

- Acknowledgements p. ix
- List of figures p. xi
- List of tables p. xiii
- Part 1 An Innovative Model p. 1
- 1 Introduction p. 3
- 2 Moving beyond the classroom p. 9
- 2.1 Taking a step back p. 10
- 2.1.1 Audience size p. 10
- 2.1.2 Audience location p. 10
- 2.1.3 Required proficiency p. 11
- 2.1.4 Technical difficulty p. 11
- 2.1.5 Ease of change p. 11
- 2.1.6 Cost p. 11
- 2.2 Approaches to provide for learning in the workplace p. 13
- 2.2.1 Classroom training p. 13
- 2.2.2 Teleconference p. 15
- 2.2.3 Videotape p. 15
- 2.2.4 CD-ROM p. 15
- 2.2.5 Intranet p. 15
- 2.3 Examples of employee development needs and how they might be addressed p. 17
- 2.3.1 New product familiarization p. 17
- 2.3.2 A new work system p. 18
- 2.3.3 Technical writing p. 18
- 2.3.4 Expertise on a specific subject p. 19
- 2.4 Developing technical expertise p. 19
- 2.5 The learning progression p. 21
- 2.6 Proficiency scales p. 24
- 2.7 Summary p. 25
- 3 Management roles p. 27
- 3.1 Defining the requirements p. 28
- 3.1.1 Senior engineering management p. 28
- 3.1.2 Individual engineers p. 28
- 3.1.3 Direct supervisors p. 28
- 3.2 Establishing management support p. 29
- 3.3 Identifying types of positions p. 32
- 3.4 Identifying required subjects p. 35
- 3.5 Identifying required proficiencies p. 38
- 3.6 Some specific examples p. 39
- 3.7 Summary p. 45
- 4 Mechanisms for advanced learning p. 47
- 4.1 Methods of attaining the higher proficiencies p. 48
- 4.2 Fundamentals of experiential learning p. 49
- 4.3 Practical approaches to experiential learning p. 50
- 4.3.1 Demonstration with a return demonstration p. 50

- 4.3.2 In-class case study p. 50
- 4.3.3 Critical incidents p. 51
- 4.3.4 Poster presentations p. 51
- 4.3.5 Case study research p. 52
- 4.3.6 Trips and tours p. 52
- 4.3.7 Coaching p. 52
- 4.3.8 Mentoring p. 53
- 4.3.9 On-the-job training p. 53
- 4.3.10 Clinics p. 53
- 4.3.11 People networking p. 54
- 4.4 Putting it all together p. 54
- 4.5 Summary p. 57
- 5 Communicating the information p. 61
- 5.1 Needs of the communication system p. 61
- 5.1.1 Common subject definitions p. 63
- 5.1.2 Linkage between matrices and subject write-ups p. 64
- 5.1.3 Write control p. 64
- 5.1.4 Revision and document control p. 65
- 5.1.5 Ease of use p. 65
- 5.1.6 Accessibility p. 66
- 5.2 Hypertext database software p. 66
- 5.3 Review of where we've been p. 69
- 5.4 Summary p. 70
- 6 Employees own their own development p. 71
- 6.1 Learning matrix selection and modification p. 72
- 6.1.1 Case 1 p. 73
- 6.1.2 Case 2 p. 73
- 6.2 Self-appraisal p. 74
- 6.2.1 Ensuring that the process is non-threatening p. 74
- 6.2.2 Emphasizing personal ownership p. 74
- 6.2.3 Minimizing management time requirements p. 75
- 6.3 Prioritization of development needs p. 79
- 6.4 Individual development planning p. 80
- 6.5 Summary p. 82
- 7 The supervisor's role p. 85
- 7.1 Supervisor review of self-assessment p. 85
- 7.1.1 Case 1 p. 86
- 7.1.2 Case 2 p. 86
- 7.1.3 Case 3 p. 87
- 7.2 Supervisor review of priorities p. 88
- 7.3 Supervisor role in development plan p. 89
- 7.4 Corporate-wide support p. 91
- 7.5 Summary p. 93
- Part 2 A Few Further Applications p. 95

- 8 Rotational programs p. 97
- 8.1 Introduction p. 97
- 8.2 Description of the concept p. 98
- 8.3 Developing the rotational program p. 99
- 8.4 Cummins case study p. 102
- 8.5 Summary p. 105
- 9 Organizational assessment p. 107
- 9.1 Introduction p. 107
- 9.2 The needs of the organization p. 107
- 9.2.1 Department proficiency assessment p. 107
- 9.2.2 Succession planning p. 108
- 9.2.3 New project staffing p. 109
- 9.2.4 Finding the talent and diversity p. 109
- 9.3 Creating the company-wide database p. 111
- 9.4 Summary p. 115
- 10 Evaluating program effectiveness p. 117
- 10.1 Introduction p. 117
- 10.2 Review of Kirkpatrick's four-level model p. 117
- 10.3 Applying the available tools p. 118
- 10.4 Summarizing the resulting data p. 119
- 10.5 Summary p. 120
- 11 There is no such thing as a free lunch p. 121
- References p. 123
- Index p. 125