

Contents

Series Preface ix ■ Preface xi ■ Acknowledgments xv

| | | |
|------------------|--|-----------|
| PART I | WELCOME TO MOTOR BEHAVIOR | 1 |
| CHAPTER 1 | What Is Motor Behavior? | 3 |
| | Research | 5 |
| | Practical Application | 6 |
| | Three Subdisciplines | 7 |
| | A Brief History of Motor Behavior | 12 |
| | Related Fields of Study | 15 |
| | The Short of It | 17 |
| CHAPTER 2 | What Can I Do With Motor Behavior? | 19 |
| | Academic Path | 22 |
| | Professional Paths | 24 |
| | Side Paths | 28 |
| | The Short of It | 32 |
| PART II | BUILDING BLOCKS OF MOTOR BEHAVIOR | 33 |
| | Taking a Systematic Approach | 34 |
| | Accounting for the Person, the Task, and the Performance Setting | 35 |
| | Information Processing | 37 |
| CHAPTER 3 | Observing Behavior | 39 |
| | Closed and Open Skills | 41 |
| | Discrete, Serial, and Continuous Skills | 45 |
| | Observation: A Critical Key to Understanding Motor Behavior | 47 |
| | The Short of It | 51 |
| CHAPTER 4 | Understanding How We Control Movements | 53 |
| | Sources of Sensory Information | 54 |
| | Continuous Control | 58 |
| | No-Feedback Control | 60 |
| | Combining Continuous and No-Feedback Control | 62 |
| | The Short of It | 62 |
| CHAPTER 5 | Understanding How We Learn Motor Skills | 63 |
| | Theories of How We Learn | 64 |
| | Ways We Learn Motor Skills | 66 |
| | Transfer | 72 |
| | Feedback | 73 |
| | The Short of It | 78 |

| | |
|--|------------|
| CHAPTER 6 Capabilities and Limitations | 79 |
| Information Processing | 81 |
| Reacting Faster: Ways to Reduce the Time Spent on Information Processing | 86 |
| How We Pay Attention | 90 |
| What We Pay Attention to Makes a Difference | 91 |
| Arousal and Performance | 92 |
| Speed-Accuracy Trade-Offs | 94 |
| Abilities and Skills | 95 |
| The Short of It | 97 |
| CHAPTER 7 Setting Practice Procedures | 99 |
| Constant and Varied Practice | 101 |
| Blocked and Random Practice | 104 |
| Practice Distribution | 106 |
| Deciding How to Design Practice | 109 |
| The Short of It | 111 |
| CHAPTER 8 Putting It All Together: The Motor Skill Learning Cycle | 113 |
| Phase 1: Consider the Person, Task, and Performance Setting | 116 |
| Phase 2: Plan for Practice | 121 |
| Phase 3: Implement Practice | 124 |
| Phase 4: Review the Overall Instructional Process | 127 |
| The Short of It | 128 |
| | |
| Epilogue: The Future of Motor Behavior | 129 |
| Appendix A: Learn More About Motor Behavior | 133 |
| Appendix B: Implementing Motor Behavior in the Real World | 135 |
| References | 143 |
| Bibliography | 149 |
| Index | 161 |
| About the Author | 167 |