

CONTENTS

Figures and Tables ix
Foreword xi
Preface xiii
About this book xv
Acknowledgements xviii

PART I

Building the foundation: Evidence-informed learning experiences 1

Introduction 1

1 Designing learning experiences in an evidence-informed way 3

Steps to start designing learning experiences in an evidence-informed way 7

What is the learning sciences and why does it matter? 11

Chapter 1 key points 27

References 28

2 What are learning experiences and what does it mean to design them well? 31

From research to a professional approach to learning experience design 32

Common problems in designing learning experiences 35

Getting started with holistic learning experience design 36

What is a three-star learning experience? 39

Chapter 2 key points 42

References 43

PART II**Eyes wide open: A plea for improvement 45**

Introduction 45

3 Eyes closed: The state of the learning profession 47

Why our professional foundation is weak 48

The backbone of holistic learning experience design 50

What training research tells us 51

How we ignore the evidence 55

Chapter 3 key points 62

References 62

4 How to start looking for the evidence 65

Eyes wide open: Judging research 65

Eyes wide open: Judging seductive titles and self-promotion 73

Chapter 4 key points 77

References 78

PART III**Facing fallacies and myths 79**

Introduction 79

5 On the lookout for fallacies 83

Logical fallacies 86

Chapter 5 key points 95

References 95

6 Thriving myths in learning 97

Why myths are like zombies 97

Myth 1: neuroquatsch 103

Myth 2: what learners say they prefer is good for them 116

Myth 3: Google can replace human knowledge 122

Myth 4: 21st-century skills are more important than domain-specific knowledge 136

Chapter 6 key points 157

References 158

PART IV

Find focus: Tools, techniques and ingredients 163

Introduction 163

7 Complex skills and how to design for them 000

Chapter 7 key points 179

References 179

8 Nuanced design: Tools 181

Tool 1: Readily available computer programs 181

Tool 2: Note-taking using good old handwriting 182

Tool 3: Multimedia 185

Chapter 8 key points 189

References 189

9 Nuanced design: Techniques 191

Technique 1: Direct instruction 191

Technique 2: Feedback 196

Different types of feedback to support learning 198

Feedback needs to be directed towards Aditi's goal 203

Feedback needs to relate to critical dimensions of Aditi's goal 203

Focus on the three feedback questions in an integrated manner 204

Adapt feedback to the four different levels 204

Chapter 9 key points 206

References 207

10 Nuanced design: Ingredients 229

Ingredient 1: Worked examples 212

Diving deeper into CLT: Why worked examples are effective for problem-solving skills 217

Ingredient 2: Spaced learning 220

Ingredient 3: Retrieval practice 224

Ingredient 4: Interleaving 228

Ingredient 5: Double-barrelled learning 231

Chapter 10 key points 236

References 237

PART V

The learner in the driver's seat: Self-directed and self-regulated learning 239

Introduction 239

11 The ins and outs of self-directed and self-regulated learning 241

What are self-directed learning (SDL) and self-regulated learning (SRL)? 243

Challenges in SDL and SRL 249

Chapter 11 key points 255

References 256

12 How to improve self-directed and self-regulated learning 259

What learning professionals can do to support SDL and SRL 265

How to effectively build and leverage a personal learning network (PLN) 274

What organizations can do to support learning 279

Chapter 12 key points 281

References 282

Conclusion 285

What to stop doing 286

What to start doing 288

References 290

Glossary 291

Index 299