



EMC
EXAMINING
MATHEMATICS
COACHING

ADMINISTRATIVE SURVEY BRIEF

OCTOBER 2013



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JOHN T. SUTTON, ELIZABETH A. BURROUGHS, AND DAVID A. YOPP

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University of Idaho

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For questions about this report, please contact the Examining Mathematics Coaching Project
at (877) 572-5032 or email: emc@math.montana.edu.

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OVERVIEW

The Examining Mathematics Coaching (EMC) Project is a research and development effort examining the effects of knowledge for coaching embedded in an innovative, previously developed coaching model applied to a population of K-8 teachers in diverse settings. It addresses the DRK-12 Proposal Solicitation challenge: How can the ability of teachers to provide STEM education be enhanced? The STEM discipline addressed is mathematics and the audience addressed is school-based mathematics coaches along with the teachers they coach. Research sites include rural, urban, and suburban school districts along with districts whose student populations are predominantly Native American.

At the beginning of Year 2 of the project (2010-11), the EMC Project PIs noted that in informal conversations with coaches and building/school administrators, there seemed to be little coherence or consistency in who, how, and why schools/districts hired and assigned coaches and determined which teachers were subsequently assigned to or benefited from interactions with coaches. In Fall 2010, the EMC Project PIs developed an administrative survey, comprised of nine open-ended response questions, which are listed in Exhibit 1. This survey, reviewed by a number of professionals external to the EMC Project, was designed to identify who in districts was responsible for hiring and assigning coaches, what was the criteria for selecting coaches, who was responsible for assigning teachers to coaches, and what criteria was used to inform that decision. Additionally, respondents would be asked to indicate whether they were involved in any of the hiring or assigning decisions, and to identify someone else within their district who should be contacted if they didn't feel able to answer any of the questions.

EXHIBIT 1. EMC ADMINISTRATIVE SURVEY QUESTIONS

EMC Administrative Survey Questions

1. Who is responsible for hiring mathematics coaches in your school and/or district? (Please identify the position of the person, e.g., Superintendent, Principal, etc., not the name of the person.) If you don't know or aren't sure, please enter Not Sure.
 2. Were you involved in the hiring process for a mathematics coach in your school and/or district?
 3. Who is responsible for assigning mathematics coaches in your school and/or district? (Please identify the position of the person, e.g., Superintendent, Principal, etc., not the name of the person.) If you don't know or aren't sure, please enter Not Sure.
 4. Were you involved in assigning mathematics coaches in your school and/or district?
 5. Who is responsible for assigning teachers to work with mathematics coaches in your school and/or district? (Please identify the position of the person, e.g., Superintendent, Principal, etc., not the name of the person.) If you don't know or aren't sure, please enter Not Sure.
 6. Were you involved in assigning teachers to work with mathematics coaches in your school and/or district?
 7. What are the criteria (or characteristics) used to determine if someone will be a good mathematics coach in your school and/or district? (Use commas or semicolons to separate different criteria in a list.) If you don't know or aren't sure, please enter Not Sure.
 8. What are the criteria (or data) used to determine if a teacher should be assigned to a mathematics coach in your school and/or district? (Use commas or semicolons to separate different criteria in a list.) If you don't know or aren't sure, please enter Not Sure.
 9. If you are not the person in your school and/or district who is best able to answer these questions, please provide in the box below the name (first and last), position title, and email address of the person who you believe would be the best person for us to send this questionnaire. Otherwise, skip this question and click continue.
-

METHODOLOGY

In late 2010, the EMC Project sent an electronic request to 103 school administrators associated with the 51 schools and 29 districts across seven states that are participating in the project. These administrators were requested to complete an online survey, which was posted using Survey Monkey, related to criteria for hiring coaches and placement of teachers with courses. The survey was made active in December 2010, invitations were sent out in December 2010, and responses were collected through March 2011. A total of 44 administrators responded to the survey, which constitutes a 43 percent response rate.

FINDINGS

This section presents a summary of findings based on the data collected from the online Administrative Survey administered in Winter-Spring 2010-11. The section is organized by identifying who is responsible for the hiring and assigning of coaches and the assignment of teachers. This is followed by identification of the number of respondents involved in the hiring and assignment process. The section concludes with a summary of the criteria used for coach hiring and assigning teachers to coaches.

PERSONNEL RESPONSIBLE FOR COACH HIRES AND ASSIGNMENTS

The respondents indicated that those involved in the hiring process of coaches, assignment of coaches, and assignment of teachers to coaches varied across schools, districts, and states depending on local policies and practice. In most instances, the hiring itself takes place at the district level, with a number of people representing various positions within the school and/or district involved in the candidate review and selection process. The assignment of mathematics coaches is done primarily from the central or district administration (Assistant Superintendents, Central Office staff, etc.) with the second largest group responsible for assigning coaches being the building principals. The assignment of teachers to coaches is done primarily by the building principal, with the second largest group identified as the teachers themselves through self-selection or voluntary participation. This follows a general pattern of moving from hiring coaches at the district level, assigning coaches at the central office/building level, and assigning teachers from the building to individual level. The following exhibit shows the variety of positions and number of schools/districts in which these positions are involved in the process.

EXHIBIT 2. VARIETY OF POSITIONS WITH RESPONSIBILITY FOR HIRING AND ASSIGNMENT

Question	Position	Number of Schools/ Districts	Involved in Hiring/ Placement
1. Who is responsible for hiring mathematics coaches in your school and/or district?	• School/Board/District Trustees	• 4	• 20 involved in hiring • 23 not involved • 1 no response
	• Superintendent	• 2	
	• Assistant or Associate Superintendent/ Executive Director/Directors (Curriculum and Instruction)/Central Office	• 19	
	• Principal	• 7	
	• Combination/Team of 2 or 3 (Supt. & Principal; Principal & Asst. Supt.; Asst. Supt. & Director/Coordinator)	• 6	
2. Who is responsible for assigning mathematics coaches in your school and/or district?	• Not Sure/Don't Have Coaches	• 6	• 19 involved in assignments • 23 not involved • 2 no response
	• Superintendent	• 2	
	• Assistant or Associate Superintendent/Executive Director/Directors (Curriculum and Instruction)/Central Office	• 20	
	• Principal	• 11	
3. Who is responsible for assigning teachers	• Combination/Team of 2 or 3 (Supt. & Principal; Principal & Asst. Supt.; Asst. Supt. & Director/Coordinator)	• 6	• 26 involved in assigning teachers
	• Not Sure/Don't Have Coaches	• 5	
	• Superintendent	• 1	
	• Assistant or Associate Superintendent/Executive Director/Directors	• 4	

to work with mathematics coaches in your school and/or district?	(Curriculum and Instruction)/Central Office		• 17 not involved
	• Principal	• 22	• 1 no response
	• Coach	• 1	
	• Teacher	• 8	
	• Combination/Team of 2 or 3 (Supt. & Principal; Principal & Asst. Supt.; Asst. Supt. & Director/Coordinator)	• 4	
• Not Sure/Don't Have Coaches	• 4		

MATHEMATICS COACH CRITERIA

When respondents were asked to describe the criteria used to determine whether or not someone was a good candidate to be a mathematics coach in a school or district, the overall most commonly referenced criterion was the ability to work with others. In particular, an individual able to work with a variety of adults such as teachers, administrators, supervisors, and all other staff was described as having the appropriate ability to work with others. A candidate's ability to work with others was often described as requiring strong interpersonal skills. Some mention of collaboration skills was also stated.

The next most commonly stated criteria stressed the demonstration of in-depth math content knowledge. Some specific mention of the type of math content knowledge a qualified individual should have included a familiarity with research-based best instructional practices and the ability to identify developmentally appropriate student subject matter. A focus on employing a person with an understanding of state, national, and multi-grade-level math standards, along with the school or district math curriculum, was also indicated.

Qualified individuals were very often described as having strong instructional knowledge and classroom teaching experience. The most frequently highlighted teaching-related criteria were an in-depth understanding of high-quality math pedagogy and teaching experience that consistently yielded high student outcomes. Some respondents identified expertise in applying developmentally appropriate instructional strategies and differentiated instructional practices as particular instructional skills that were required. Additionally, a familiarity with working with at-risk student populations, utilizing data to inform classroom decision-making, and teacher leadership experience were mentioned.

An emphasis on employing an individual with coaching skills was conveyed virtually as often as the need to employ an individual with instructional knowledge and classroom teaching experience. Coaching skills were generally described as the capacity to support teachers in professional development and understanding. The coaching-related qualities that were most commonly referred to were communication skills and prior coaching experience. Mention of targeted communication skills included the ability to effectively convey expectations, promote initiatives, and professionally correspond verbally and in writing. The ability to demonstrate and

model instructional strategies was a skill that was stated relatively frequently. There was also mention of understanding the ways adults learn.

Respondents also outlined certain worker characteristics as part of their criteria. The characteristics that were more frequently pinpointed were the ability to act with confidentiality and earn trust, a lifelong learner mindset, and organizational skills. Responses also provided mentions of individuals who have a passion for math, leadership skills, patience and persistence, a willingness to take the position, and respect or the ability to engender respect among staff members. There was also indication that flexibility, problem-solving skills, and a data-oriented mindset were a part of at least a set of criteria.

[Criteria include] coaching training, mathematics knowledge, understanding of child development, understanding of adult learning, patience, organization, experience in the classroom, [and] trustworthiness.

Respected by staff, expert in mathematical instruction, confidential, [and] highly organized.

... A good math coach also needs to understand developmentally appropriate instructional practice and math content and be able to assist and support teachers in understanding In addition, a math coach needs to be well read and grounded in best research practices connected to math concepts and instruction and be able to coach teachers to scaffold instruction for struggling students and enrich high-achievers to go above and beyond grade-level expectations.

[A coach must have]:

- *Previous coaching or teacher leadership experience.*
- *Demonstrated*
 - *knowledge of state and national standards;*
 - *[deep] knowledge of and experience in ... assessment-driven instruction in a standards-based system (teaching/learning process);*
 - *ability to communicate in a professional manner both orally and in writing;*
 - *strength in interpersonal, problem-solving, organizational, and communication skills and efficiency in meeting deadlines;*
 - *skills in analyzing and using data for instructional decision-making;*
 - *ability to function as a positive collaborative member of a team; and*
 - *interest and engagement in professional learning and reflection.*

[A] strong teacher who can model for other teachers and a willingness to develop a relationship of collaboration with those they work with.

Deep ... understanding of our district curriculum and philosophy in math, able to coach others which is to see where they can improve and where they need to go and get them there.

TEACHER PLACEMENT CRITERIA

When asked what criteria was used to determine whether a teacher should be assigned to a mathematics coach in a school or district, the most commonly stated criterion was to provide coaching at a teacher's request. Teachers were described as requesting guidance from a math coach if they identified a personal need for instructional assistance and/or were seeking additional professional development. The next most commonly occurring criterion that was stated with slightly less frequency was an administrative referral. A few of the respondents who indicated that their school or district incorporated the use of administrative referrals also stated that they only resulted in teachers' receiving coach assignments if they were willingly accepted.

Most of the noted school or district criteria that utilized administrative referrals were based on a teacher's demonstrated need for additional instructional support that generally resulted from observation and was not necessarily linked to data from student achievement outcomes. A need for additional instructional support was generally described as an identified need to improve instructional strategies, classroom management, content knowledge, or the implementation of an assigned curriculum. There were also some noted instances in which administrative referrals were explicitly linked to student performance outcomes. Assigning math instructional coaches based on new teacher status was somewhat frequently stated as a way of determining who received coaching. There were a small number of cases in which math instructional coaching was available for all teachers within a school or district. Overall, most school or district methods for determining which teachers had access to math coaches used more than one criterion.

Teachers who might need some extra support around moving toward the new curriculum; individuals that are deemed strong teachers but might need some persuasion to get out the delivery mode ... Individuals that agree to the process.

All teachers work with our coach: principal and coach together decide when and if any teacher needs additional, concentrated support based on walkthroughs, formal observations, coaching conversations, and certainly quantitative data.

A teacher who may be struggling with teaching in general, or with math in particular, and/or, a teacher wishing to learn in their ability to effectively teach math. A teacher who demonstrates lifelong learning characteristics. A teacher who welcomes constructive "criticism" and is open to suggestions and trying new approaches.

Students in the teacher's classroom are not making adequate yearly progress in math. Teacher is not teaching the district curriculum. Teacher is not using the curriculum materials appropriately.

Our math coach works with all teachers through weekly PLCs. She spends the majority of her time with new teachers, although she works with all teachers throughout the year.

Our coaches work only with teachers who invite them into their classroom. Administrators can suggest to teachers that they work with coaches but we never require it. Also, the relationship between the coach and the teacher is confidential; officially administrators don't know who is working with whom.

CONCLUSION

- ***Many people at different levels are involved in the hiring and assigning of coaches and teachers.*** As a general pattern, district-level staff are involved in the hiring of mathematics coaches, central office staff are responsible for assigning coaches, and teachers and building principals are responsible for assigning teachers to coaches.
- ***Criteria for hiring coaches cover a continuum of skills and expertise.*** Relationships play a heavy role in the skill set considered for hiring coaches. Additionally, a wide range of skills and expertise was reported across schools, districts, and states.
- ***Assigning teachers to coaches is predominantly left to individual teachers or their principals.*** The most common response was teachers' voluntarily seeking guidance from a coach. Even when an administrative referral is made for a teacher to work with a coach, it is up to the teacher to accept or reject the assignment, leaving the choice, again, up to the teacher to participate.

RECOMMENDATION

1. ***Develop a list of criteria for coach selection that reflects respondents' ideas.*** Because there is a wide continuum of criteria currently being used and limited commonality across schools and/or districts, it is recommended that EMC staff (a) craft a set of criteria based on common responses provided by administrative survey respondents and post these criteria on the EMC Web site, and/or (b) prepare an article that presents this information to help other administrators make better-informed decisions.