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Book Review / Recension d'ouvrage

The Mathematics Education of Prospective Secondary Teachers Around the World

by Marilyn E. Strutchens, Rongjin Huang, Leticia Losano, Despina Potari, Márcia Cristina de Costa Trindade Cyrino, João Pedro da Ponte, and Rose Mary Zbiek
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Reviewed by/ Revu par

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The mathematics education of prospective secondary teachers around the world, by Strutchens et al. (2017), reviews current research on prospective secondary mathematics teachers' (PSMT) knowledge, preparation and technology, professional identity, and field experiences. Therefore, this book will be very useful for researchers who are interested in the recent studies on PSMTs.

The first part, chapter two, clearly outlines current research on PSMTs' knowledge of mathematics and mathematics teaching by reviewing journal articles. The authors focused on studies about PSMTs' knowledge of mathematical content, aspects of knowledge, and theoretical perspectives governing the articles. Chapter two also describes the studies focusing on the relationship between PSMT's content knowledge and pedagogical content knowledge. Lastly, the authors review studies on the impact of teacher education programs on knowledge and the actual process of development in the teacher education program. The authors conclude that research shows PSMT knowledge is plagued by conceptual difficulties in mathematics.

Chapter three addressed the relationship between PSMT preparation and technology. The authors had searched mathematics education journals and had surveyed how PSMTs' knowledge is framed by technological, pedagogical and content knowledge and the relationship between teacher practica and technology. They concluded that studies show that preparing PSMTs to teach secondary mathematics with technology is important, and technology can help with questions about student-centered instruction and in lesson planning.

Chapter four analyzed how PSMTs establish their identities through pre-service education. The authors reviewed 14 articles related to professional identity, and they concluded that most of the articles argue for the importance of field experiences, and

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according to the current research, the teacher education programs should offer more time for PSMTs to think about their professional identity.

Chapter 5 focused on PSMTs' field experiences. The authors reviewed studies related to field experiences including field experiences connected to methods courses, student teaching experience, relationships with cooperating teachers and university supervisors, and program organization of field experiences. The authors concluded that the studies provide valuable insights into how to effectively incorporate field experiences into the preparation of PSMTs.

There are two things that could have been better in this book. First, the authors did not try to survey journal articles about the quality of the *faculty* of the teacher education programs, and they only focused on studies showing that PSMT knowledge is plagued. This book would have been more useful if the authors had reviewed articles reviewing both PSMTs and the faculty members because the qualities of the faculty members have a major influence on PSMT knowledge (Baştürk, 2011).

Second, it would have been better if the authors had tried to review journal articles also arguing whether the faculty of the teacher education programs are ready to teach how to use technology. For example, the authors could find articles asking the following questions: Are college faculty members fully capable of teaching PSMTs how to use technology? How many faculty members know more about the SMART Board than teachers? Do PSMTs need to learn how to use the SMART Board during student teaching practice, but not in college? The authors concluded that studies show technology is important. However, the authors did not focus on studies arguing *how* to prepare PSMTs to teach secondary mathematics with technology. Blackwell and Yost (2013) found that there are many teacher candidates who possess the ability to use technologies on multiple levels, but baby boomer teacher educators are not capable of creating opportunities for these students that allow them to use their technology skills.

In summary, this book serves as a sufficient source of information on current studies about the education of PSMTs. However, this book would have had a nice balance if it had also focused also on the studies about the quality of the faculty of the teacher education programs.

References

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