

Handbook of **Technological Pedagogical Content Knowledge (TPACK)** for Educators

Second Edition

Edited by Mary C. Herring, Matthew J. Koehler, and Punya Mishra

Contents

Ack	nowledgments	x
1	Introduction to the Second Edition of the TPACK Handbook Mary C. Herring, Matthew J. Koehler, Punya Mishra, Joshua M. Rosenberg, Jolene Teske	1
SEC	TION I	
	eory	9
2	Theoretical Considerations of Technological Pedagogical Content Knowledge Charoula Angeli, Nicos Valanides, Andri Christodoulou	11
3	Using Theoretical Perspectives in Developing an Understanding of TPACK Joke Voogt, Petra Fisser, Jo Tondeur, Johan van Braak	33
4	Developing TPACK: Envisioning Technological Pedagogical Reasoning Vicky Smart, Glenn Finger, Cheryl Sim	53
	TION II search	63
nes		05
5	Exploring the Use of Qualitative Methods to Examine TPACK Leanna Archambault	65
6	A Review of the Quantitative Measures of Technological Pedagogical Content Knowledge (TPACK) Ching Sing Chai, Joyce Hwee Ling Koh, Chin-Chung Tsai	87
7	Understanding Teachers' TPACK Through Observation Denise A. Schmidt-Crawford, Shu-Ju Diana Tai, Wei Wang, Yi Jin	107

Contents

8	Support for Technology Integration: Implications From and For the TPACK Framework Noortje Janssen, Ard W. Lazonder	119
9	Transforming Teachers' Knowledge for Teaching With Technologies: An Online Learning Trajectory Instructional Approach Margaret L. Niess	131
10	Universal Design for Learning (UDL) Infused Technological Pedagogical Content Knowledge (TPACK) Model Prepares Efficacious 21st-Century Teachers Beatrice Hope Benton-Borghi	143
		1/7
Im	plications for Practice	167
11	Developing and Assessing TPACK Among Pre-Service Teachers: A Synthesis of Research Chrystalla Mouza	169
12	In-Service Teachers' TPACK Development: Trends, Models, and Trajectories Judith B. Harris	191
13	TPACK Development in Higher Education Mary C. Herring, Sohyun Meacham, Daniel Mourlam	207
14	Opportunities and Challenges of TPACK-Based Professional Development on a Global Scale Mark Hofer, John K. Lee, David A. Slykhuis, James Ptaszynski	225
15	Understanding the Role of a School Principal in Setting the Context for Technology Integration: A TPACK Perspective Vinesh Chandra	235
16	Making Meaningful Advances: TPACK for Designers of Learning Tools Karin Forssell	247
17	Designing Professional Development to Support Teachers' TPACK in Elementary School Mathematics Drew Polly, Chandra Hawley Orrill	259
18	TPACK-Based Professional Development Programs in In-Service Science Teacher Education Evrim Baran, Sedef Canbazoglu-Bilici, Erdem Uygun	271

19	Music TPACK in Higher Education: Educating the Educators Jordan Mroziak, Judith Bowman	285
20	The Impact of Digital Storytelling on the Development of TPACK Among Student Teachers in Taiwan <i>Amber Yayin Wang</i>	297
Ch	out the Contributors apter Acknowledgments dex	309 319 321