

# Foreword

**C***ultivating a Math Coaching Practice: A Guide for K–8 Math Educators* is a book by, for, and about coaches and their supervisors. Amy Morse—who, in the 1990s, worked as a math coach for an urban school district and since then has supported the professional development of math coaches in various school systems throughout the country—recognized a growing need and has created this book to provide it.

Many schools are setting ambitious goals for mathematics instruction. Rather than exclusively focusing on speedy and accurate calculation, teachers are now being asked to structure activities and facilitate discussions that help students make connections among mathematical concepts, various types of representations, and real-world contexts. In addition to the content of number and operations, young, elementary students are to delve into the study of geometry, data, and early algebraic concepts. There is much greater emphasis on mathematical *understanding* in several mathematical realms, in addition to computational fluency.

To achieve a practice that embodies these ambitious goals, teachers must develop a qualitatively different and significantly richer understanding of mathematics than most now possess. They must come to see learning as the result of students' active efforts to make things comprehensible for themselves, and they must come to recognize common places where children need to stop and work through conceptual issues implicated in the mathematics to be learned. Teachers must acquire new pedagogical habits and routines, and where school systems have adopted new mathematics programs to align with new goals, they must learn to use a new curriculum effectively. The demands on teachers are considerable.

Even where strong professional development programs are in place, translating new insights into classroom practice is a difficult, and often a frustrating, process. The many demands on teachers' time, conflicting district policies, and the pressure of standardized tests may all reduce the actual effect that professional development has on instruction. Implementation efforts may be put off indefinitely. Initial efforts that do not meet with instant success (the norm rather than the exception) are often abandoned. A more profound and longer-lasting impact can be realized when programs integrate classroom support with professional development.

In recognition of this, many school systems have created the position of *mathematics coach* or *mathematics specialist*. The mathematics coach provides regular classroom consultation offering support as changes are introduced into the classroom, sustaining teachers' learning in the context that matters most.

However, with a new role established in the school system, many new questions arise: When coaches enter a classroom, what do they look for and how do they interact with teachers and students? What and how do coaches communicate with teachers before and after lessons? What are the responsibilities of mathematics coaches? What authority do they have? With whom do they negotiate? And most important, what must a coach understand to coach effectively?

*Cultivating a Math Coaching Practice* is an important resource for coaches and their supervisors who ponder such questions. Filled with cases written by mathematics coaches, it provides images of coaches in classrooms, coaches in meetings with teachers, coaches in discussion with principals, and coaches sitting alone working on issues of their practice. And it suggests some answers.

First, coaches must understand that the practice of coaching requires thoughtful reflection and continued learning. They must be prepared to learn mathematics, analyze student thinking, examine curriculum, and consider alternative teacher moves.

Second, coaches must work on developing strategic moves for teacher learning: How do you bring teachers' attention to mathematics content, to significant aspects of student thinking, and to the impact of their actions in the classroom? How do you help teachers develop the skills and habits of preparing for a lesson, of eliciting student thinking, and of analyzing student work?

Third, coaches must navigate the administrative structures of a school. What structures are in place that provide teachers and coaches the opportunity to reflect together? What niches can be used to open up a space for communication between teacher and coach? How can a coach negotiate with school administrators to align structures and policies more closely with the goals for mathematics instruction?

*Cultivating a Math Coaching Practice* provides a mechanism to initiate the processes of learning, reflecting, and navigating required for effective coaching. That is, this book is material for the professional development of mathematics coaches and brings readers right into the heart of the central issues of practice. For new coaches, it will help them prepare for the situations they are about to confront. For experienced coaches, it will support them in deepening their practice, by helping them become more effective in their work. For coaches who meet together, *Cultivating a Math Coaching Practice* can support the development of a culture of collegial inquiry, sharing and discussing dilemmas that arise in their work. For those who read the book on their own, it provides a connection to the community of coaches engaged in this important enterprise.

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