## Contents

1. **Professional Competence of Teachers, Cognitively Activating Instruction, and the Development of Students’ Mathematical Literacy (COACTIV): A Research Program**
   Jürgen Baumert, Mareike Kunter, Werner Blum, Uta Klusmann, Stefan Krauss, and Michael Neubrand

### Part I Theoretical and Empirical Foundations

2. **The COACTIV Model of Teachers’ Professional Competence**
   Jürgen Baumert and Mareike Kunter

3. **Teacher Education in Germany**
   Kai S. Cortina and Mark Hoover Thames

4. **The Development of Teachers’ Professional Competence**
   Mareike Kunter, Thilo Kleickmann, Uta Klusmann, and Dirk Richter

5. **The COACTIV Research Program: Methodological Framework**
   Katrin Löwen, Jürgen Baumert, Mareike Kunter, Stefan Krauss, and Martin Brunner

6. **The Model of Instructional Quality in COACTIV: A Multicriteria Analysis**
   Mareike Kunter and Thamar Voss

7. **Task Analysis in COACTIV: Examining the Potential for Cognitive Activation in German Mathematics Classrooms**
   Michael Neubrand, Alexander Jordan, Stefan Krauss, Werner Blum, and Katrin Löwen
Part II  Aspects of Professional Competence

8 Mathematics Teachers’ Domain-Specific Professional Knowledge: Conceptualization and Test Construction in COACTIV ................................................................. 147
Stefan Krauss, Werner Blum, Martin Brunner, Michael Neubrand, Jürgen Baumert, Mareike Kunter, Michael Besser, and Jürgen Elsner

9 The Effect of Content Knowledge and Pedagogical Content Knowledge on Instructional Quality and Student Achievement ..... 175
Jürgen Baumert and Mareike Kunter

10 Teachers’ General Pedagogical/Psychological Knowledge .................. 207
Thamar Voss and Mareike Kunter

11 The Diagnostic Skills of Mathematics Teachers ........................................ 229
Martin Brunner, Yvonne Anders, Axinja Hachfeld, and Stefan Krauss

12 Mathematics Teachers’ Beliefs .............................................................. 249
Thamar Voss, Thilo Kleickmann, Mareike Kunter, and Axinja Hachfeld

13 Motivation as an Aspect of Professional Competence: Research Findings on Teacher Enthusiasm .................................................. 273
Mareike Kunter

14 Occupational Self-Regulation ............................................................... 291
Uta Klusmann

Part III  The Development of Professional Competence

15 Individual Characteristics of Prospective Teachers ............................. 311
Uta Klusmann

16 Learning at University ............................................................................ 321
Thilo Kleickmann and Yvonne Anders

17 Professional Development Across the Teaching Career .................... 333
Dirk Richter

Part IV  Discussion

18 The COACTIV Research Program on Teachers’ Professional Competence: Summary and Discussion ................................................ 345
Mareike Kunter and Jürgen Baumert

19 Publications from the COACTIV Research Program (January 2013) ................................................................. 369
Mareike Kunter, Jürgen Baumert, Werner Blum, Uta Klusmann, Stefan Krauss, and Michael Neubrand

Index ................................................................................................................. 375
Cognitive Activation in the Mathematics Classroom and Professional Competence of Teachers
Results from the COACTIV Project
2013, VI, 378 p., Hardcover
ISBN: 978-1-4614-5148-8