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Abramovich, S. (2017) *Diversifying mathematics teaching: Advancing educational content and methods for prospective elementary teachers*. Singapore: World Scientific Publishing.

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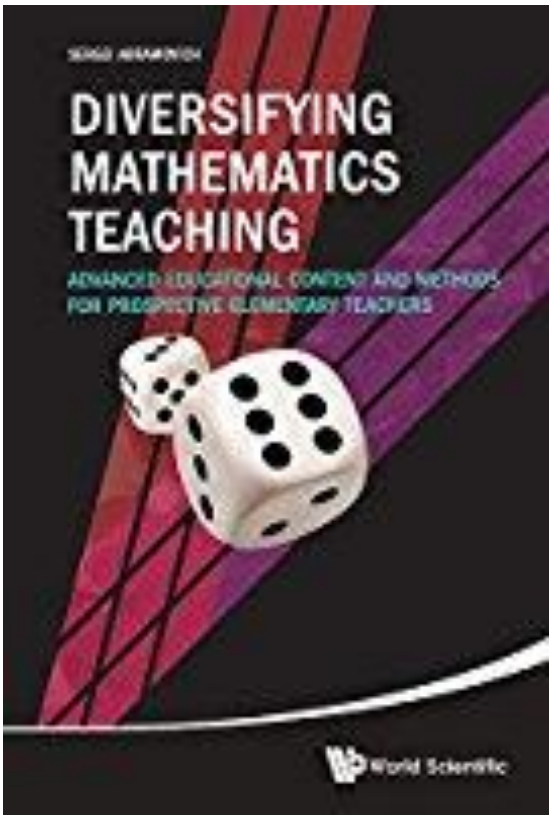

Diversifying Mathematics Teaching aims to prepare pre-service elementary teachers to teach mathematics. The author, Professor Sergei Abramovich from State University of New York at Potsdam, based the book on his extensive experience—two decades to be exact—in advising and preparing pre-service and practicum students for the classroom. As a recent Ph.D. graduate of the University of Wisconsin-Madison Curriculum and Instruction program, I supervised pre-service and practicum students through my teaching assistantship. If Professor Abramovich's book had been available during my time as a university supervisor it would have been an essential resource in planning my instruction, and I would have recommended it to my colleagues.

The book focuses on developing pre-service teachers' mathematics knowledge and ability to attend and respond to students' thinking. Specifically, the chapters are organized around content, including many

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sample problems, both to stimulate the reader's thinking about the content, but also to be used by pre-service teachers in their classrooms. It is through understanding these problems and the mathematics behind them that pre-service teachers gain a deeper understanding of the pedagogy around that content.

The book is grounded in the author's expert experience, situated in the historical context of mathematics, and supported by research, frequently referencing up-to-date citations. The author incorporates history and culture, for instance, when introducing a combinatorics problem. After introducing the problem, the author shares a brief history of this branch of mathematics and how it laid a foundation for probability, a topic discussed later in the book. In addition to personal experience and history, the author's perspective is grounded in research and theory. For example, in Chapter 3 the author explains the role of Vygotskian sociocultural theory (Vygotsky, 1978) in designing mathematics problems that support students in using context and de-contextualizing their ideas.

Abramovich's book is certainly one of many books that focus on preparing prospective elementary teachers to teach mathematics, but it is unique in terms of variety. As indicated by the title the book consistently strives to diversify the ways in which educators teach elementary mathematics. Abramovich's approach includes variety in many different forms. First, the book includes a variety of international perspectives on elementary mathematics instruction. Abramovich's student population is composed of both American and Canadian students, and he includes information about elementary mathematics standards and requirements in several European and Asian countries and Australia.

A strength of this book is that it addresses a wide range of mathematics topics and content areas. Each of the nine chapters cover a different mathematics topic, and many of the content areas covered in this volume typically are not included in the traditional elementary mathematics curriculum. Interestingly, the topics and problems are presented in a way that seamlessly coincides with and enhances the traditional elementary curriculum. Furthermore, all topics and accompanying problems are age appropriate and intellectually accessible and stimulating for young students. The author shares unique examples that require the reader to problem solve, helping them gain insight about how their students might respond to and understand these problems themselves. For example, in chapter 7 the author asks readers to consider tasks that do not presuppose a single answer. Instead these tasks require the reader to engage in authentic problem solving, which can result in a variety of outcomes, each valid with a relevant justification.

Abramovich's conceptualization of mathematics becomes clear in Chapter 6 when he discusses the "hidden curriculum" (Abramovich, 2014; Abramovich & Brouwer, 2006). He views mathematics as an interconnected web of knowledge or ideas, and all topics and content areas as related. He conveys this idea to the reader through his explanation of the hidden curriculum: elementary mathematics is not constructed of discrete ideas, but rather the activities and problems that appear to be scattered throughout the curriculum are indeed connected through a common conceptual structure. The structure is "hidden" because it is complex and impossible to conceive without having a deep and broad understanding of the individual parts. Through a series of related problems, Abramovich makes it clear to the reader that the aim of the book is to foster a certain kind of thinking among pre-service teachers, namely, that there are multiple ways to represent the same idea, and this can be a powerful approach to diversifying the teaching of mathematics.

In short, Abramovich's book exemplifies high quality teaching of teachers. As explained by another author in this journal, Abramovich has mastered demonstrating "how to think mathematically" (Fowler, 2011, p. 2). His book is the epitome of "practice what you preach," and would be an excellent resource for pre-service and in-service teachers, as well as graduate students who are studying mathematics teaching from a theoretical perspective.

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About the Reviewer

Susanne Strachota graduated with her PhD in Mathematics Curriculum and Instruction from University of Wisconsin Madison. She studies algebraic reasoning, specifically how students generalize. Before graduate school Susanne taught high school mathematics in Boston, MA.

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