

Contents

List of figures	xi
List of tables	xiv
Contributors	xvi
Acknowledgements	xxvii

<i>The Routledge International Handbook of Dyscalculia and Mathematical Learning Difficulties: an overview</i>	1
--	---

Steve Chinn

1 How can cognitive developmental neuroscience constrain our understanding of developmental dyscalculia?	18
--	----

Stephanie Bugden and Daniel Ansari

2 Number difficulties in young children: deficits in core number?	44
---	----

Robert A. Reeve and Sarah Gray

3 Dots and digits: how do children process the numerical magnitude? Evidence from brain and behaviour	60
---	----

Vivian Reigosa-Crespo and Danilka Castro

4 When and why numerosity processing is associated with developmental dyscalculia	78
---	----

Xinlin Zhou and Dazhi Cheng

5 Predictive indicators for mathematical learning disabilities/dyscalculia in kindergarten children	90
---	----

Annemie Desoete

Contents

- 6 The link between mathematics and logical reasoning:
implications for research and education 101
Kinga Morsanyi and Denes Szűcs
- 7 How specific is the specific disorder of arithmetic skills? 115
Karin Landerl
- 8 Arithmetic difficulties of children with hearing impairment 125
Gowramma I. P.
- 9 Arithmetic difficulties among socially disadvantaged
children and children with dyscalculia 146
Ramaa S.
- 10 Meeting the needs of the 'bottom eighty per cent':
towards an inclusive mathematics curriculum in Uganda 166
Tandi Clausen-May and Remegious Baale
- 11 Dyscalculia in Arabic speaking children:
assessment and intervention practices 183
*John Everatt, Abdessatar Mahfoudhi, Mowafak Al-Manabri
and Gad Elbeheri*
- 12 Mathematics learning and its difficulties among Chinese
children in Hong Kong 193
*Connie Suk-Han Ho, Terry Tin-Yau Wong and
Winnie Wai Lan Chan*
- 13 The acquisition of mathematics skills of Filipino
children with learning difficulties: issues and challenges 203
Sherlynmay Hamak, Jai Astilla and Hazelle R. Preclaro
- 14 The enigma of dyscalculia 217
Jane Emerson
- 15 Deep diagnosis, focused instruction, and expanded
math horizons 228
Robert B. Ashlock

16	Preschool children's quantitative knowledge and long-term risk for functional innumeracy	235
	<i>David C. Geary</i>	
17	Learning disabilities: mathematics characteristics and instructional exemplars	243
	<i>Diane Pedrotty Bryant, Brian R. Bryant, Mikyung Shin and Kathleen Hughes Pfannenstiel</i>	
18	Targeted interventions for children with difficulties in learning mathematics	256
	<i>Ann Dowker and Peter Morris</i>	
19	Focused MLD intervention based on the classification of MLD subtypes	265
	<i>Giannis N. Karagiannakis and Anny Cooreman</i>	
20	Numbersense: a window into dyscalculia and other mathematics difficulties	277
	<i>Mahesh C. Sharma</i>	
21	The Center for Improving Learning of Fractions: a progress report	292
	<i>Robert Siegler, Lynn Fuchs, Nancy Jordan, Russell Gersten and Rob Ochsendorf</i>	
22	Lights and shadows of mental arithmetic: analysis of cognitive processes in typical and atypical development	304
	<i>Sara Caviola and Daniela Lucangeli</i>	
23	Teacher training: solving the problem	315
	<i>Judy Hornigold</i>	
24	Mathematics anxiety, working memory, and mathematical performance: the triple-task effect and the affective drop in performance	326
	<i>Alex M. Moore, Amy J. McAuley, Gabriel A. Allred and Mark H. Ashcraft</i>	

Contents

25	Mathematical resilience: what is it and why is it important? <i>Clare Lee and Sue Johnston-Wilder</i>	337
26	Linguistic factors in the development of basic calculation <i>Chris Donlan</i>	346
27	Promoting word problem solving performance among students with mathematics difficulties: the role of strategy instruction that primes the problem structure <i>Asha K. Jitendra, Danielle N. Dupuis and Amy E. Lein</i>	357
28	Mathematical storyteller kings and queens: an alternative pedagogical choice to facilitate mathematical thinking and understand children's mathematical capabilities <i>Caroline McGrath</i>	369
29	The effects of computer technology on primary school students' mathematics achievement: a meta-analysis <i>Egbert Harskamp</i>	383
30	Representing, acting, and engaging: UDL and mathematics <i>Elizabeth Murray, Garron Hillaire, Mindy Johnson and Gabrielle Rappolt-Schlichtmann</i>	393
31	Dyscalculia in Higher Education: systems, support and student strategies <i>Clare Trott</i>	406
	<i>Index</i>	420