CONTENTS

Pr	eface	บเ
PAR	RT I—Computers and Reading: Instructional Issues	
1.	Using Computers to Integrate Reading and Writing Practical Problems for Language Arts Integration 2 The Computer as a Solution 3 Reading as Micro Composition 12 Sources of Information 15	1
2.	Secondary and College Instruction in Reading Direct Instruction 18 Intellectual Tools 28 Sources of Information 32 Commercial Software 33	17
3.	Integrated Reading Curricula What Is an Integrated Learning System? 35 Minicomputer-Based Systems 36 Microcomputer-Based Networks 42 Advantages and Disadvantages 43 Mixed Media Developmental Reading Curricula 46 Sources of Information 47	35
4.	Diagnosis and Prescription Limitations of Computer Diagnosis and Prescription 49 Computer-Based Testing 50 Computer-Assisted Remediation 54 Diagnosis and Prescription: Traditional Programming Techniques	<i>48</i> 55

	Expert Systems for Reading Diagnosis 58 Is the Medical Model Appropriate for Reading Diagnosis? 59 How Can Computer-Based Diagnosis Aid in Clinician Training? Challenges for the Reading Profession 66 Sources of Information 68 Software 68	63
PAF	RT II—Research on Computers in Reading	
5.	An Overview of Research on Computers in Reading The Important Research Questions 69 Research Reviews 74 History of Computer-Based Reading Instruction Research Sources of Information 82	69
6.	Special Topics of Contemporary Research Interest for Computers in Reading School Use of Computers 83 Socioeconomic Status and Use of Computers 85 Computers and the Affect 86 Courseware-Related Issues 88 Social Interaction and Oral Language Within the Classroom 90 Role of the Teacher 94 The Future of Computer-Based Instructional Research 99 Sources of Information 99	83
7.	Computers and Learning from Text Contemporary Technological Limitations 101 Instructional Text Engineering 104 Research on Computer-Mediated Textual Manipulations 109 Sources of Information 115 Software References 115	100
PAI	RT III—The New Technologies and Reading	
8.	Voice Synthesis Types of Synthesizers 117 Development and Research on Rule-Based Systems 119 Sources of Information 122 Commercial Software/Hardware 122	116
9.	Interactive Video Interactive Videotape 125 Interactive Videodiscs 128 Future Developments 132 Sources of Information 132	124
10.	Special Hardware-Related Topics Computer Hardware in the Schools Today 134 CD-ROM 135 Telecommunications 138 Local Area Networks 141 Sources of Information 143 Telecommunications Resources 144	134

PART IV—Artificial	l Intelligence	and	Reading
--------------------	----------------	-----	---------

11. Natural Language for Reading Instructional Yesterday's Applications of Computers 146 Today's Applications of Computers 147 Approaches to Natural Language Processing Interaction by Natural Language Today 153 Interaction by Natural Language Tomorrow What Can I Do Today? 158 Sources of Information 159 Commercial Software 159	l Software 145 148 157
 12. History of Natural Language Research Machine Translation 161 The Semantic Information-Processing Era (1962 Beginnings of Cognitive Science 165 Lessons of the 1970s 165 Challenges to Cognitive Science 168 Sources of Information 174 Commercial Software 174 	161 (–1973) 162
13. Intelligent Computer-Assisted Instruction Components of an ICAI System 177 Examples of ICAI Systems 180 Advantages and Disadvantages of ICAI 183 Sources of Information 184	175
14. Expert Systems What Is an Expert System? 191 Limitations and Advantages of Expert Systems Transfer of Expertise 197 Organization of Knowledge 200 Tools for Building Expert Systems 204 Sources of Information 206	185 193
15. Construction of an Expert System Basic Components 208 Conclusions 217 Sources of Information 217 Commercial Software 218	207
References	
Index	24)