

This module has been designed to support those providing Mathematics Professional learning for K-12 classroom educators.

Awareness of Math Facilitation Presentation Guide

Session Description

This session explores the visible and invisible actions of facilitators of mathematics inquiry. Discussion of the unique challenges and strategies for noticing and reflecting upon one's own practices allows participants to implement research-informed strategies into their practice.

Importance

As the use of inquiry-based professional learning increases, the demand for nuanced and effective facilitation is expanding. However, this is a complex role which is difficult to articulate as the work is often invisible and the mathematics content knowledge is embedded and central to the inquiry. Furthermore, there has been limited information and learning opportunities for facilitation of mathematics inquiry. When facilitators can name the actions they use it allows them to expand and refine their understanding of the work.

Learning Focus

Facilitators of Mathematics of Inquiry will:

- Build awareness of and confidence in skills needed to facilitate professional learning
- Understand the distinction between facilitation of inquiry and other facilitation
- Develop strategies to continue improving in the role of facilitator of mathematics inquiry

Agenda

Minds On:

- Identifying the Roles of Interactive Presenter, Coach and Facilitator of Mathematics Inquiry
- Facilitation vs. Presentation

Action:

- Math Task – Representing Fractions
- Introducing Visible and Invisible Facilitator Actions
- Applying Understanding of Visible and Invisible Facilitator Actions

Consolidation:

- Visible and Invisible Actions across Roles
- Paradoxes, Challenges and Supports

Professional Learning Module Contents

- Presentation Guide: Overview, Learning Activities, Questions to Stimulate Conversations (as needed), Aha Moments (possible participants' insights) and Materials, Adaptations (20 minute, and 1.5 hour sessions)
- PowerPoint with Script and <<presenter notes>>
- BLMs

Learning Activities	Questions to Stimulate Conversation	Aha Moments	Materials
<p style="text-align: center;">Introduction and Minds On (35 minutes)</p> <p>Introduction (Slides 1 - 4) 5 minutes</p> <p>Identifying Roles of Interactive Presenter, Coach and Facilitator of Mathematics Inquiry (Slides 5-10) 15 minutes</p> <p>Participants select and read a quote (BLM 1) and determine whether the quote originates with interactive presenter, coach or facilitator. Once definitions for the roles has been shared, ask participants to adjust their decisions if they wish.</p> <p>Facilitation vs Presentation (Slides 11 - 15) 15 minutes</p> <p>Participants compare and sort actions of presenter and facilitator (BLM 2). Additional discussion will focus on the essential attributes of a facilitator. Highlight the aspects of Math Knowledge for Teaching.</p>	<ul style="list-style-type: none"> • What makes some of the statements easier to identify? • What makes some of the statements more difficult to identify? • What do you need to pay attention to when the answer was less obvious? 	<ul style="list-style-type: none"> • I think of the three roles as very different but some of these are really hard to classify. This is making me think! • I use the same skills differently across roles? • I didn't realize how many skills I have. 	<ul style="list-style-type: none"> • Copy of slides with the three definitions (1 per table) • BLM 1 (one set per 5 people, cut) • BLM 2 (one set per pair, cut)
<p style="text-align: center;">Action (90 minutes)</p> <p>Math Task – Representing Fractions (Slide 16) 10 minutes</p> <p>Participants represent a fraction in a variety of ways. This task is discussed in the following video.</p> <p>Introducing Visible and Invisible Facilitator Actions (Slides 16-25) 50 minutes</p> <p>Three viewings of the Fractions Task Debrief video. First view for the overall flow of the discussion. Second viewing participants identify visible actions (BLM3) of the facilitator. Final viewing of the video with the thought bubbles, participants identify invisible actions (BLM4) of the facilitator. Refer to BLM5 for possible responses. Participants reflect and make connections to their own practice.</p>	<ul style="list-style-type: none"> • What evidence supports your belief that the facilitator has made this move? • This was a short clip and yet there was evidence of several actions. Is this surprising? Why or why not? • Which was more difficult; identifying the action or providing the rationale? Why? 	<ul style="list-style-type: none"> • Naming the actions is really helpful. I think I do some consciously, some unconsciously and some hardly ever. The naming will help me refine my facilitator moves. • While there was no definitive right or wrong answer to the scenarios, the discussion was really powerful! 	<ul style="list-style-type: none"> • Manipulatives and/or mathies. ca learning tools • Paper • Pencils • BLM3 (one per person) • BLM4 (one per person) • BLM5 (one for presenter)

Learning Activities	Questions to Stimulate Conversation	Aha Moments	Materials
<p style="text-align: center;">Action (Continued)</p> <p>Applying Understanding of Visible and Invisible Facilitator Actions (Slides 26 and 27) 30 minutes</p> <p>In pairs, participants view 'photo scenarios' (BLM6), identify associated visible and invisible actions and provide rationale. Following a group discussion, participants reflect and make connections to their own practice.</p> <p>Participants are encouraged to suggest modifications to problems to meet the needs of a variety of learners and how proportional reasoning connects well with other strands.</p>	<ul style="list-style-type: none"> How did you and your partner resolve differences in either the selection of the action or the rationale? 		<ul style="list-style-type: none"> BLM6 (one scenario per pair) Fraction Task Debrief Videos
<p style="text-align: center;">Consolidation/Debrief (25 minutes)</p> <p>Visible and Invisible Actions Across Roles (Slide 28) 5 minutes</p> <p>Participants consider how the actions map across the three roles: Interactive Presenter, Coach and Facilitator of Mathematics Inquiry. (BLM7)</p> <p>Paradoxes, Challenges and Supports (Slides 29-33) 20 minutes</p> <p>Distribute brochure. Highlight paradoxes and challenges. In groups, participants discuss the challenges and identify connections to their own experiences. Suggest that they may wish to follow-up with the questions and strategies suggested in the Noticing and Reflecting section on the last page of the brochure.</p> <p>Share how to access the brochure on www.edugains.ca.</p>	<ul style="list-style-type: none"> Think of an experience you had when facilitating that has had a lasting impact. What aspects of paradox or challenge was evident within that experience? 	<ul style="list-style-type: none"> There are skills from other roles that I can expand upon when facilitating mathematics inquiry. I never thought of the paradoxes before – but I have struggled at times to be a co-learner and a facilitator. 	<ul style="list-style-type: none"> BLM7 (1 per pair)

Suggestions if you are offering the session as part of a series:

- Work with a coach or co-facilitator. Observe, notice and name visible and invisible actions and provide feedback to each other.

Considerations if you are offering the session on-line:

- Use break-out rooms for the math task and role play.

Adaptations	Materials
<p>If you have 20 minutes: <i>Learning Focus:</i></p> <ul style="list-style-type: none">• Participants explore the essential attributes of a Facilitator of Mathematics Inquiry <p><i>Activities:</i> Use the following slides in the following order:</p> <ul style="list-style-type: none">• Slide 8 (Facilitator vs. Facilitator of Mathematics Inquiry)• Slide 9 (A Facilitator of Mathematics Inquiry)• Slide 24 (Connecting to Your Practice)• Slide 18 (First Viewing of the Inquiry Session)• Slide 14 (Essential Attributes of a Facilitator of Mathematics Inquiry)	<ul style="list-style-type: none">• Facilitating Mathematics Professional Learning Brochure• Fractions Task Debrief Video
<p>If you have 1.5 hours: <i>Learning Focus:</i></p> <ul style="list-style-type: none">• Participants learn about visible and invisible actions of a Facilitator of Mathematics Inquiry. <p><i>Activities:</i></p> <ul style="list-style-type: none">• Use slides 16 to 24. Distribute the brochure.	<p>See 2.5 hour outline</p>