Index

abduction 22
abstract conceptualization 170, 261, 262
academagogy 231
academic discourses 13, 18, 20
academic learning culture 309, 310
academic logic 284–5
academic research 323, 327
accelerators 1, 246, 260
accidental entrepreneurs 73, 74
accommodations, curriculum adaptation 106
accomplished teachers 132–3
accountability 96
action, balanced with reflection 187
action learning 70, 71, 73, 97
action-based learning 312
action-oriented learners 72
active engagement 21, 39–40, 52, 211, 261, 328
active experimentation 38, 41, 79, 170, 261, 266
active learning 47, 67, 217, 218, 310
activity-based pedagogical skills 111, 112
actual entrepreneurs 147
actual experience (doing) 38, 39, 41, 42
adaptability 19, 30
add-ons, EE practices as 137, 141
administrative support 115, 125
affective domain 37–8, 41, 43
affective metaphors 70
age demographic, UK entrepreneurship 190
Ananou, C. 247
Anderson, A.R. 187
angel investment 258, 262; see also Rising Tide Angel Training Program
angel and venture capital (VC) networks 258
‘anthropologist’ role 55
Arnstein, S.R. 72
Arshed, N. 187
Art and Design, Subject Benchmark States (QAA) 21
The Art of Innovation (Kelley and Littman) 54, 55
artificial intelligence (AI) 1, 22
assertiveness 99
assessment in business education 28
curriculum adaptation study 108, 118–20, 123, 124, 126, 127
defined 202
in design education 29
development of the reflective student 230
entrepreneurial environment 196
of entrepreneurship education at student level 202–3

see also constructive alignment; resource alignment
‘All the world’s a stage: transforming entrepreneurship education through design thinking’ 24
All-Party Parliamentary Group for Micro Business 18
alliances 326
Amabile, T. 49
ambiguity 29, 30, 36, 99, 224
analysis 17
Ananou, C. 247
Anderson, A.R. 187
angel investment 258, 262; see also Rising Tide Angel Training Program
angel and venture capital (VC) networks 258
‘anthropologist’ role 55
Arnstein, S.R. 72
Arshed, N. 187
Art and Design, Subject Benchmark States (QAA) 21
The Art of Innovation (Kelley and Littman) 54, 55
artificial intelligence (AI) 1, 22
assertiveness 99
assessment in business education 28
curriculum adaptation study 108, 118–20, 123, 124, 126, 127
defined 202
in design education 29
development of the reflective student 230
entrepreneurial environment 196
of entrepreneurship education at student level 202–3

333
The role and impact of entrepreneurship education

models, paradigms and directions for 207–12
modification of Race’s model 39, 40, 41
of the new pedagogical model 59–62
of participation in case study discussions 52–3
of transversal competences 212–16, 217
assigned readings 39, 49
Association of Graduates (HEC Montréal) 242
Association to Advance Collegiate Schools of Business (AACSB) 261, 329
Athyade, R. 186
attitudes
self-defensive 213
social learning theory 166
teachers’ influence on 167
see also entrepreneurial attitudes;
positive attitudes; teachers, attitudes
attribution theory 213
audio visual (AV) support 115, 116, 125
Australian National Industry Education Forum 215
authentic assessment 211
authentic context-based learning 227
autonomous learning 76–7, 82, 84, 152
awareness, of entrepreneurial self 146, 156
axiological issues/consideration 152, 157
Babson College 40
Bachelor’s programmes 242–3, 244, 329
Bacigalupo, M. 206
balance of power 89
Balassarri, S. 186
Ball, S. 66
Bandura, A. 165
Baraldi, E. 282
Barbero, J.L. 281
Barès, F. 248
basic content of EE 114, 125, 126
basic education, EE in, see latent nascent entrepreneurship (study)
Baxter-Magolda, M. 230
Beard, C. 69
behaviour
entrepreneurial 37, 138, 152, 153, 194
importance of teachers’ 131
programmes conducive to immoral 322
social learning theory 166, 167
behavioural changes 72, 84, 225, 226
behaviourism 207
Bell, M.R. 68
Bergek, A. 279
best practice(s) 15, 29, 187–8, 268, 330
Biggs, J. 83, 226, 229
Birdthistle, N. 168
blended learning 35, 39, 42, 43, 44, 45, 46, 54, 59, 60–62, 63, 64
Blenker, P. 151
blogs/blogging 304, 305–6
Bloom, B.S. 37–8, 41, 42, 43, 204, 207
Bok, D. 302
Boud, D. 76
Bower, J.L. 1
Boyes, T. 186
brain functionality 19, 23
brain skills 23
brainstorming 54, 88, 122
bricolage/resourcefulness/effectuation 194, 195, 196, 197
Brixy, U. 146, 147
Brockbank, A. 90
Bronfenbrenner, U. 77
Brown, T. 23
Brundtland Commission (1987) 324
Bryce, J. 214
business acumen 18
business community, links with the local 118
business education 13, 23, 24, 25, 26, 28, 168, 218, 261, 329
Business Families Center (Montréal) 247–8
business growth 194, 195
business knowledge 241
business language 121
business logic 285
business management 114
business and management skills 205
business model canvas 92, 93, 95, 97, 98
Index

business plan competitions 127, 187
business plans 43, 112, 113, 118
business research methods 196
business schools 23, 24, 26, 185–6; see also business education; HEC Montréal
business skills 121, 122
business start-up centers 115, 116, 125, 127
business start-ups
entrepreneurship education and 106, 122, 157, 194–5, 196, 197, 241
gender and financial capital 256, 257
RCA as leader in 15
UK encouragement of economically sustainable 186
business sustainability 325
Camarero, C. 283, 285
Camillus, J. 27–8
Campus Abroad programs (HEC Montréal) 248
Campus Fryslân, see sustainable entrepreneurship program
career(s)
activities 193–4, 195, 196
choice 167, 170
non-linearity of 260
opportunities 327
outcomes 193, 194, 197
case studies 122, 261
case study discussions 45, 49, 50–53
causation 23
Centre d’Entrepreneurship (Montréal) 244
Centre for Research in Evaluation, Standards and Student Testing (CRESST) 214, 215
Centre for Venture Research (University of New Hampshire) 258
Centro Internacional Santander Emprendimiento (CISE) 172
Certificate programs (HEC Montréal) 243, 244
challenge (word) exercise 53
Chan, K.F. 280
change management 326
charity work 193
Cheetham, G. 205
Chivers, G. 205
choice (student) 233–4, 235
Christensen, C.M. 1
circular society 321–2, 328, 330
classical theory/measurement theory 207–8, 210
classroom climate 117, 118
classroom environments 97, 107–8, 312, 313
classroom seating 116–17
Co, M. 106
co-development 226
coaches/coaching 39, 41, 71, 74, 196, 247, 284, 291
cognitive competences 205
cognitive dissonance 72
cognitive domain 37, 38, 41, 42
cognitive science 19
cognitive skills 302
cognitive theory 208, 210
Cohendet, P. 243
cohort leaders 73, 74
collaboration 206, 216, 248, 304, 311, 312, 320, 326
collaborative learning 122, 126
collaborative workshops 158–9
College of Management Academic Studies (COLLMAN) 248, 301, 303, 312
Collins, L. 122
Combs, J.G. 124
commitment
goal achievement 213
see also teachers, commitment to EE
commitment competencies 205
communication with stakeholders 118
community biome 78
community-based dialogue 52
A Compendium of Pedagogies for Teaching Entrepreneurship (Gibb and Price) 37, 38, 39
competence-based education 204, 217, 218
competences
defining key 203–4
EQF definition 218
teachers’ low 146, 158
see also entrepreneurial competences
competency profile (threefold) 323

Alain Fayolle, Dafna Kariv and Harry Matlay - 9781786438232
Downloaded from Elgar Online at 08/30/2019 11:28:56AM
via free access
The role and impact of entrepreneurship education

competitive advantage/competitiveness 24, 28, 88, 93
complex model of alignment 83, 84
computer-based learning 122
concept selection 54
conceptual competencies 205, 206
concrete experience 170, 261, 262, 270
Consortium for Entrepreneurship Education 120
constructive alignment 29, 83, 226, 227, 228
constructive discussion-based participation 52
constructivism 208–9, 210
constructivist administration 117
constructivist mindset 117
constructivist pedagogical approach 111
consultancy assignments 323, 330
content curriculum adaptation study 107, 112–14, 121–2, 124, 125, 126
discernment between enterprise and entrepreneurship 198
contextual competencies 206
contextual and context-based learning 225–6, 227
continuing education for entrepreneurs 106
continuity in educational experience 261
continuous assessment 108, 123
continuous innovation 327
continuous learning 90, 218
control theory 212–13
Cooper, C.E. 282
cooperation, in learning 309
Cope, J. 67
cost-effectiveness, in program evaluation 124
Council for National Academic Awards (CNAA) 27
Coventry University (CU) 188, 190, 191, 192
Cox, G. 28
creation 89–90, 95, 99, 110, 152
creative industries’ business approaches 28
creative mindsets 1, 22
creative problem solving 18, 205
creative teams 116, 117, 125
creative thinking 19, 29, 36, 43, 123
creativity 14, 18–19, 20, 302
assessment of 123, 126
brain functionality 23
as bridging both design education and EE 30
content adaptation to enhance 112, 113
as an entrepreneurial competence 206
focus on enhancing 187
learning climate adaptation for 117, 118
in play 93
reliance of innovation on 22–3
Creativity, Innovation and Entrepreneurship (Babson) 40, 41, 42, 43–4, 54, 55
Creativity and Invention (Rensselaer) 40, 41, 42
Creativity Module (E&I) 38, 42, 44, 45, 47, 48, 49, 50, 53, 54
critical incidents 89
critical reflection 327
critical thinking 16, 113, 302, 309, 311, 312, 313
Cruess, S.R. 169
culture and adoption of new approaches 132, 139, 142
clash in attitudes to research 22
conflict between virtual and academic learning 309
learning design 84
teaching learning strategies development 107
curiosity 20, 230
curriculum provision, UK business schools 185–6
relevance, and teachers’ realization of 134
Tyler’s theory 204
curriculum adaptation 106
among vocational education teachers (study) 106–27
conclusion 124–7
discussion 120–24
research method 108–9
Index

results 109–20
theoretical framework 106–8
Curtis, D. 214

De Bono, E. 44, 48, 53
deep experience 69, 70, 78
delivery of education/learning 4, 19,
89–90, 97, 99, 100, 122
design 13
as an entrepreneurial imperative 20–22
of learning 77, 82–4
linking of art and science thinking
processes 22
RCA definition 14
Design Commission 13
design education 13, 19, 20, 21, 22
aspects linking EE and 30
concept of wicked problems 27, 28
learning outcomes 30
parallels in enterprise education and
29
design researchers 22
design teachers 22
design thinking 14, 90
calls for 23–5
concept of wicked problems 27
‘designerly led thinking’ about 25–6
entrepreneurial skillset 36
in team-based projects 54
designer, changing role of 25
designerly thinking 14
about design thinking 25–6
as method 15–17
Dewey, J. 67, 225, 232
Dewey, T. 256, 260, 261
didactic techniques/level 88, 91, 92,
150, 151, 154, 160
‘Dilemmas in a General Theory of
Planning’ 27
Dilts, D.M. 285
discussion forums 38, 39, 44, 45–6, 49,
51, 53–4, 59, 62, 63
discussions 49–50; see also case study
discussions; group discussion
disruptive innovation 1, 302
industry’s edge over academia 303
need for, within the academic
curriculum 303
student teaching methods 303–12

institutional considerations 313–14
distance learning 44, 242, 304–11, 314
documentaries 122
doing
educators’ inability to connect the
‘knowing’ to 88
see also actual experience; learning
by doing
Douglas, E.J. 122
Dweck, C. 213
eco-efficiencies 325
École des Hautes Études Commerciales,
see HEC Montréal
‘ecology of learning/development
spaces’ 77
economic growth 255, 321, 324
economic perspective 138, 142, 186
Edelman, L.F. 134, 140
education, Ruskin’s idea of 231, 234
educational reforms, teacher
commitment 132, 142
EDUlib 247
Edwards, C. 29
effectuation 23, 29, 194, 195, 196, 197,
249
emotion, adoption of new approaches
132, 138, 142
emotional commitment (teachers)
131
empathy 89, 94–5, 99
empirical methodologies, assessing
transversal competences 214–16
employability 2, 138, 143, 185, 186,
187, 189, 195, 197, 249, 301, 303
employers
graduate requirements 186, 241
skillsets valued by 302
employment 137, 193, 195, 241, 301–3,
319; see also self-employment;
unemployment
empowerment 268
enabling systems 1
English, J. 229
Enterprise Development module 91,
92, 99
enterprise education 15, 17, 29, 137
‘Enterprise and Entrepreneurship
Education: Guidance for UK

Alain Fayolle, Dafna Kariv and Harry Matlay - 9781786438232
Downloaded from Elgar Online at 08/30/2019 11:28:56AM
via free access
The role and impact of entrepreneurship education

Education Providers' (QAA) 17, 19, 20
Enterprise Formation module 91, 92, 99
teleport-oriented pedagogical skills
111, 112
enterprising angel 18
entrepreneurial attitudes 107, 109, 111,
122, 124, 127, 156
entrepreneurial awareness 106, 109,
110, 121, 126
entrepreneurial challenges 224
entrepreneurial characteristics 119,
126
entrepreneurial competences
concept of 203
EE and growth in 195, 197
key 186
success of EE programs 240
see also European Entrepreneurship
Competence Framework
(EntreComp); transversal
competences
entrepreneurial comprehensive school,
model of 150, 160
entrepreneurial dynamism, education
for 106
entrepreneurial ecosystem
curriculum adaptation study 109,
110, 111, 112, 114, 121
EE and acquaintance with dynamics
of 2
HEC Montréal 238–49
Rising Tide Program 255–70
Entrepreneurial Hub (Montréal) 245–6
entrepreneurial identity 96, 98, 99, 100
entrepreneurial intentions 1, 164–5
effects of teachers on 170, 176–7
entrepreneurial education and 107,
131, 157, 241, 249, 259
entrepreneurial skills perceptions
and 169
learners' perceived self-identity 82
entrepreneurial journeys 1, 2, 3, 28, 72,
96, 230, 231, 234, 246, 261, 317
Entrepreneurial Leaders Programme
(ELP) 84
entrepreneurial mindset
assessment 118–21, 123
brain skills 23
in curriculum development and
implementation 302
development 18–20, 35, 36, 37, 98,
105, 113, 130–31, 164, 300
effective EE and need for 186
entrepreneurial outcomes, as focus of
research 259
Entrepreneurial Québec Index 246
entrepreneurial self, awareness, see
latent nascent entrepreneurship
(study)
entrepreneurial skills/skillsets 205
art and design and demonstration
of 22
as an EE objective 109, 110
employer requirements 186, 241
pedagogical system for 35
research 238
Rising Tide Angel Training Program
264–5, 269
secondary and post-secondary
education 259–60
sustainable entrepreneurship
programme 323, 325
see also competences; skills
development
entrepreneurial spirit 26, 243, 314, 316,
319
entrepreneurial support activities 193,
194, 195–7, 196
Entrepreneurial Track Rémi-Marcoux
(ETRM) 245–6
entrepreneurship
discourse 23, 24
discrepancy between
entrepreneurship education
and 1
further education 121
mainstream 322
trends 1
entrepreneurship education (EE) 1, 2,
3–4
aspects linking design education
and 30
autonomous learning 77
business schools 23, 24, 26
calls for design thinking 23–5
a compound outlook into 4
criticism of mainstream approaches
23
Index

Alain Fayolle, Dafna Kariv and Harry Matlay - 9781786438232
Downloaded from Elgar Online at 08/30/2019 11:28:56AM
via free access
The role and impact of entrepreneurship education

experiential learning 3, 37, 187, 260–62
entrepreneur learners’ preference for 82
experience in 67–9
for experienced entrepreneurs 66–7
HEC Montréal 245–6, 249
knowledge transfer 87, 88, 99
the ladder of 69–72, 78, 84
learning by doing recommended in parallel with 152
learning design 82
team-based projects 54
experiential reflection 209
Experiential Taxonomy 68
experimentation 22, 29, 38, 41, 46, 79, 90, 95–6, 99, 170, 246, 261, 266, 269, 301
explicit knowledge 87, 88, 90
transfer, see Method Approach
external attribution of causality 213
external equity funding 256, 257
external stakeholders engagement/communication with 29, 118
influencing 327
extrinsic motivation 39, 41
face-to-face discussions 45, 49, 50–51
facilitators 79, 83; see also teachers, as facilitators
faculty department for EE (HEC Montréal) 248–9
failure 30, 98, 126, 168, 197, 213, 238, 259, 262
family entrepreneurs 73, 74, 75
Fayolle, A. 66, 67, 82, 149, 157, 159, 168, 249
feasibility studies 44
feedback in assessment 209–11, 212
in blended learning program 58–9
learning through 39, 40, 41, 42, 43
female entrepreneurs/entrepreneurship 196, 242; see also gender gap
field research 55–6
Filion, L.-J. 244
financial capital, gender gap in 256–8, 268
financial knowledge 187

Finland
basic education 152
entrepreneurship education 135
teachers’ commitment 136, 137, 138, 139, 140, 141, 143
Fisher, J. 197
flexibility 30, 125, 205, 241, 249, 329
flexible seating positions 116, 117, 125
focus, maintaining 205
focus groups 88, 171–2
formal environment 78, 79
formative assessment 211–12
freedom, EE as enabling individual 151–2
functional competences 205
further education 121

Gailly, G. 149, 249
gamification 4, 218, 248
Garavan, T.N. 123
Garnett, F. 231
Gartner, W.B. 15, 16, 121
Gedeon, S. 187
gender, and UK entrepreneurship 190
gender gap 255, 256–8, 260, 268; see also Rising Tide Angel Training Program
general activities in organization worked for 193, 194, 195, 196
general enterprising behaviour 193, 194, 195, 196
general needs 227, 233
generic teaching model 149–50, 157
geometric exercise 53
Giaever, I. 42
Gibb, A. 38, 39, 67, 169, 186, 229, 235
Gibson, D.E. 170
Gilbert, D. 24
goal setting theory 213
goals 2, 137, 138, 204, 213
Google 316
Gorman, G. 105
Graduate Skills Assessment 215
graduation 71, 285, 292, 295
Greene, P.G. 89
Grilo, I. 147
group discussion 122
group formation 116–17
group work 118, 122, 126
growth 1, 194, 195, 196, 255, 321, 325
Index

growth mindset 213
growth-oriented firms 255, 256, 257, 262, 268, 270
guerrilla skills 205
guest speakers 43, 56, 94, 115, 116, 122, 125, 126
Guidelines for Enterprise and Entrepreneurship Education (QAA) 194
gun-jumping 55

Haase, H. 168, 197
hackathons 4, 246, 301
Hackett, S.M. 285
Hägg, G. 66
Hägg, O. 151
hands-on approaches 29, 37, 39, 44, 54, 262, 312
Hannon, P. 69, 77
happiness (learner) 84
Hase, S. 231
Havenvid, M.I. 282
Hayward, L. 228
Heath, R. 230
HEC Montréal, entrepreneurship initiatives (study) 238–50
conclusion 249
literature reviews 239–41
methodology 241–8
Henry, C. 123, 124, 187
Herzl, T. 315
heutagogy 227, 231
Hietanen, L. 151, 158
high-order cognitive skills 302
higher education 15, 16, 24
Biggs’s model of constructive alignment 83
creativity within the context of 19
entrepreneurship in 159, 301
gap between employment and 301–3
international EE programs 105
see also universities
‘hitting brick walls’ 89
Hodgetts, R.M. 105
Hodgkinson, G.P. 88
holistic development (learners’) 90
holistic judgements assessment 214
homophily 258
‘How to start an entrepreneurial revolution’ 259
Hub Mosaic 243
Huberman, M. 109
Huffman, D. 187
Hug, A. 24
Hugron, P. 244
human capital 186, 264, 267
human information processing (HIP) model 208
human mind 53
human relations 205
human-centred approaches 24, 27
humanist approach, educational philosophy 77
Hynes, B. 240

ideas
creative thinking and 19
development of business 121
generation 19, 23, 29, 93, 95, 206
importance of multiplicity 23
ideation 14
identity
teacher’s sense of 132, 142
see also entrepreneurial identity; self-identity
IDEO 54
imagination 23, 205
immediate needs 227, 233
immigrant entrepreneurship 247
incubators/incubation 1, 275–6, 301
incorporating teaching methods based on 312
incubatees 275, 284, 285, 292, 295
incubator managers 275, 284–5, 292
Montréal 247, 248
process 275, 276–8
proliferation of 260
services, actors and performance 275, 279–86, 291, 292
see also university business incubators (UBIs)
individual assignments 122
induction 71
industry
disruptive innovation and edge over academia 303
dynamics between universities and 241
need to link TVET with 126
inexperienced entrepreneurs 73, 74
The role and impact of entrepreneurship education

inflexible teaching environments 187
informal environment 78–9
informal peer interactions 71
information and communications technology (ICT) 122, 138, 196, 300
information technology support 115–16, 125
initial teacher training 218
innovation 315
assessment of 126
design and 14
as an entrepreneurial competence 206
entrepreneurship 239
entrepreneurship education 3, 19, 30, 112, 113, 117, 118, 196
reliance on creativity 22–3
scientific 303
teacher commitment/adoption 132, 140
see also disruptive innovation
Innovation Module (E&I) 37–8, 42, 44, 45, 46, 49, 54
innovative teaching methods 122, 303–13, 320
innovativeness, assessment of 123
insider debt 257
insight 52, 137
inspiration 84, 167, 170, 315
Institute for Entrepreneurship (HEC Montréal) 246
institutional barriers 187
institutional logics 284–5
instructor feedback 58–9
instructor-centered learning 35, 36
intangible learning outcomes 67, 76, 84
intentionality
cognition and 208
see also entrepreneurial intentions
interactive learning environments 217
interdisciplinarity 22, 24, 29, 216
interest maximization, and adoption of innovation 132
Intergovernmental Panel on Climate Change (IPCC) 322
interim conclusions 17
internal attribution of causality 213
internal equity funding 256, 257
International Council for Small Business (ICSB) 108
internationalization 195, 196, 248
internet 1, 115, 309, 315
internships 4, 217, 247, 261, 323, 330
intrapreneurship 147, 153, 156, 193, 194, 195, 196
intrinsic motivation 18, 39, 41, 43
invention 22
Invention, Innovation and Entrepreneurship (Rensselaer) 40, 41, 43
IQbator 245, 248
Irigoyen, J.-M. 147
Isenberg, D. 259
Ismail, M.Z. 123
iteration 54, 90
iterative course development 35, 40–46
iterative research cycle 15, 16–17
Jack, S. 283
Jackson, N. 19
James, W. 261
job market, for talent 329
Johannisson, B. 124
Johansen, V. 138
Johansson-Sköldberg, U. 25, 26
Joint Research Centre (EC) 20
Jones, A. 187
Jones, C. 226, 229, 230, 231
Jones, P. 187
journal writing 39, 40, 46, 57–8
judgement 52
Jung, C. 261
Kaplan, O. 314
Katz, J.A. 239
Kauffman Firm Survey 256
Kechagias, K. 207, 215
Kelchtermans, G. 131, 132, 140, 141, 142
Kelley, T. 54
Kempster, S. 67
Kenyon, C. 231
Kerr, C. 235
Kesälahti, E. 158
Kickoff Residency 45, 54, 60
Kirby, D. 26, 106
know why 125
know-how 87, 88, 92, 98, 125, 255, 329
know-what 87, 88, 92, 98, 124, 125
know-who 87, 88, 92, 98, 125
knowledge
assessment of 124
behaviourist perspective 207
constructivist perspective 208
entrepreneurship education and 131, 137, 186
incubators and 278
and likelihood of start-ups 157
prior to EE 187
reflection/reflective practice and 152, 228
Rising Tide Angel Training Program
264–5, 269
skills and abilities (KSAs) 1, 3
subject-specific 18, 186, 327
teacher training and 142
see also business knowledge;
explicit knowledge; financial knowledge; operational knowledge; tacit knowledge
knowledge acquisition 88, 94, 187, 278, 310
knowledge generation 22
knowledge society, competencies for 204, 216
knowledge spillovers 255
knowledge transfer 36
experiential learning and 87, 88, 99
HEC Montréal 243
instructor-centred learning 35
pedagogies 37, 39, 47, 49
see also Method Approach
knowledge-based services 284
Koch, J. 197
Kolb, D.A. 38–9, 41, 42, 43, 67, 68, 77, 228, 261, 262
Kolvereid, L. 105, 186
Kormakova, I. 206
Kulieke, M. 211
Kuratko, D.F. 105, 146, 168
Kuczewska, A. 66
Kyrö, P. 66
Lackéus, M. 187
ladder of experiential learning 69–72, 78, 84
Lasrado, V. 282
latent entrepreneurs 147
latent nascent entrepreneurship (study) 146–60
conclusion 157–60
discussion 156–7
entrepreneurial learning path 147–8
entrepreneurialism in the interventions 151–6
study design 148–51
lateral thinking 44, 50, 53, 54
Lau, T. 280
Lautenschläger, A. 168, 197
Lawson, B. 25
LEAD Wales 67, 69, 72, 77, 79, 83
leadership 196, 230, 241
constructivist mindset 117
development 66–84, 122
and entrepreneurial climate 126
sustainable entrepreneurship programme 323, 325, 326–7
Leading Growth 67, 69, 72–3, 77, 79, 83
learned helplessness 68
learner(s)
effective learning design 82–4
expectations 75–7
experienced entrepreneurs as 72–5
fusion from different disciplines 4
holistic development of 90
need for development to meet entrepreneurial challenges 224
semi-autonomous 83
shift of balance of power from expert to 89
strengthening teachers’ role as 142
three-dimensional 79–82, 84
see also students
learning
behaviourist perspective 207
constructivist perspective 208, 209
design 77, 82–4
elements 69, 71
new multi-element pedagogy 35–64
opportunities 76, 79, 84, 113, 232
perceived as acquisition of knowledge 310
and reflection days 71
and teacher commitment 132–4
see also action learning; active learning; blended learning; continuous learning;
entrepreneurial journeys;
entrepreneurial journeys;
self-directed learning
learning biomes 77–9, 80, 81, 82, 83
learning by doing 24, 39, 40, 41, 42, 43, 67, 88, 97, 112, 152
learning climate adaptation 117–18, 125
learning communities 79, 133, 307
learning domains (Bloom’s) 37–8, 41, 42, 43, 204
learning environments 91, 97, 125, 217;
see also classroom environments;
learning biomes; school environments
learning goals 19, 63, 92, 187, 208
learning on the job 72
learning outcomes 3–4
alignment across 226
assumption of specifying appropriate 226–7
creativity and inappropriacy of 19
design education 30
focus of competence-based approaches 204
over-specified 217
sustainable entrepreneurship programme 327–8
tangible and intangible 67, 76, 84
UK entrepreneurship education 190
wicked problems and 27
Lee, S.S. 280
Leffler, E. 136, 143
‘left brain’ analytical skills 23
Lepage, A. 242
lessons learned meetings 88
Lewin, K. 67, 77
Li, M. 22
life skills, curriculum adaptation study 109, 110, 112, 113, 124
dependent learning model 120–21
‘lifespaces’ of the learner 77
Liñán, F. 106, 169
Lindeman, E. 225–6, 232
listening 17
Littman, J. 54
Löbler, H. 77
logical thinking 123
Lumpkin, A. 167
McAdam, M. 281
McAdam, R. 281
McAuliffe, M. 231
McCury, D. 214
McGill, I. 90
Macht, S.A. 66
McKinsey Global Institute 304
McLarty, R. 197
McLean Hunter Entrepreneurship Chair 244
Man, T.W.Y. 205
management education, see HEC Montréal
managerial skills 110, 112, 113
Marcoux, R. 245
market, need to link TVET with 126
marketing 194, 195, 196
Marlow, S. 281
Mason, C. 187
masterclasses 71, 78
Master’s programmes 35, 42, 43, 54, 60, 242, 243, 244, 311, 319–30, 329
mastery learning 35, 204
Matlay, H. 187
mental patterns 53, 54
mentors/mentoring 22, 122, 167, 168, 187, 196, 244, 247, 248, 262, 291, 312
mesosystem 77
meta-cognition 208
meta-competencies 205
Method Approach (study) 87–101
conclusion 99–101
discussion 98–9
findings 92–8
five linked elements 89–90
literature review 88–90
research methodology 90–92
Mezirow, J. 224
Mian, S. 280
Michigan Work Readiness Portfolio 214
micropolitical acceptability 138
microsystem 77
Miles, M. 109
Miller, D. 244
mini assignments 122
mini-lectures 47–9
Ministry of Education (Finland) 135
Mitchell, B. 106

Mitchelmore, S. 205
mixed assessment methods 209, 217
moderators, focus groups 172
modifications, curriculum adaptation 106
Moen, Ø. 105, 186
monitoring, curriculum adaptation study 108
moral support 139
Morris, M.H. 205
motivation 1, 18, 39, 41, 43, 138, 241, 261
classroom environment and 108
development of 121
goal setting theory 213
quality of education and 164
Rising Tide investors 269
role models and 170
of teachers 133, 139, 140, 141
teachers’ effect on 176
UK entrepreneurship education 190
Mueller, S. 187
MyBusinessModel 245

Nabi, G. 159
nascent entrepreneurs/entrepreneurship 36, 83, 147; see also latent nascent entrepreneurship (study)
natural experience 58
Neck, H.M. 89
negative learning 95
negotiation, educator and student 227–8
neoclassical paradigm 324
nested structures, learning in 77
Netherlands
university business incubators 286, 287
see also University of Groningen networks/networking 262

angel and venture capital (VC) 258
building and using 205
Business Families Center 248
curriculum adaptation study 112, 113, 115–16, 124, 125
design education 29
gender differences 256
impact of EE on 196
incubators and 284, 291

Rising Tide Angel Training Program 267, 268, 269
shared learning and development of 35
skills development and access to 187
neural plasticity 19
neuromarketing 14
non-business schools, entrepreneurship education in 239
Norrmann, C. 279

O’Beirne, R. 231
objectives of EE 105, 107, 109–11, 120–21, 124, 137, 152, 153
observation 16–17, 88, 90, 170, 207, 261
observatory (HEC Montréal) 246
occupancy rate, incubator performance 295
occupation destinations 193
O’Cinneide, B. 123
O’Connor, A. 258
OECD countries 204
office space, incubators and 284
online forums 71; see also discussion forums
online learning 4, 63, 94, 245, 247; see also blended learning; distance learning
ontological view, in EE 151–2, 157
openness of administration 117, 118
openness of mind 22
openness to the environment 95, 125–6
operational competences 206
operational knowledge 186
opportunity assessment 205
opportunity competencies 205
opportunity costs (program) 124
opportunity discovery/exploration 93, 95, 152
opportunity recognition/perception 15, 18, 24, 30, 110, 121, 194, 195, 196, 205, 206, 259
organising competencies 205
organizational management 326
Osteryoung, J.S. 280
Our Underachieving Colleges (Bok) 302
output, curriculum adaptation 108
outsider debt 257
outsourcing (teacher) 143
The role and impact of entrepreneurship education

Owen, C. 22
owner equity 257
ownership 39, 43, 94, 111

Pakistan, curriculum adaptation study 105–7
Palmer, P. 232, 234
Parker, C. 230
participant-centred learning 35–6, 38, 39, 46
passion(s) 225, 227, 231, 232, 234
path dependence 322
pedagogical characteristics (role models) 169, 174, 175
pedagogical skills 105, 111–12, 126
pedagogy(ies)
entrepreneurial learning 87, 88
instructor-centered learning 35, 36
new multi-element assessment of 59–62
extending/modifying existing models 37–40
implications and conclusions 62–4
iterative process of course development 35, 40–46
portfolio of integrative and reinforcing 47–59
parallels, designerly led and best practice 15, 29
participant-centred learning 35–6, 39
practice-based learning 90
real-world 67
tacit 68
teacher commitment 132
the three-dimensional learner and 84
traditional 308–9
pedagogy–androagogy–heutagogy (PAH) 227, 231
peer assessment 118, 215, 226
peer interaction 71, 73
peer-to-peer support 218
Pellegrino, J.W. 207
Peloquin, L. 244
Peltonen, K. 151, 158
perceived self-identity 81, 82
performance management 326
Perrotta, C. 132, 138, 139, 141, 142
Perry, W. 230
perseverance 18, 205
personal attachments (teachers’) 131, 132, 141
personal capability 99
personal characteristics (role models) 169, 174, 175
personal competencies 205
personal development 110, 138, 230, 261
personal observation 16–17
personal support 115–16, 125
personalised learning 231
personalized project-based learning (PPBL) 312–13
perspective transformation, EE as (study) 224–35
conclusion 235
development of the reflective student 228–32
discussion and implications 232–5
method 228
philosophical level/view of EE 150, 151–2, 157, 160
Piaget, J. 67, 261
Pihkala, T. 131, 143, 157
pitching 196
Pittaway, L. 29, 67, 72
play 89, 93–4, 99
Plumly, L. 122
policy management 326, 327
policy-level objectives 130, 131, 141, 142, 143
policy-makers, reassurance in value of EE 198
political support 140
portfolio assessment 214–15
positive attitudes 124, 147, 151, 311
post-incubation 277, 278
practical-oriented teaching methods 122–3
practice, theory and 22, 29, 87, 88, 99, 112, 187
practice-based learning 88, 90, 97, 100
practices, teacher commitment 133, 137–8, 140, 141
pre-incubation 276–7, 278
predictability 23
prediction 22
Preedy, S. 187
preliminary thoughts 17
ladder of experiential learning 70
new multi-element pedagogy 38, 39,
41, 46, 52, 57–8
and strengthening of competences 158
and teacher commitment 132, 140,
141
in uncertainty and problem-solving 90
reflective learning 90
reflective observation 170, 261, 262
reflective practice 90, 137, 228
reflective student, development of the 228–32
reflective training 123
reflectivity 208
regional networks 115–16, 125
relationship competencies 205, 206
relationship management 326
Rensselaer Polytechnic Institute (RPI) 40
research challenges emerging from 2–3
cultural clash in attitudes to 22
on effectiveness of EE and training 123–4
HEC Montréal 243, 244, 247
see also academic research; field research; scientific research
resilience 18, 30, 205, 241, 301
resource alignment 227–8, 234–5
resource leveraging 205
resource maximization 95
resourcefulness 22, 95, 194, 195, 196, 197
respect 111
responsibility 76, 94, 96, 110, 174–5
responsibility agreement 227–8, 234–5
Réussir son démarrage d’entreprise (Montréal) 247
‘right brain’ creative skills 23
ripple model of learning (Race) 39, 41,
42, 43
Rising Tide Angel Training Program 255–70
activities 262, 263
conclusions and next steps 268–70
gender gap in financial capital and
impetus for 258
pilot fund 262
The role and impact of entrepreneurship education

program results and participant feedback 263–8
theoretical framework 260–62
risk 30, 37
risk aversion 257
risk identification 95
risk management 29, 205
risk propensity 241, 256
risk-taking 24, 110, 126, 151, 187, 205, 206, 241, 256
Rittel, H. 26–7
Robb, A. 264
Rogers, C. 261
role models, see teachers, as role models (study)
role play 70, 71–2, 90, 122, 123
Rothermael, F.T. 281
Rousseau, D. 88
Rowley, J. 205
Royal College of Art (RCA) 14, 15
Ruismäki, H. 151
Ruskin, J. 231, 234
Ruskovaara, E. 131, 143, 157
Russell, R. 187
Saavala, T. 186
Saldaña, J. 109
Sánchez, J.C. 186
Sarasvathy, S.D. 23
scaffolding 209, 217
scenarios 90, 95
Schieb-Bienfait, N. 124
Schön, D. 228
school climate 107–8, 118, 125
school culture 159
school environments 24
school work, entrepreneurship education in 137, 138, 139, 141
Schumpeter, J. 239
Schwartz, M. 134, 142
'science' element, of entrepreneurship education 240
scientific problem solving 27
scientific research 22, 323, 327
seating format 116–17, 125
Segers, M. 211
Seikkula-Leino, J. 132, 133, 136, 141, 157
self-assessment 153, 212, 215
self-authorship 230
self-belief 74, 76
self-concept 167, 170
self-confidence 74, 76, 99, 176, 177, 187, 241, 262, 265–6
self-defensive attitude 213
self-determined learning 227, 231
self-directed learning 28, 35, 91, 98, 229, 235
self-efficacy 126, 205, 256, 257, 259
self-employability 187, 189
self-employment 107, 110, 111, 146, 147, 185, 186, 193, 194, 195, 196, 197, 203
self-esteem 138
self-identity 72–5, 81, 82
self-improvement 213
self-learning 224, 300, 302, 305, 311, 312, 314
self-management 326
self-negotiated action 227, 230–32, 233, 235
self-perception 176, 177
self-questioning 208, 209
self-reflection 152, 228
self-reflective educator 225
self-regulation 212, 213
self-understanding (teacher) 132, 137, 139
Selingo, J. 302
semi-autonomous learners 83
Senor, D. 315
sense-making 39, 41, 43, 78, 88, 90
shadowing 71
Shane, S. 187
shared learning experience 35, 36–7
shared resources, incubators and 284
Shepherd, D.A. 122
Shulman, J.H. 132, 133, 135, 136, 141, 142
Shulman, L.S. 132, 133, 135, 136, 141, 142
Simon, L. 243
simulations 3, 70, 90, 122, 261
Singer, S. 315
situated learning 66, 71, 72, 79
skills development 36, 37, 38, 41, 46, 95, 99, 124, 170, 187, 197, 249
skillsets valued by employers 302
Index

see also brain skills; entrepreneurial skills/skillsets
small business 193, 196, 238
Small Business Consulting module 91, 92, 99
Social Business Competition 248
social capital 186, 267
social constructivism 134, 208–9, 210
social enterprise 193
social entrepreneurship 196, 248
social learning theory 165, 166, 167
social media 118, 196; see also blogs/blogging
social skills 186
societal development 110
socioemotional skills 302
Soetanto, D. 283
soft skills 205, 212, 213, 302, 314
Somby, H.M. 138
Souitaris, V. 186
Spain, entrepreneurship education 134
teachers’ commitment 137, 138, 139, 140, 141, 143
university business incubators 286, 287
stakeholder engagement 29, 118
standardised instrumental assessment 215
Stanford Technology Ventures Program 49
Start-Up Nation: The Story of Israel (Senor and Singer) 315
Startup Accelerator (HEC Montréal) 246
static mindset 213
Steinaker, N. 68
stereotypes 72, 73, 74, 75, 83
Storey, D.J. 124
strategic competencies 205
strategy management 326
student(s)
development of reflective 228–32
engagement 40, 41, 44, 45, 48, 52, 63, 227, 301, 312–13
see also active engagement
evaluations 59–64, 123, 124
group formation 116–17
intentions, see entrepreneurial intentions
letter to (COLLMAN) 314–17
monitoring performance 108
needs, curriculum design 106–7
responsibility 174–5
role in assessment 211, 212
strengthening competences 158
see also learner(s)
student-centredness 111, 126, 226, 229, 303–13
Subject Benchmark Statements (QAA) 21
subject-specific knowledge 18, 186, 327
success, entrepreneurial 30, 36, 37, 124, 213, 240, 247, 259, 315, 319, 329, 330
success stories 116, 125, 126
summative assessment 217
superficial experience 69, 70
sustainable entrepreneurship programme 319–30
aim 324–5
conclusion and lessons learned 328–30
content and structure 325–7
learning outcomes and future careers 327–8
mission, vision and strategy 321–4
University of Groningen 320–21
sustainable society 324
Sutton, B. 49
Svedberg, G. 136, 143
Synopp approach 247
tacit knowledge 87, 88, 90
transfer, see Method Approach
talent, job market for 329
tangible learning outcomes 67, 76
Tavistock Conference Model 305
Taylor, P.C. 209
teacher training 108, 131, 140, 142, 143, 218, 240
teachers
attitudes 131, 168, 174
commitment to EE (study) 130–43
conclusions 142–3
discussion 141–2
learning and reflection 132–4
methodology 134–6
results 136–40
competence 146, 158
The role and impact of entrepreneurship education

curriculum adaptation (study) 106–27
conclusion 124–6
discussion 120–24
research method 108–9
results 109–20
theoretical framework 106–8
as facilitators 77, 117, 122, 125, 168, 305, 307, 312
flexibility of mindset 117
role, knowledge transfer 100
as role models (study) 164–78
conclusions 177–8
methodology 170–73
results 173–7
theoretical background 166–70
see also
teaching learning strategies
development 107
teaching methods, innovative 122, 303–13, 320
teaching staff 3, 4
team assignments 90
team formation 116, 117, 125
team scenarios 95
team working 24, 50, 88, 90, 127, 206, 215, 306
team-based projects 43, 54
Tech3Lab (HEC Montréal) 243
technical notes 39, 46, 48–9, 54
technical support 115–16, 125
technical teachers, identification with 170
technology 315
entrepreneurial trends 1
and learning environments 217
teacher engagement with 132
in teaching EE 158, 218
transfer 279
see also
information and communications technology
The Ten Faces of Innovation (Kelley and Littman) 54
Thematic Working Group on Entrepreneurship Education (EU) 24
theoretical perspectives, assessing transversal competences 212–13
theorizing 38, 41
design teachers
theory and practice 22, 29, 87, 88, 99, 112, 187
‘think outside the box’ 53
Thorpe, R. 67	hree-dimensional learner 79–82, 84
Thursby, M. 281
time commitment 39, 41, 42, 43, 44, 46, 51, 53, 62–3, 64
time management 60–62, 76
Toulouse, J.-M. 243–4
Tower of Babel 315–16
tracer studies 127
trades, content adaptation for different 107, 114
trading room (HEC Montréal) 243
traditional pedagogic approach 308–9
training, incubators and 284
training cynics 73, 74
transdisciplinary education 323
transferable skills 3, 97, 302, 312, 314
transformation, in meaning perspective 224, 232
transformational learning 225, 230
transversal competences 203
assessment 212–16, 217
emphasis on entrepreneurialism to increase 157
relevance of 205–6
Tyler, R. 204, 226, 229
uncertainty 22, 29, 36, 37, 90, 97, 122, 165, 224, 226
understanding
business growth 195
deepening 39, 41
of EE, teachers’ 133, 138–9, 140, 143
unemployment 186, 193, 321
United Kingdom 68
entrepreneurship education 134–5, 240
providing effective 185–198
teachers’ commitment 136–7, 137–8, 138–9, 140, 141, 143
use of written examinations 123
United Nations 321, 324
United States 68, 105, 238, 240, 258, 284
universities
concern regarding value of degrees (UK) 185–6
Index

Index

dynamics between industry and 241
entrepreneurship education in 238
managers' confidence in value of EE 198

see also higher education
university business incubators (UBIs) 276, 278–9, 314
empirical studies 280–83
study analysis 291–5
conclusions 295–6
methodology 286–91
university entrepreneurs 276
University of Groningen 319–30
University of South Wales (USW) 188, 190, 191, 192
University of Tasmania 228–9, 232, 233, 234
user-experience (UX) research laboratory (Montréal) 243
utility maximization, and adoption of innovation 132

Val, E. 24
value creation 187, 205
Van Auken, H. 167
Van Gelderen, M. 77
venture creation 20, 36, 37, 116, 121, 122, 197, 224, 235, 239
Vesper, K.H. 121
Villers, M.E. 242
virtual collaboration 248
virtual education, see online learning
virtual work culture 309
vision/visioning 2, 23, 133, 136–7, 140, 205, 315

visualisation 93
vocational education and training 24, 68; see also teachers, curriculum adaptation (study)
volunteering 193

Webb, M.W. 68
Webber, M.M. 26–7
Weird Ideas that Work (Sutton) 49
welfare growth 321
Wellinghoff, S. 62
Westbury, I. 142
Whitehead, A. 229
wicked problems 22, 26–8
Wiggins, G. 209
Williams Middleton, K. 187
willingness to learn 81
Wilson, J.P. 69
winners, picking, in relation to venture creation 224
Winter, A. 231
women-owned firms 256, 257, 258, 262, 270
Wonglimpiyarat, J. 283
Worcester Polytechnic Institute (WPI) 39, 40, 62
workplace assessment 215
workshop learning environment 97
Wright, S. 167
Wyckham, R.G. 123
Youth Engagement Services (YES) Network 126–7
Zionist vision 315