

Foreword

Welcome to the fifth AMTE Monograph: *Inquiry into Mathematics Teacher Education*. The 14 chapters in this monograph provide support for mathematics teacher educators in both their Practical Knowledge, or that knowledge gained through reflection on practice, and their Professional Knowledge, which encompasses practical knowledge and includes research-based knowledge (Hiebert, Gallimore, & Stigler, 2002). (See Arbaugh and Taylor for an elaboration of these types of knowledge as well as more detail on the contents of the monograph.) As Arbaugh and Taylor suggest, individually these articles provide insights into advancing our thinking about professional development, teacher preparation, and program development. Collectively, they have the potential to help the field of mathematics teacher education move forward in framing effective practices in mathematics teacher education and developing a focused, cohesive research agenda. AMTE's Monograph 5, therefore, is a superb resource for mathematics teacher educators as they think about their own practice and about engaging in inquiry related to mathematics teacher education. The context in which this monograph has emerged is worth mention.

This year, 2008, brought much attention to mathematics teacher education, in particular to the quality of mathematics teachers' knowledge. In February the National Mathematics Advisory Panel (NMAP) released their report, titled *Foundations for Success*, in which they discussed the research findings related to connecting mathematics teachers' content knowledge to student achievement. This panel found that teachers' content knowledge plays an important role in their effectiveness -- most importantly when the teachers' content knowledge is directly related to the mathematics that they teach (as compared to teachers' understanding of advanced content knowledge).

In the summer of 2008 the National Council of Teacher Quality (NCTQ) released its report, titled *No Common Denominator: The Preparation of Elementary Teachers in Mathematics by America's Education Schools*. Through their review of various lists of recommended content for elementary teachers, the report recommends that all teacher preparation programs offer nine hours of mathematics content that is specific to teachers (not general college mathematics courses).

In the fall of 2008 the National Academy of Education (NAE) released a series of White Papers, including one titled "World Class Science and Mathematics." Included in this two-page brief is a recommendation for increased research on effective teaching, recognizing the importance of developing our professional knowledge:

Teaching science and mathematics is highly skilled, knowledge-intensive, complex work. ...In addition to knowing the subject matter, science and

mathematics teachers must have a specialized kind of knowledge that enables them to engage students in active conceptual learning. (p. 2)

Although these reports (and others like them) differ in their specific findings and recommendations, what they have in common is (1) an awareness of the importance of mathematics teacher education and (2) the need for a stronger professional knowledge in mathematics teacher education.

More and more, the education community looks to AMTE to provide leadership in moving the field forward in the professional knowledge for teaching mathematics. This monograph, as well as the four that precede it, represents one of the important ways that AMTE is contributing to this effort. It is through their commitment to mathematics teacher education that the contributing authors, the editorial panel, and the editors made this important resource possible.

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The review process for AMTE Monograph 5 was as follows. The editors received 46 manuscripts for review. Each manuscript underwent a blind review by two editorial board members and one editor. When all reviews were complete, the editors chose 13 manuscripts for inclusion in the monograph, based on numerical review scores and reviewers' comments.

Collectively, these editors and chapter authors contributed to a tremendous resource that provides a breadth and depth of practical and professional knowledge – a resource that can lead us to reflect and engage in inquiry on mathematics teacher education.

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