JOURNAL OF

MATHEMATICS EDUCATION AT TEACHERS COLLEGE

A Century of Leadership in Mathematics and Its Teaching

Beyond Teaching Mathematics

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PREFACE

This issue of the *Journal of Mathematics Education at Teachers College* includes seven articles that represent different ways of going beyond teaching mathematics. In *Principles to Actions,* the National Council of Teachers of Mathematics outlines guiding principles for teaching and learning mathematics which support the view that "an excellent mathematics program requires effective teaching that engages students in meaningful learning through individual and collaborative experiences that promote their ability to make sense of mathematical ideas and reason mathematically."[1] Each of the articles in this issue demonstrates at least one of these effective teaching practices, from *access and equity* to *professionalism,* by reaching beyond the teaching of mathematics content and skills to focus on the development of mathematicians and the establishment of a mathematical community.

Based on his talk from the Columbus Day Symposium at Teachers College, Dr. Geoffrey Howson's article highlights what we mean by *going beyond teaching mathematics* and provides some of his thoughts on the education of the mathematically gifted. In particular, Dr. Howson calls for an increased focus on helping students to learn how to become mathematicians, to learn *about* mathematics, and to develop an *interest* in mathematics. Although his comments concern the mathematically gifted, there is no doubt that these practices can, and should, be adopted for the education of all students, from elementary school to college and teacher education programs.

The remaining articles go beyond the teaching of mathematics in a variety of ways, each fitting into one of two subthemes: establishment of mathematical community and development of mathematicians. Three articles raise awareness of our respective positions within a larger mathematical and educational community. First is an examination of secondary teachers' and college professors' views of the preparation of students for college calculus, which goes beyond teaching calculus to encouraging communication between teachers and professors who are situated at two ends of the transition between secondary and college mathematics. The next two articles bring our attention to what it means to be included in the mathematical community through an examination of the effects of standardized testing on teaching practice in one article and through an investigation into preservice teachers' conceptions of teaching for social justice in the other.

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[1] National Council of Teachers of Mathematics. (2014). *Principles to Actions: Ensuring Mathematical Success for All.* Reston, VA: Author.

PREFACE (Continued)

In the last three articles, our attention shifts to the development of mathematicians. The first goes beyond teaching proofs to preservice teachers by exploring how the use of manipulatives and proof-related tasks can help preservice teachers develop their ability to foster proving events in their middle school students. Through providing examples of playful learning activities, the next article really exemplifies Dr. Howson's comments about striving to help students develop an interest in mathematics. This issue concludes with an examination of a teacher's use of a problem posing activity that goes beyond teaching and evaluating mathematical procedures in order to assess students' creativity and ability to pose problems, which is arguably the real work of the mathematician.

Whether you are a mathematics teacher or teacher educator, novice or veteran, and whether you are interested in elementary, secondary, or collegiate mathematics, we at *JMETC* hope that you will discover a breadth of knowledge that can help you to enhance your teaching practices by not only teaching mathematics reflectively but also by conceptualizing part of your role as preparing future mathematicians and participating in the mathematics education community.

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Guest Editors