

# Becoming a Better Consumer of Mathematics Coaching: Expectations and Responsibilities

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Research Partners



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# Session Outline

- Examining Mathematics Coaching (EMC)  
Project Description and Current  
Coaching Practices
- Becoming Consumers of Coaching
- Tools and Strategies to Maximize  
Coaching Effectiveness



# EMC

## Project Description

- EMC is a 5-year research and development project examining the effects of a coach's "knowledge for coaching" on a diverse population of K-8 teachers.
- It addresses the DR K-12 challenge:  
*How can the ability of teachers to provide Science, Technology, Engineering, and Mathematics (STEM) education be enhanced?*



# Other EMC Personnel



## Montana State University

- Mark Greenwood



## RMC Research

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## Project Director

James Burroughs





# Mathematics Coaching

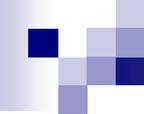
Mathematics classroom coaching is gaining popularity as a school-based effort to increase teacher effectiveness and student achievement.

# Mathematics Coaching Defined

*“A mathematics coach is an on-site professional developer who enhances teacher quality through collaboration focusing on research-based, reform-based, and standards-based instructional strategies and mathematics content that includes the why, what, and how of teaching mathematics.”*

# Why Study Coaching?

- Coaching is a promising model for enhancing K-8 mathematics teachers' abilities to provide quality mathematics education.
- Coaching can be implemented at any point in a teacher's career (as opposed to mentoring).



# Why Study Coaching?

The National Mathematics Panel (2008) reports that schools across the nation are using mathematics specialists, including mathematics coaches, yet there is limited research proving what makes coaching effective.

# Why Study Coaching?

- There is limited understanding of coaching effectiveness, especially in mathematics.
- Moreover, no studies have demonstrated what types and depths of knowledge effective coaches hold.
- At the same time, implementing coaching involves considerable cost and logistical effort for schools and districts.

# Complexity of Coaching

- Coaching is a collaborative process that is done with teachers, not to teachers.
- Coaching is a joint effort from both the coach and the teacher(s) involved.
- Coaching support is useful only if the teacher and coach are prepared, and willing to listen, internalize, and respond accordingly.

# Effective Coaching Practice

A coach should:

- Ask reflective questions
- Provide feedback
- Share materials and resources
- Maintain confidentiality
- Use a coaching cycle:
  - Gather information before the lesson
  - Observe a complete lesson
  - Collect and document evidence
  - Debrief and reflect after the lesson

# Boundaries of Coaching

A coach generally does not:

- Evaluate teachers
- Take over during a lesson
- Impose specific lessons or instructional strategies
- Tutor struggling students
- Perform the support services of an aide

# Becoming Consumers of Coaching

- There is no single recipe for effective coaching.
  - Approaches to coaching vary as widely as do the teachers, coaches, and schools involved.
- Despite variations in coaching, it remains the teacher's responsibility to become ***a consumer of coaching.***

# Becoming Consumers of Coaching

A commitment to creating a collaborative and rewarding coaching relationship will help maximize the benefits of coaching.

- Coaches are only as effective as their teachers will allow.
- A wise consumer of coaching makes the most of this educational investment.

# Becoming Consumers of Coaching

To maximize the benefits of coaching, a teacher must:

- communicate specific instructional needs;
- be willing to ask for specific types of support;
- be able to listen and hear ideas; and
- take shared responsibility for cultivating a positive and productive coaching relationship.

# What Coaches Expect from Teachers

Effective Coaching	Expectations from Teachers
Is structured	Set aside time for coaching
Requires reflection	Share goals and beliefs
Requires two-way communication	Express needs and expectations

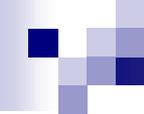
# What Coaches Expect from Teachers

Effective Coaching	Expectations from Teachers
Is content-based	Focus on improving mathematics teaching and learning
Is evidence-based	Built on identified elements from sessions and observations

# Tools to Support Coaching

The Examining Mathematics Coaching (EMC) project has developed and refined tools to help coaches and teachers in the coaching process.

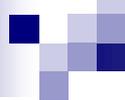
- Coaching Skills Inventory
- Teacher Needs Inventory



# EMC

## Coaching Skills Inventory

...is intended to measure a coach's perspective on her or his own level of effectiveness or confidence with various coaching responsibilities.



# EMC

## Coaching Skills Inventory

Areas explored include:

- Coach/Teacher Relationships, 4 items
- Coaching Skills, 4 items
- Mathematics Content, 3 items
- Mathematics-Specific Pedagogy, 5 items
- General Pedagogy, 8 items
- Background and practices as an educator

# Coaching Skills Inventory

## I. Coach/Teacher Relationships

	Not at All Effective				Very Effective
	1	2	3	4	5
1. How effective do you feel observing lessons and giving teachers feedback?	<input type="radio"/>				
2. How effective do you feel creating environments where teachers reflect openly on their instructional practices?	<input type="radio"/>				
3. How effective do you feel helping teachers set goals and objectives aimed at improving their instruction?	<input type="radio"/>				
4. How effective do you feel creating an environment of open discussion and constructive criticism with teachers?	<input type="radio"/>				



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## Teacher Needs Inventory

...is designed to help the teacher take ownership of the coaching process. The responses are used by the coach as a tool to help focus the coaching and increase effectiveness.

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## Teacher Needs Inventory

Areas explored include:

- Teaching Conceptual and Inquiry-Based Lessons, 4 items
- Classroom Environment, 4 items
- Conceptual Understanding of Mathematics, 6 items
- Mathematics Content Knowledge, 4 items
- Classroom Management, 3 items



# Teacher Needs Inventory

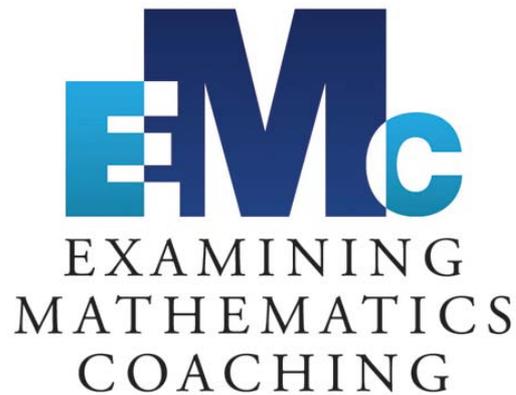
## IV. MATHEMATICS CONTENT KNOWLEDGE

Regarding this topic, ...

	Confidence Level					Regarding this topic, ...		
	Not at all Confident				Very Confident	I would not like to partner with my coach.	I'm not sure I would like to partner with my coach.	I would like to partner with my coach.
	1	2	3	4	5			
15. How confident are you with the mathematics you teach?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
16. How confident are you with the mathematics beyond the mathematics that you teach, meaning the next grade level?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
17. How confident do you feel planning lessons that include fraction concepts?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					
18. How confident do you feel planning lessons that include number sense and operations?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>					

# Consumers of Coaching

- Questions
- Insights
- Ideas
- Comments



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