
Contents

	Introduction	ix
	<i>Norman Frederiksen</i>	
1	Intelligent Tutors as Intelligent Testers	1
	<i>John R. Frederiksen and Barbara Y. White</i>	
2	Analysis of Student Performance with the LISP Tutor	27
	<i>John R. Anderson</i>	
3	The Role of Cognitive Simulation Models in the Development of Advanced Training and Testing Systems	51
	<i>David E. Kieras</i>	
4	Reformulating Testing to Measure Learning and Thinking	
	<i>Comments on Chapters 1, 2, and 3</i>	75
	<i>Allan Collins</i>	
5	Evidence from Internal Medicine Teaching Rounds of the Multiple Roles of Diagnosis in the Transmission and Testing of Medical Expertise	89
	<i>Cynthia S. Gadd and Harry E. Pople, Jr.</i>	

6	Diagnosing Individual Differences in Strategy Choice Procedures	113
	<i>Robert S. Siegler and Jamie Campbell</i>	
7	Guided Learning and Transfer: Implications for Approaches to Assessment	141
	<i>Joseph C. Campione and Ann L. Brown</i>	
8	The Assisted Learning of Strategic Skills	
	<i>Comments on Chapters 5, 6, and 7</i>	173
	<i>Sherrie P. Gott</i>	
9	Parsimonious Covering Theory in Cognitive Diagnosis and Adaptive Instruction	191
	<i>James A. Reggia and C. Lynne D'Autrechy</i>	
10	Rules and Principles in Cognitive Diagnosis	217
	<i>Pat Langley, James Wogulis, and Stellan Ohlsson</i>	
11	Trace Analysis and Spatial Reasoning: An Example of Intensive Cognitive Diagnosis and Its Implications for Testing	251
	<i>Stellan Ohlsson</i>	
12	Assessment Procedures for Predicting and Optimizing Skill Acquisition After Extensive Practice	297
	<i>J. Wesley Regian and Walter Schneider</i>	
13	Applying Cognitive Task Analysis and Research Methods to Assessment	325
	<i>Alan Lesgold, Susanne Lajoie, Debra Logan, and Gary Eggan</i>	
14	Monitoring Cognitive Processing in Semantically Complex Domains	351
	<i>Carl H. Frederiksen and Alain Breuleux</i>	
15	Diagnostic Approaches to Learning: Measuring What, How, and How Much	
	<i>Comments on Chapters 12, 13, and 14</i>	393
	<i>Judith M. Orasanu</i>	

16	Diagnostic Testing by Measuring Learning Processes: Psychometric Considerations for Dynamic Testing <i>Susan Embretson</i>	407
17	Generating Good Items for Diagnostic Tests <i>Sandra P. Marshall</i>	433
18	Toward an Integration of Item-Response Theory and Cognitive Error Diagnosis <i>Kikumi K. Tatsuoka</i>	453
19	Diagnostic Testing <i>Comments on Chapters 16, 17, and 18</i> <i>Robert L. Linn</i>	489
	Author Index	499
	Subject Index	507