Contents

Part I  Introduction

Framing the Enterprise: Benefits and Challenges of International Studies on Teacher Knowledge and Teacher Beliefs—Modeling Missing Links ................................................. 3
  Sigrid Blömeke

Theoretical Framework, Study Design and Main Results of TEDS-M . . 19
  S. Blömeke and G. Kaiser

Learning About and Improving Teacher Preparation for Teaching Mathematics from an International Perspective ............... 49
  Yeping Li

Part II  Knowledge at the End of Teacher Education: International Perspectives

Knowledge of Future Primary Teachers for Teaching Mathematics:
  An International Comparative Study ........................................ 61
  Sharon L. Senk, Maria Teresa Tato, Mark Reckase, Glenn Rowley,
  Ray Peck, and Kiril Bankov

Teacher Education Effectiveness: Quality and Equity of Future Primary Teachers’ Mathematics and Mathematics Pedagogical Content
  Knowledge ........................................................................ 91
  Sigrid Blömeke, Ute Suhl, and Gabriele Kaiser

In-depth Analyses of Different Countries’ Responses to MCK Items:
  A View on the Differences Within and Between East and West . . . 115
  Feng-Jui Hsieh, Chi-Tai Chu, Chia-Jui Hsieh, and Pi-Jen Lin

Why Did Taiwan Excel: Hot Topics and Pressing Issues ............... 141
  Feng-Jui Hsieh, Pei-Chen Wu, and Ting-Ying Wang
The Preparation of Primary Mathematics Teachers in Singapore: Programs and Outcomes from the TEDS-M Study ........................ 163
Khoon Yoong Wong, Kok Leong Boey, Suat Khoh Lim-Teo, and Jaguthsing Dindyal

Teacher Education Effectiveness: Quality and Equity of Future Primary and Future Lower Secondary Teachers’ General Pedagogical Knowledge .................................. 187

Part III Beliefs at the End of Teacher Education: International Perspectives

The Cultural Dimension of Beliefs: An Investigation of Future Primary Teachers’ Epistemological Beliefs Concerning the Nature of Mathematics in 15 Countries .................... 209
Anja Felbrich, Gabriele Kaiser, and Christiane Schmotz

The Cultural Notion of Teacher Education: Future Lower Secondary Teachers’ Beliefs on the Nature of Mathematics, the Learning of Mathematics and Mathematics Achievement ............ 231
Shu-Jyh Tang and Feng-Jui Hsieh

The Cultural Notion of Teacher Education: Comparison of Lower-Secondary Future Teachers’ and Teacher Educators’ Beliefs ........ 255
Ting-Ying Wang and Feng-Jui Hsieh

An Examination of Future Primary Teachers Attitudes About the Teaching of Mathematics: An International Perspective .... 279
Nathan Burroughs and William Schmidt

Part IV Does Teacher Education Matter?

Homogeneity or Heterogeneity? Profiles of Opportunities to Learn in Primary Teacher Education and Their Relationship to Cultural Context and Outcomes .................................... 299
Sigrid Blömeke and Gabriele Kaiser

Family Background, Entry Selectivity and Opportunities to Learn: What Matters in Primary Teacher Education? An International Comparison of Fifteen Countries .......................... 327
Sigrid Blömeke, Ute Suhl, Gabriele Kaiser, and Martina Döhrmann

Primary Teacher Preparation in the United States: What We Have Learned .......................................................... 355
Leland Cogan, William H. Schmidt, and Richard Houang

Emphasis and Balance among the Components of Teacher Preparation: The Case of Lower-Secondary Mathematics Teacher Education .... 371
William H. Schmidt, Leland Cogan, and Richard Houang
Greater Expectations in Lower Secondary Mathematics Teacher Preparation: An Examination of Future Teachers’ Opportunity to Learn Profiles .................................................. 393
William Schmidt and Leland Cogan

Does School Experience Matter for Future Teachers’ General Pedagogical Knowledge? .................................................. 415
Johannes König and S. Blömeke

Part V Assessment Challenges with Respect to Teacher Knowledge

The Conceptualisation of Mathematics Competencies in the International Teacher Education Study TEDS-M .............. 431
Martina Döhrmann, Gabriele Kaiser, and Sigrid Blömeke

A Conceptualization of Indicators for Mathematics Teacher Education Quality for International Studies ........................................ 457
Feng-Jui Hsieh, Chiu-Keung Law, Haw-Yaw Shy, Ting-Ying Wang,
Chia-Jui Hsieh, and Shu-Jyh Tang

Diagnosing Teacher Knowledge by Applying Multidimensional Item Response Theory and Multiple-Group Models .............. 483
Sigrid Blömeke, Richard T. Houang, and Ute Suhl

Are College Rankings an Indicator of Quality Education? Comparing Barron’s and TEDS-M .................................................. 503
William Schmidt, Nathan Burroughs, Lee Cogan, and Richard Houang

Part VI Conclusions: What We Have Learned and Future Challenges

Learning from the Eastern and the Western Debate—The Case of Mathematics Teacher Education ........................................ 517
Gabriele Kaiser and Sigrid Blömeke

Assessment of Teacher Knowledge Across Countries: A Review of the State of Research ............................................ 541
Sigrid Blömeke and Séan Delaney

Index ................................................................. 587
International Perspectives on Teacher Knowledge, Beliefs and Opportunities to Learn
TEDS-M Results
2014, IX, 592 p. 132 illus., Hardcover
ISBN: 978-94-007-6436-1