# Contents

## Part I  Cognition and New Science of Learning

1. New Digital Media and Their Potential Cognitive Impact on Youth Learning
   Margaret Weigel, Celka Straughn, and Howard Gardner
   
2. Group Cognition as a Foundation for the New Science of Learning
   Gerry Stahl
   
3. An Embodied/Grounded Cognition Perspective on Educational Technology
   John B. Black
   
4. Features of Computerized Multimedia Environments that Support Vicarious Learning Processes
   Barry Gholson, Roby Coles, and Scotty D. Craig
   
5. Human Memory and the New Science of Learning
   Paul Eggen and Suzanne Schellenberg
   
6. Metacognitive Control of Learning and Remembering
   Jason R. Finley, Jonathan G. Tullis, and Aaron S. Benjamin
   
7. Ethnic Differences on Students’ Approaches to Learning: Self-Regulatory Cognitive and Motivational Predictors of Academic Achievement for Latino/a and White College Students
   Robert Rueda, Hyo Jin Lim, Harold F. O’Neil, Noelle Griffin, Shel Bockman, and Barbara Sirotnik
   
8. Intuitions, Conceptions and Frameworks: Modelling Student Cognition in Science Learning
   Keith S. Taber
   
9. An Analysis of Design Strategies for Creating Educational Experiences in Virtual Environments
   Theresa Horstman and Stephen Kerr
Contents

Part II Computers and New Science of Learning

10 Redesigning Testing: Operationalizing the New Science of Learning ............................... 207
Zachary Stein, Theo Dawson, and Kurt W. Fischer

11 Self-regulated Learning with MetaTutor: Advancing the Science of Learning with MetaCognitive Tools ............. 225
Roger Azevedo, Amy Johnson, Amber Chauncey, and Candice Burkett

Peter Reimann and Lina Markauskaite

13 Designing Higher Education Courses Using Open Educational Resources ............................. 273
Frank Rennie and Robin Mason

14 The Evolution of an Automated Reading Strategy Tutor: From the Classroom to a Game-Enhanced Automated System ... 283
G. Tanner Jackson, Kyle B. Dempsey, and Danielle S. McNamara

15 Experiences in the Field: The Evolution of a Technology-Oriented Teacher Professional Development Model ........................ 307
M. Brooke Robertshaw, Andrew Walker, Mimi Recker, Heather Leary, and Linda Sellers

16 A Dialogic Approach to Technology-Enhanced Education for the Global Knowledge Society ..................... 325
Rupert Wegerif and Nasser Mansour

17 Conceptual Representation Embodied in Hypermedia: An Approach to Promoting Knowledge Co-Construction ......................... 341
Lei Liu and Cindy E. Hmelo-Silver

18 Virtual Worlds for Young People in a Program Context: Lessons from Four Case Studies ......................... 357
Marina Umaschi Bers, Laura Beals, Clement Chau, Keiko Satoh, and Nauman Khan

Helle Mathiasen and Lynne Schrum

Part III Collaboration and New Science of Learning

20 Fostering Higher Levels of Learning Using Diverse Instructional Strategies with Internet Communication Tools ....... 407
Heather Kanuka
<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>Windows into Teaching and Learning Through Social Annotation Practices</td>
<td>427</td>
</tr>
<tr>
<td></td>
<td>Hope J. Hartman</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Orchestrating Learning in a One-to-One Technology Classroom</td>
<td>451</td>
</tr>
<tr>
<td></td>
<td>Jitti Niramitranon, Mike Sharples, and Chris Greenhalgh</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Designing Online Learning Environments for Professional Development</td>
<td>469</td>
</tr>
<tr>
<td></td>
<td>Kedmon Hungwe</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>Knowledge Building/Knowledge Forum®: The Transformation of Classroom Discourse</td>
<td>485</td>
</tr>
<tr>
<td></td>
<td>Therese Laferriere and Mary Lamon</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carmen Zahn, Karsten Krauskopf, Friedrich W. Hesse, and Roy Pea</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Technology for Classroom Orchestration</td>
<td>525</td>
</tr>
<tr>
<td></td>
<td>Pierre Dillenbourg and Patrick Jermann</td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Knowledge Building in Society 2.0: Challenges and Opportunities</td>
<td>553</td>
</tr>
<tr>
<td></td>
<td>Jingyan Lu, Ming Lai, and Nancy Law</td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Innovations in Culturally Based Science Education Through Partnerships and Community</td>
<td>569</td>
</tr>
<tr>
<td></td>
<td>Megan Bang, Douglas Medin, Karen Washinawatok, and Shannon Chapman</td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>New Science of Learning: Exploring the Future of Education</td>
<td>593</td>
</tr>
<tr>
<td></td>
<td>Myint Swe Khine and Issa M. Saleh</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Subject Index</td>
<td>605</td>
</tr>
</tbody>
</table>
New Science of Learning
Cognition, Computers and Collaboration in Education
Khine, M.S.; Saleh, I.M. (Eds.)
2010, XXXIV, 607 p., Hardcover
ISBN: 978-1-4419-5715-3