

Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education
Table of Contents

Edited by Carmen Batanero, Gail Burrill and Chris Reading

Preface..... ix.
International Programme Committee xvii

Part I Global Perspective Gail Burrill

1 Statistics School Curricula in Brazil 5
Tania MM. Campos, Irene M. Cazorla, and Veronica Y. Kataoka

2 Statistics Education in the United States: Statistical Reasoning
and the Statistical Process..... 9
Jill Newton, Leslie Dietker, and Aladar Horvath

3 Statistics School Curricula for Uganda 15
Charles Opolot and Patrick Opyene Eluk

4 Statistics in the South African School Curriculum 21
Helena Wessels

5 Developing a Statistic Curriculum for Future Secondary Mathematics Teachers 27
Amy Froelich

6 Future Teachers' Training in Statistics: The Situation in Germany 33
Laura Martignon

7 An Experience in Training Mathematics Teachers for Teaching Statistics in Iran 37
Ahmad Parsian and Ali Rejali

8 Reform Efforts in Training Mathematics Teachers
to Teach Statistics: Challenges and Prospects..... 41
Enriqueta Reston and Lisa Grace Bersales

9 Statistical Training of Central American Teachers 47
M. Alejandra Sorto

Part II Fundamentals for Teaching Statistics Chris Reading

10 Fundamental Statistical Ideas in the School Curriculum
and in Training Teachers 57
Gail Burrill and Rolf Biehler

11 Strengthening the Role of Probability Within Statistics Curricula 71
Manfred Borovcnik

Table of Contents

12	Frequentist Approach: Modelling and Simulation in Statistics and Probability Teaching	85
	Brigitte Chaput, Jean-Claude Girard, and Michel Henry	
13	The Role of Technology in Teaching and Learning Statistics	97
	Dave Pratt, Neville Davies, and Doreen Connor	
14	Teaching Statistical Thinking Through Investigative Projects	109
	Helen MacGillivray and Lionel Pereira-Mendoza	
15	Complementing Mathematical Thinking and Statistical Thinking in School Mathematics	121
	Linda Gattuso and Marla Gabrielia Ottaviani	
16	Assessment of Learning, for Learning, and as Learning in Statistics Education	133
	Joan Garfield and Christine Franklin	

Part III Teachers' Beliefs, Attitudes and Knowledge Carmen Batanero

17	Teachers' Beliefs About Statistics Education.....	151
	Robyn Pierce and Helen Chick	
18	Teachers' Attitudes Towards Statistics	163
	Assumpta Estrada, Carmen Batanero, and Stephen Lancaster	
10	Statistics Teachers and Classroom Practices.....	175
	Andreas Eichler	
20	Teachers' Graphical Competence	187
	M. Teresa González, M. Candelaria Espinel, and Janet Ainley	
21	Teachers' Understanding of Averages.....	199
	Tim Jacobbe and Carolina Carvalho	
22	Teachers' Understanding of Variation.....	211
	Ernesto Sanchez, Claudia Borim da Silva, and Citeda Coutinho	
23	Teachers' Knowledge of Distribution.....	223
	Chris Reading and Dan Canada	
24	Students and Teachers' Knowledge of Sampling	235
	Anthony Harradine, Carmen Batanero, and Allan Rossman	
25	Correlation and Regression in the Training of Teachers.....	247
	Joachim Engel and Peter Sedlmeier	
26	Teacher Knowledge of and for Statistical Investigations.....	259
	Tim A. Burgess	

Teaching Statistics in School Mathematics-Challenges for Teaching and Teacher Education
Table of Contents

27 Models for Statistical Pedagogical Knowledge 271
Juan D. Godino, Juan J. Ortiz, Rafael Roa, and Miguel R. Wilhelmi

28 Measuring Levels of Statistical Pedagogical Content Knowledge 283
Rosemary Callingham and Jane Watson

Part IV Challenges and Experience in Teacher Education
Carmen Batanero

29 Preparing Teachers to Meet the Challenges of Statistics Education 299
João Pedro da Ponte

30 Developing Statistical Literacy in Students and Teachers 311
Jim Ridgway, James Nicholson, and Sean McCusker

31 Developing Teachers' Statistical Thinking 323
Maxine Pfannkuch and Dani Ben-Zvi

32 Engaging Teachers and Students with Real Data: Benefits and Challenges 335
Jennifer Hall

33 Teaching Teachers to Teach Statistical Investigations 347
Katie Makar and Jill Fielding-Wells

34 Characterising and Developing Teachers' Knowledge
for Teaching Statistics with Technology 359
Hollylynne S. Lee and Karen F. Hollebrands

35 Preparing Teachers Through Case Analysis 371
Randall E Groth and Shillong Xu

36 Distance Education of Statistics Teachers 383
Maria Meletiou-Mavrotheris and Ana Serradó

37 The Role of Statistical Offices and Associations in Supporting
the Teaching of Statistics at School Level 395
Delia North and Jackie Scheiber

**Overview: Challenges for Teaching Statistics in School
Mathematics, and Preparing Mathematics Teachers 407**
Carmen Batanero, Gail Burrill, and Chris Reading

index 419