Figures and Tables xi

Foreword to the Paperback Edition xiii

The Authors xx

Prologue: The Search for Innovative Learning xxv

Introduction: Learning to Innovate, Innovating Learning xxix

The Four Question Exercise xxx

About This Book xxxiv

A Map of the Book xxxv

Part One: What Is 21st Century Learning?

1 Learning Past and Future 3

Learning a Living: The Future of Work and Careers 7

Learning Through Time 11

2 The Perfect Learning Storm: Four Converging Forces 21

Knowledge Work 24

Thinking Tools 25

Digital Lifestyles 27

Learning Research 30

The Forces of Resistance 35

The Turning of Learning: Toward a New Balance 36

The Top 21st Century Challenge 40
Part Two: What Are 21st Century Skills?

3 Learning and Innovation Skills: Learning to Create Together
   The Knowledge-and-Skills Rainbow 47
   Learning to Learn and Innovate 49
   Critical Thinking and Problem Solving 50
   Communication and Collaboration 54
   Creativity and Innovation 56

4 Digital Literacy Skills: Info-Savvy, Media-Fluent, Tech-Tuned 61
   Information Literacy 65
   Media Literacy 67
   ICT Literacy 68

5 Career and Life Skills: Work-Ready, Prepared for Life 73
   Flexibility and Adaptability 75
   Initiative and Self-Direction 77
   Social and Cross-Cultural Interaction 80
   Productivity and Accountability 82
   Leadership and Responsibility 84

Part Three: 21st Century Learning in Practice

6 21st Century Learning and Teaching 89
   Learning P’s and Q’s: Problems and Questions 90
   Roads to Answers and Solutions: Science and Engineering 91

7 Powerful Learning: Proven Practices, Researched Results 95
   The 21st Century Project Learning Bicycle 96
Figures

1.1. Value Chains Then and Now 4
1.2. Signs for Our Times 6
1.3. New Skills for 21st Century Work 8
1.4. The Future of 21st Century Work 10
2.1. 21st Century Learning Convergence 23
2.2. 21st Century Learning Balance 38
3.1. SARS Web Site Screenshot 47
3.2. The 21st Century Knowledge-and-Skills Rainbow 48
3.3. Creative Whack Pack Creativity Cards 60
4.1. The 21st Century Knowledge-and-Skills Rainbow 65
5.1. The 21st Century Knowledge-and-Skills Rainbow 75
6.1. Science and Technology, Questions and Problems 92
7.1. Student and Teacher Project Wheels 99
7.2. The Project Learning Bicycle 100
7.3. The 21st Century Project Learning Bicycle Model 102
8.1. Systems Diagram of School Interactions 118
8.2. 21st Century Learning Framework 119
8.3. West Virginia Grade 11 Social Studies Test Question 133
8.4. New Learning Environments 140
8.5. Knowledge Age Value Chain 146
8.6. Possible Future 21st Century Learning Framework 149
9.1. The “Big E” Global Problems 157
B.1. 21st Century Learning Framework 173
C.1. 21st Century Learning Outcomes 175
Tables

1.1. Jobs and 21st Century Work 9
1.2. Society’s Educational Goals Throughout the Ages 14
5.1. Performance Evaluation Criteria 74
6.1. Scientific Versus Engineering Methods 93
8.1. Grade 5 Science Standard from West Virginia 127
C.1. P21 and 7C Skills 176