

Contents

Preface	Cognitive Tools: Prospects for Exploratory Learning Environments	V
	<i>Piet A.M. Kommers</i>	
Introduction		
1.	What are Cognitive Tools?	1
	<i>David H. Jonassen</i>	
2.	Cognitive Tools: A Suitable Case for Learning	7
	<i>J. Terry Mayes</i>	
Part I	Semantic Networking as Cognitive Tools	19
	<i>David H. Jonassen</i>	
3.	Constructing Knowledge with Learning Tool	23
	<i>Robert B. Kozma</i>	
4.	TextVision and the Visualisation of Knowledge: School-based Evaluation of its Acceptance at two Levels of Schooling	33
	<i>Piet A.M. Kommers, Sjoerd A. de Vries</i>	
5.	SemNet: A Tool for Personal Knowledge Construction	63
	<i>Kathleen M. Fisher</i>	
6.	Cognitive Tools: The Experience of CASP, NoteCards, SemNet	77
	<i>Ray McAleese</i>	
7.	Flexibility of Expressiveness: A Critical Factor in the Design of Concept Mapping Tools for Learning	85
	<i>Elske Heeren, Piet A.M. Kommers</i>	
Part II	Expert Systems as Cognitive Tools	103
	<i>David H. Jonassen</i>	
8.	Building Knowledge Bases: An Environment for Making Cognitive Connections	105
	<i>Stanley H. Trollip, Renate C. Lippert, Anthony M. Starfield, Karl A. Smith</i>	
9.	Levels of Processing in Building Expert Systems	125
	<i>David H. Jonassen, R. Scott Grabinger</i>	
10.	Computers and Exploratory Learning in the Real World	139
	<i>Richard Ennals</i>	
Part III	Hypertext as Cognitive Tools	147
	<i>David H. Jonassen</i>	
11.	Tailoring Hypertext for the Learner	149
	<i>Nick Hammond</i>	

12.	Heuristics for Cognitive Tools.....	161
	<i>Harold Thimbleby</i>	
13.	Gloves for the Mind.....	169
	<i>Stephen W. Draper</i>	
Part IV	Collaborative Communication Tools.....	183
	<i>Piet A.M. Kommers</i>	
14.	Using Timbuktu™ and Guide™ for Computer Supported Group Learning	185
	<i>Paulus H. Vossen, Josephine Hofmann</i>	
15.	Gossip as a Collaborative Communication Tool.....	193
	<i>Alcindo Ferreira</i>	
Part V	Microworlds: Content Dependent Cognitive Tools.....	197
	<i>Piet A.M. Kommers</i>	
16.	Learning Elementary Mathematics: A Discussion of Microworlds	199
	<i>Joost Klep</i>	
17.	How to Put Language in a Child's Mind: The Development of "Scriptor" as a Computer Tool for Writing.....	215
	<i>Joost Lowyck, Lieve Vanmaele</i>	
18.	Structure of Learning Environments and Individual Differences as Predictors of Learning	227
	<i>Marcel V.J. Veenman, Jan J. Elshout, Dick J. Bierman</i>	
19.	Learning Environments for Cognitive Apprenticeship: From Experience to Expertise.....	241
	<i>Jules M. Pieters, Henneke F.M. de Bruijn</i>	
Part VI	Implementing Cognitive Tools.....	249
	<i>David H. Jonassen</i>	
20.	Consequences of Moving from a Traditional Cybernetic Approach to a Open Exploratory Learning Environment	251
	<i>Richard N. Tucker, John Whiting</i>	
	Addresses and Biographies of Lecturers.....	263
	Index.....	269