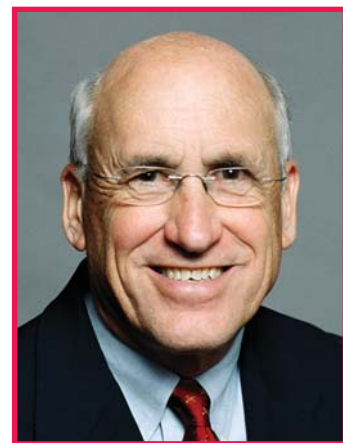


President's Message

We Need Elementary School Mathematics Specialists NOW

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In 1984, an article appeared in the *Arithmetic Teacher* that asked an important question—"Elementary School Mathematics Specialists: Where Are They?" This was written by John Dossey, who later served as NCTM president. Now it is 2006, and I am again asking, where are the mathematics specialists? We need you NOW in elementary schools and at every other level in prekindergarten through grade 12 mathematics education.

Many school systems are exploring ways to ensure that their students receive mathematics instruction from teachers who have a deep understanding of mathematics content and pedagogy; however, some still see this problem as being less important at the elementary school level. Major reports—including *Principles and Standards for School Mathematics* (NCTM 2000), *Adding It Up* (National Research Council 2001), and the *Mathematical Education of Teachers* (Conference Board of the Mathematical Sciences 2001)—have called for mathematics specialists. In 1981 the NCTM Board of Directors recommended that state certification agencies provide for a mathematics specialist endorsement on teaching credentials for elementary school teachers. Some states, such as Virginia and Massachusetts, have taken the challenge seriously and now offer graduate-level certification for mathematics specialists. However, the requirements of the No Child Left Behind Act for school accountability in mathematics achievement have probably done the most to draw attention to the need for mathematics specialists in our schools.

Why do we need mathematics specialists at the elementary school level? A student's view of what it means to know and do mathematics is shaped in elementary school; yet in the United States, elementary teachers are, for the most part, generalists. Their preservice teacher education typically includes two or three courses in mathematics content and one course in the teaching of mathematics. Their teaching load generally consists of a full range of subjects, with particular attention to reading or language arts in a self-contained classroom. A mathematics specialist is needed because the preservice background and general teaching responsibilities of elementary teachers do not typically furnish the continuous development of specialized knowledge required for teaching mathematics today.

What do mathematics specialists do? A number of specialist models are used in school districts in this country and Canada. The most common models are the lead teacher model and the specialized teacher model. The lead teacher model typically involves a teacher in the role of mathematics resource person for a single staff. Sometimes called a specialist or coach, such teachers mentor others in the school in planning and teaching. They assist staff in interpreting data and designing approaches to improve students' achievement and instruction and help ensure that mathematics instruction is aligned with state and local curricular frameworks.

They facilitate teachers' use of instructional strategies, including differentiated instruction for diverse learners, and they work with families and community leaders to foster school-based partnerships focused on learning mathematics. In addition, they provide schoolwide and, to a lesser extent, districtwide professional development for teachers. Variations of this model may include intervention with small groups of children. Some lead teacher/specialist/coach models emanate from the school district office, where the teacher specialist is responsible for more than one site. The specialized teacher model gives one teacher the primary responsibility for teaching mathematics. The specialized teacher typically has responsibility for a single grade—often at the upper grade levels (e.g., grades 4 or 5). Although the specialized teacher cannot have the same impact as a lead teacher or districtwide specialist, this model allows the school district to focus professional development and related initiatives on a targeted teacher cadre. This model has economic advantages because it does not require additional teachers, just a redistribution of teaching responsibilities.

As school districts determine their need for mathematics specialists and find ways to support them, the selection and continued support of mathematics specialists becomes very important. Who is selected? Why? Should the specialist be the best mathematics teacher in the building? The teacher who knows the most mathematics? The teacher who would be the best fit in working with other teachers? These considerations—content background, teacher expertise, and the potential for leadership—are all important. Equally important are recognition and support from the principal and local school district supervisor, who share the responsibility for delivering high-quality mathematics instruction to all children.

Although my focus here has been on the crucial need for a teacher leader/specialist at the elementary level, there are similar needs at the middle and high school level. Call them department chairs. Call them building specialists. Their roles, as mentors and as bridges between teachers and building administrators, are essential at all grade levels. Middle and high school mathematics teachers need ongoing content and pedagogical assistance as well. We all do.

Now more than ever, teachers need support. Schools and school districts are beginning to recognize the important role of the mathematics specialist. Over the years, the ExxonMobil Foundation has helped to provide a variety of mathematics specialist models around the country. We need to build on this work and the work of other mathematics leadership initiatives. Mathematics specialists can make a difference in improving mathematics instruction. We need you—NOW!

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