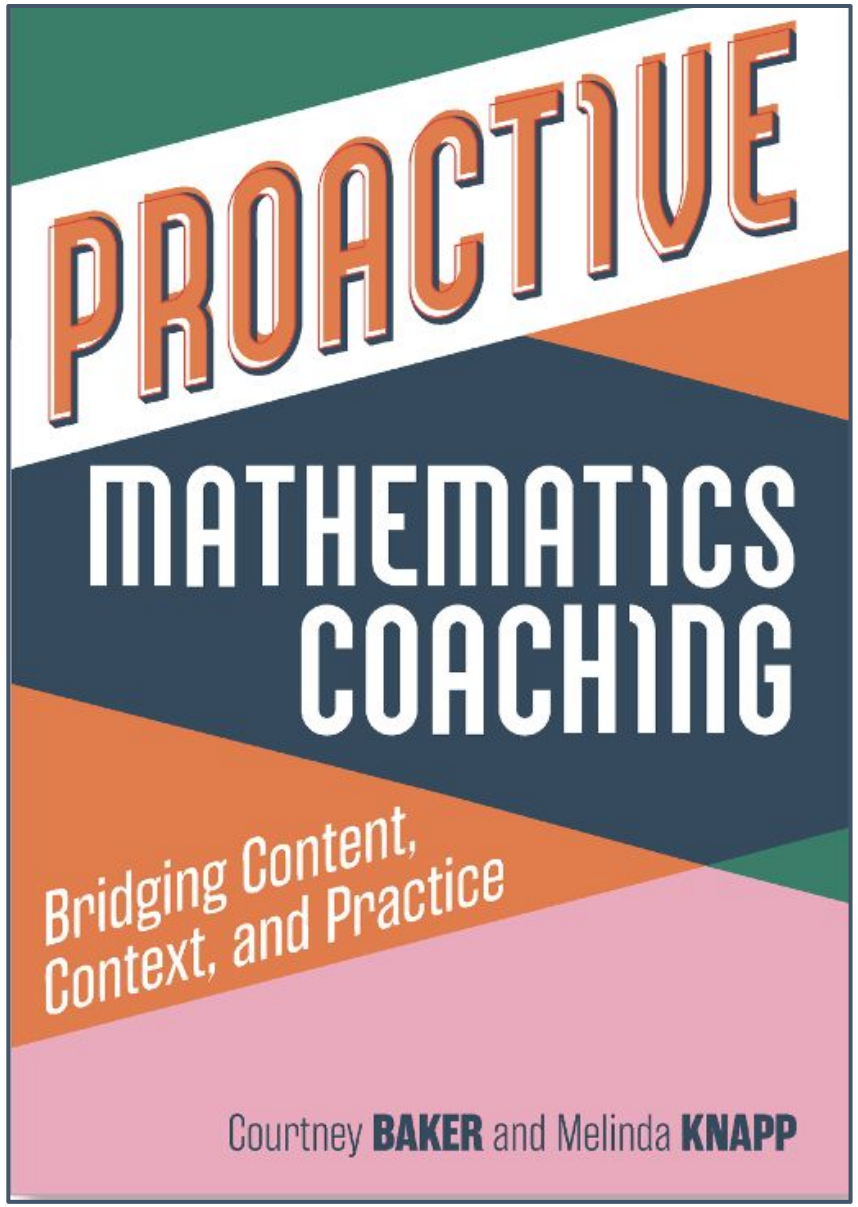
WELCOME!

NCTM Book Study

Proactive Mathematics Coaching

Analyzing Classroom Video

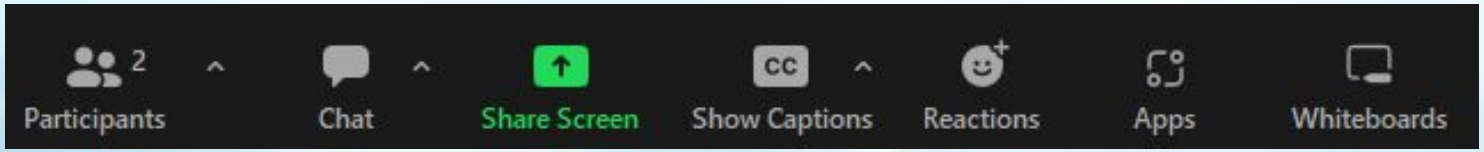
Courtney Baker, PhD
Melinda Knapp, PhD

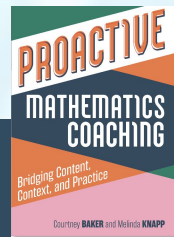


NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

Welcome!

- **Please keep your microphone muted!**
- **Chat box**: Comment, chat with other participants, and ask questions.
- **Video**: Be mindful that everyone can see your video unless you choose to stop sharing.
- **Show Captions**: Use to hide or view subtitles.

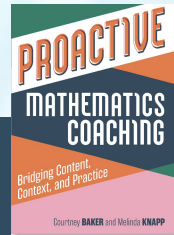




NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS

Welcome!

- A recording will be available to registered attendees for 30 days after the session.
- We will provide a certificate of participation within a few days of the session.
- Follow us on Twitter @NCTM and share your thoughts about today's session using the hashtag #NCTMPD.



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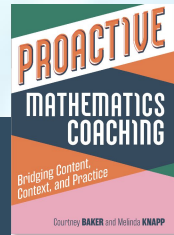


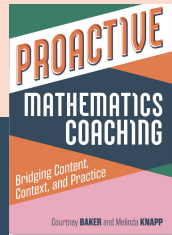
Proactive Mathematics Coaching

Today's Agenda

Part I: Welcome & Overview

Part II: Exploring The Case of Karina & Analyzing Classroom Video

Part I: Welcome & Overview



Introductions

Mathematics Coaches At Heart

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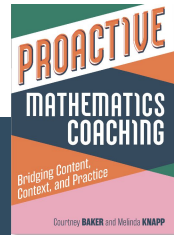
Understanding Our Influence

Questions At The Core of Our Practice

Is what I am doing actually effective? And who is it effective for?



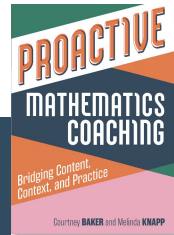
Understanding Our Influence

Developing A Proactive Practice

Our Book Study Goals

Connecting Research & Practice

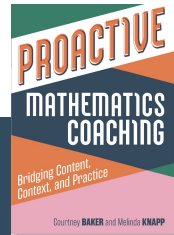
- Explore a specific MCP through example cases that provide broad exposure to instructional practices and leadership approaches.
- Analyze cases that recognize a range of coaching contexts, focus on math content, and empower school communities to surmount obstacles.
- Gain insights into what it takes to plan professional learning and/or coaching interactions that advance leadership agendas for both long- and short-term goals.



Our Book Study Goals

Connecting Research & Practice

- Bring transparency to decision making and illustrate how the use of the PCF advances the vision of teaching and learning mathematics described within the Catalyzing Change series.
- Engage in discussions (network and collaborate) with peers to share common problems of practice, evaluate contexts, define a content focus, establish goals, select practices, and engage in debriefs that can inform future actions.

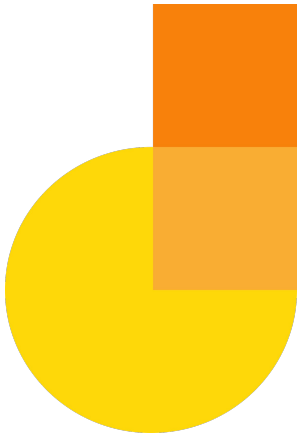


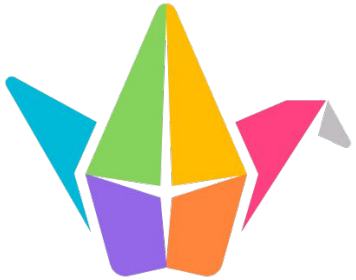
Maximize Your Experience

Engage in Multiple Formats

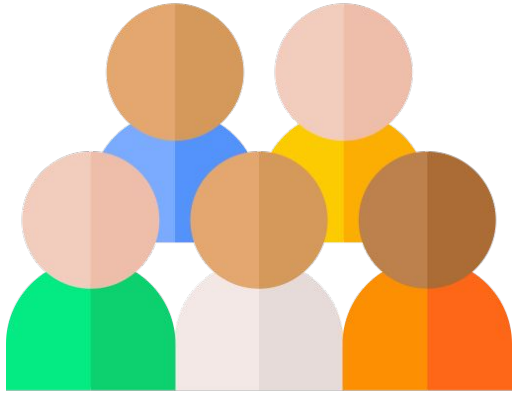
Chat & Microphone

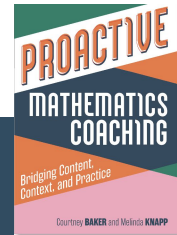
Jamboards & Padlets





Breakout Rooms





Maximize Your Experience

Workshop Norms to (Re)Frame Leadership

- Assume Positive Intent
- Learn From & With Each Other
- Maintain An Asset-Based Approach
- Value Others' Experiences
- We Teach All Students & Lead/Coach All Stakeholders
- Other?

Creating Alliances

Building Your Network

Please Share on Our Google Sheet

- Name
- Position
- School(s)
- Coaching/Leadership Experience
- Email address

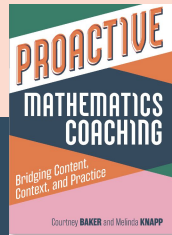
Invitation to Share

Your Turn

What did you try?

- 1-2 questions?
- A specific phase?
- The entire PCF?

Part II: Exploring the Case of Karina and Analyzing Classroom Video as a Mathematics Coaching Practice

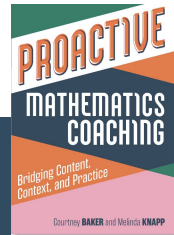


Analyzing Classroom Video As A Coaching Practice

Defining the Practice

Mathematics Coaching Practice: Analyze Classroom Video

Effective coaching of mathematics guides conversations on shared teaching experiences to reflect on aspects of teaching. Videos can serve as representations that support teachers in learning and refining their practice.



Analyzing Classroom Video As A Coaching Practice

Connecting To Your Practice

What is your familiarity with analyzing classroom video?

- ❑ I have never heard of analyzing classroom video
- ❑ I have read about analyzing classroom video
- ❑ I have tried analyzing classroom video a few times
- ❑ I regularly analyze classroom video

Analyzing Classroom Video as a Coaching Practice

Connecting To Your Practice

What do you notice?

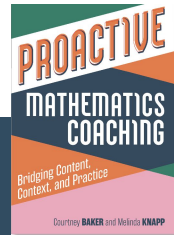
What do you wonder?

	Never Heard Of	Read About It	Tried a Few Times	Use Regularly
Co-Teaching	0%	13%	67%	20%
Modeling	6%	18%	41%	35%
Examining Student Work	0%	20%	40%	40%
Engaging In Mathematics	0%	0%	40%	60%
Engaging in Math Studio	20%	60%	20%	0%
Analyzing Classroom Video	20	20	40	20

Analyzing Classroom Video As A Coaching Practice

Connecting to Research

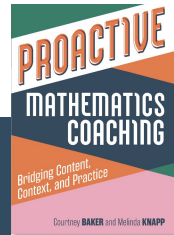
- The use of classroom videos as a representation of practice has become increasingly common in professional development and teacher education (van Es & Sherin, 2010; Zhang et al., 2011).
- As coaches, we learn from classroom interactions, personal reflections, and collaborations with others to improve teaching practice across a school or district.
- Analyzing classroom videos of mathematics teaching "can help [teachers] develop new ways of seeing teaching and learning and support their efforts to enact new instructional practices" (van Es & Sherin, 2017, p. 1).



Analyzing Classroom Video As A Coaching Practice

Connecting to Research

- Research suggests that there is value in teachers coming together to examine artifacts from their own classrooms (Lewis et al., 2006).
- Hollingsworth and Clarke (2017) assert that "recordings of classroom practice can provide unique, rich and powerful opportunities for teacher learning and teacher professional growth" (p. 458).
- Video can enhance the ability to notice and respond to student thinking, which has been identified as a hallmark of expertise in teaching (Mason, 2002).

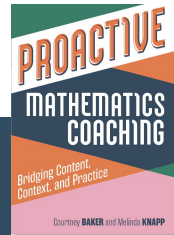


Analyzing Classroom Video As A Coaching Practice

Understanding the Practice: The Possibilities

Sustaining high-quality video-based conversations requires facilitators' keen attention to the ideas that unfold, how video is being used as a source of evidence for claims about instructional practice, and how participants work together to advance their own and each other's learning (van Es et al., 2014).

- Watching individually vs. Watching collectively
- Videos of self vs. Videos of others
- Videos created by individual vs. Published videos (e.g., Teaching Channel, TEDD.org)

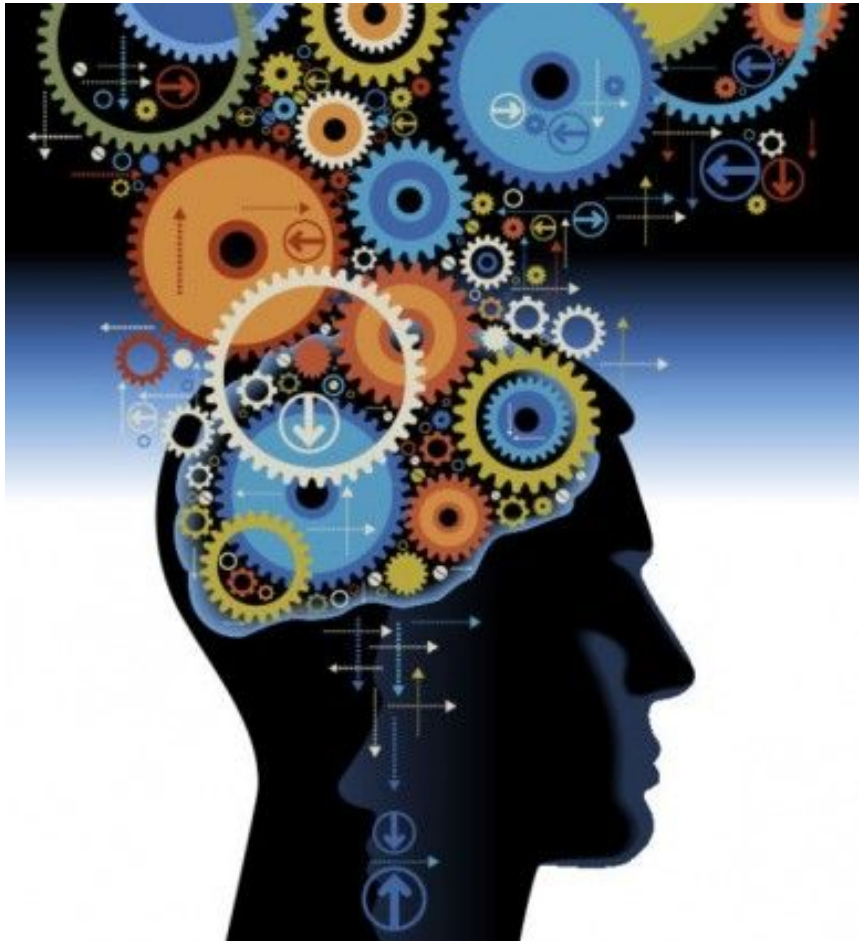


Analyzing Classroom Video As A Coaching Practice

Connecting To Practice

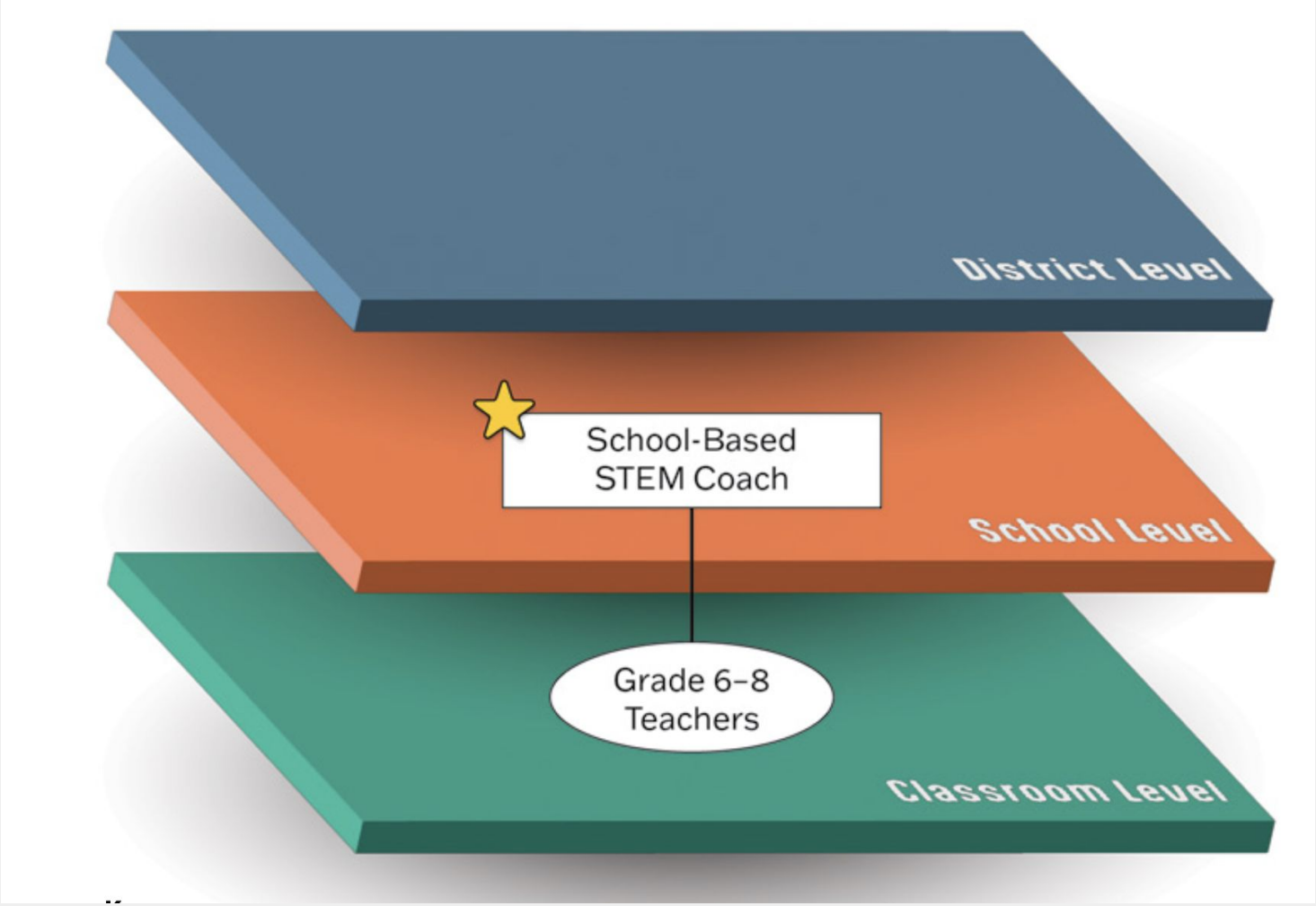
What insights or questions do you have about analyzing classroom video?

- From reading Chapter 10?
- From your own experiences?



Introducing the Case of Karina

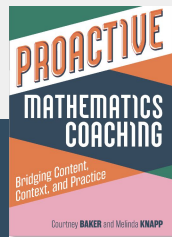
Case Essentials



Introducing the Case of Karina

Case Essentials

Analyzing classroom video for teachers' professional learning in a rural K–8 school for the purpose of implementing a video club connected to posing purposeful questions.	
Long-Term Goal	Support teachers to ask questions that press for students' justification and generalization during problem-solving tasks.
Short-Term Goal	Create a video club at my school. Start with the Grades 6–8 mathematics teachers and then expand to the K–5 teachers as interest grows.

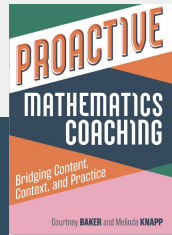


Introducing the Case of Karina

Case Essentials

Using the PCF to Catalyze Change

The case of Karina highlights how a science, technology, engineering, and mathematics (STEM) coach in a rural, K–8 school can work to increase students' use of mathematical justification when problem-solving. Karina wants to introduce a video club at the school as a way to help teachers notice trends in student thinking while also working on strategies that will help teachers increase the types of questions that support "justification talk" in the classroom. Karina uses the PCF to help teachers realize that when students stop at explaining their hows and don't get to the whys of what they're doing, they cannot move toward deep mathematical understanding. Karina uses a video club to support teachers to understand how to press students to get to their whys.



Introducing the Case of Karina

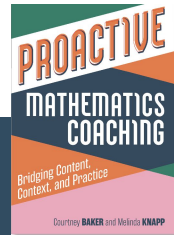
Case Essentials

Mathematics Coaching Practices (adapted from Baker & Knapp, 2019; Gibbons & Cobb, 2017; TDG, 2010)

- Engage in Mathematics
- Examine Student Work
- Analyze Classroom Video
- Rehearse Aspects of Practice
- Engage in Lesson Study/Studio Day/Math Labs
- Co-teach
- Model Instruction

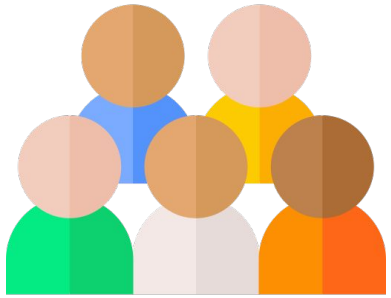
Mathematics Teaching Practices (NCTM, 2014)

- Establish mathematics goal
- Implement tasks that promote reasoning and problem solving
- Use and connect mathematics representations
- Facilitate meaningful mathematical discourse
- Pose purposeful questions
- Build procedural fluency from conceptual understanding
- Support productive struggle
- Elicit and use evidence of student thinking



Analyzing Classroom Video As A Coaching Practice

Pause & Ponder: Breakout Session

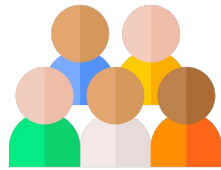


Breakout Rooms

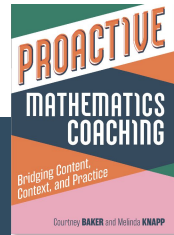
Reflect on and discuss the questions on the next slide. You can also use the linked Jamboard to record your ideas.

Analyzing Classroom Video As A Coaching Practice

Pause & Ponder: Breakout Session Qs



- Karina knows there is a need to increase the rigor of teacher questions so that they prompt for justifications and generalizations from students? How might you approach this challenge in your setting?
- Karina collaborates with coaches outside of her district on a regular basis to learn more about coaching—in this case, she learns about the implementation of video clubs? How could a coach continue to learn, especially when working in a small district or as the only coach in a school or district?
- How are instructional routines like conferring useful tools for coaches? What other routines might you implement given the context of Karina's school and her goals?



Analyzing Classroom Video As A Coaching Practice

Pause & Ponder: Discussion

What ideas did you have?

What ideas did you hear?

Analyzing Classroom Video As A Coaching Practice

Chat Box Discussion

How might you decide about when to use

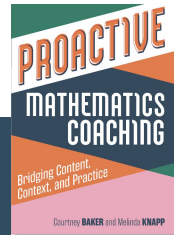
- watching individually vs. watching collectively?
- videos of self vs. videos of others?
- videos created by individuals vs. published videos (e.g., Teaching Channel, TEDD.org)?

Analyzing Classroom Video As A Coaching Practice

Proactive Coaching Framework Questions

<u>Share Your Thinking!</u>

What are you inspired to try out related to the **Mathematics Coaching Practice analyzing classroom video**? What is your rough draft thinking about this?



Next Time [12/13]

Rehearsing Aspects of Practice Chapter 11

Check Out Chapter 11 Pages 167-192

The Case

In this case you will meet **Brayden, Morgan and Carys** working to both analyze district pacing guides for embedded inequities and examine how they might be limiting students' success in math.

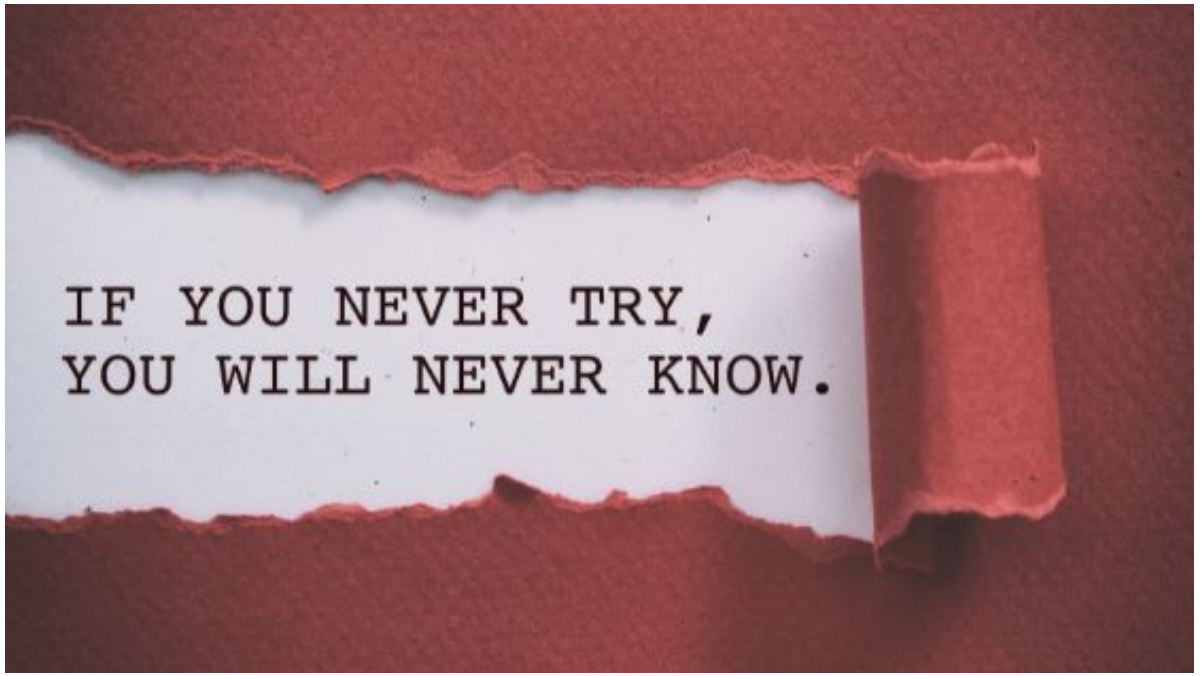
Case Summary			People		Practices		Context In Brief	
Chapter	PCF Phases Emphasized	Big Idea	Mathematics Leader and Role	Involved School Stakeholders	Mathematics Coaching Practice	Mathematics Teaching Practice	Grade-Level and Grade Band	Content Topic
10	Phase III	Use of a video club to support teachers to learn to press for justifications [illegible] generalizations	*Karina* K–8 school-based STEM coach	Video club for middle school mathematics teachers	Analyzing video	Pose purposeful questions	Middle school (Grades 6–8)	The hexagon pattern task
[illegible]	Phase I Phase III	Professional learning that seeks to change structural barriers	*Brayden* K–12 district mathematics supervisor *Morgan* Grades 6–12 mathematics instructional specialist *Carys* K–5 mathematics instructional [illegible]	K–12 school-based leaders	Rehearsing aspects of practice	Create equitable structures in mathematics	Grades K–12	All K–12 mathematics content

Next Time

Consider Implementing the PCF

What might you try?

- 1-2 questions?
- A specific phase?
- The entire PCF?



There will be space next session to share!

Next Time

December 13