accessing Resources Shared in Breakouts

- Scan this QR code and fill out the Google Form.

- Shortly after the conference we will share a link to a OneDrive folder where you can access all the materials the presenters have shared, including this PowerPoint.

Thank you for attending!