

CONTENTS

<i>Figures and tables</i>	ix
<i>Foreword</i>	xi
<i>Preface</i>	xiii
<i>About this book</i>	xv
<i>Acknowledgements</i>	xix

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

PART IV

Find focus: Tools, techniques and ingredients 163

Introduction 163

7 Complex skills and how to design for them 165

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

Chapter 9 key points 206

References 207

10 Nuanced design: Ingredients 209

Ingredient 1: Worked examples 212

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