

# Contents

About the Authors	viii
Acknowledgements	ix
Introduction New Learning Practices	1
What's New in Learning?	1
What is Driving New Conditions for Learning?	6
Chapter Contents	8
Looking Forward	10
Further Reading	11
Chapter 1 The New Media	12
Introduction	12
Features of Computer-mediated Communication	13
Conclusion	26
Further Reading	27
Chapter 2 Theories of Learning	28
Introduction	28
Transformation, Framing and Emergence	29
Challenges for Assessment	40
Toward E-learning Theory	41
Texts	41
Conclusion	43
Further Reading	44
Chapter 3 Theorizing Online Learning	45
Introduction	45
Existing Theoretical Positions	47
Does E-learning Require a New Theory of Learning?	56
Three Questions Answered	57

Further Thoughts	60
Conclusion	61
Further Reading	62
Chapter 4 New Literacies, New Discourses in E-learning	63
From New Literacies to New Discourses	63
Exploring Modes	65
From 'Literacy' to 'Discourse'	70
The Implications of a 'Discourse' View of E-learning	71
A Reciprocal, Co-evolutionary Model of Literacy Development and Learning	75
Developing a New 'Language' for E-learning	77
Conclusion	80
Further Reading	80
Chapter 5 Participatory Cultures	81
Introduction	81
Technologies of Participation	84
Brief History of IT Development	87
Participatory Media	90
Educational Spaces: 1.0 and 2.0	93
Changes in Authority and Contribution	96
Conclusion	107
Further Reading	108
Chapter 6 Learning Communities	109
Introduction	109
Defining and Locating Community	109
Why Collaboration and Community?	111
The Concept of Community	114
Creating an E-learning Community	118
Promoting a Community	122
Conclusion	123
Further Reading	124
Chapter 7 Sociotechnical Perspectives	125
Introduction	125
Reviewing Social Processes and Technology	129
Managing the Social and Technical Mix in E-learning	135
Balancing the Social and Technical	138
Conclusion	141
Further Reading	142
Chapter 8 E-learning Ecologies	143
Introduction	143
The Ecology of the E-learning Environment	148

Personal Ecologies	157
Conclusion	159
Further Reading	160
Chapter 9 Ubiquitous Learning, Ubiquitous Learners	161
Introduction	161
Becoming a Ubiquitous E-learner	163
Who Is a Ubiquitous E-learner?	165
What Does a Ubiquitous Learner Learn?	167
The Ubiquitous Learner and the Economics of Attention	176
Conclusion	177
Further Reading	178
Chapter 10 E-inclusion and Exclusion	179
Introduction	179
Digital Divide	180
Digital Spectrum	183
Conclusion	189
Further Reading	190
Chapter 11 Cross-cultural Issues	191
Introduction	191
Issues Arising from Cultural Diversity	192
E-learning Across the Globe	199
Potential Problems with Cross-Cultural Approaches to E-learning	205
Further Reading	206
Chapter 12 Researching E-learning	207
Introduction	207
Getting Started in E-learning Research	209
E-learning Research Dimensions	213
Research <i>about</i> and <i>for</i> E-learning	213
New Forms of Research Formats in the Digital Age	215
Becoming an E-Researcher	217
Future Research	219
From Research <i>about</i> E-learning to Research <i>for</i> E-learning	223
Conclusions	224
Further Reading	226
References	227
Index	255

# Index

Added to a page number 'f' denotes a figure and 't' denotes a table.

- A
- absorptive capacity (organizational) 157
- abstract conceptualisation 130
- abstraction 73
- academic expectations 194
- academic literacy 196
- access issues 21, 60, 93, 96, 102–3, 175, 179, 199, 200
  - see also digital divide; digital spectrum
- accomplished fellows 171
- accredited institutions 150
- active engagement 31, 37
- active learning 81, 193
- active participation 174
- activity systems 154, 159, 167, 170
- activity theory 51, 154
- actor networks 155
- adaptive structuration 38, 173
- adoption of innovations 39, 184–5, 187
- affordances 14–15, 18, 67, 136, 214
- African Virtual University (AVU) 200
- African-Americans 184, 185, 193
- age 13, 186t
- agile computing 133–5
- Alexandria Proclamation on Information Literacy and Lifelong Learning 103
- alpha versions 87
- American Bar Association 150–1
- andragogy 165–6
- anonymity 14, 15t, 16–17, 138–9
- antecedent technology 132
- 'anyone, anywhere, anytime' 14, 15t, 18–20, 91, 163, 174–6
- applications 84
- apprenticeship 73, 170
- appropriateness 173–4
- appropriation 163
- argumentation 34, 193, 216
- Arizona State University 197–9
- assessment 40, 79
- assessment for learning 78
- asynchronous communication 14, 15t, 18–20, 24, 61, 210
- asynchronous discussion 139
- attention 12, 176–7
- attitudes, to online posting 23
- aural modes 67
- authority 1, 83, 95, 96–107, 192, 207
- automate 129–30
- automation 88
- autonomy 50, 78, 177
- B
- behaviourism 28–9, 48
- beta versions 87
- bilingualism 196
- Blackboard Academic 214
- blended learning 13, 47, 112, 203–5, 211, 214
- blogging tools 89
- blogs/blogging 14, 24, 89, 90, 93, 99, 150, 163
- blue-sky research 214–15
- bonding social capital 117
- border conflicts, e-learning environments 150–1
- border zones 145
- boundaries 140–1, 150–1, 152, 164, 175
- braided conversations 171
- braided texts 171
- braiders 171
- bridging social capital 117
- broadband adoption 184, 187
- bulletin boards 90, 99
- C
- Census Bureau (US) 181
- change, resistance to 187
- chat rooms 115
- children 175, 185
- choice(s) 50, 78, 125–6, 127, 136
- citizen journalism 90
- classrooms 21, 95–6, 170, 174
- clickers 96
- CMC see computer-mediated communication
- co-construction 33, 83, 167, 174
- co-evolutionary sociotechnical mixes 132
- co-learners 166–7
- co-learning pedagogy 49
- co-presence 41, 49
- cognition 29, 31, 156, 170
- cognitive constructivism 48
- cognitive development 31
- cognitive distance 174
- cognitive presence 112
- cognitivism 28–9
- collaboration 7, 109, 111–14
- collaborative learners 165



- collaborative learning 20, 82–4, 98, 111–12, 136–7, 168, 174
  - collaborative production 79, 90, 106, 163
  - collaboratories 107
  - collective learning 32–3
  - Commission of European Communities report (2005) 186
  - communal action 111
  - communal bonds 121
  - communal constructivism 48
  - communal interaction 111, 116
  - communication cues 13–14, 17, 21, 97–8, 112, 136
  - communication-as-social-action 29
  - communities of practice 170
    - developing (case study) 113–14
    - e-learning environments 112–13
    - epistemic 110
    - volatile 119
  - community(ies)
    - collaboration 111–14
    - concept of 114–18
    - defining and locating 109–10
    - enculturation 110
    - of inquiry 83
    - of interest 90, 115
    - Internet access and use 186t
    - multiple memberships 49, 58–9
    - norms 110, 111, 115, 119, 122
    - roles 115–16
    - see also* e-learning communities; personal communities; virtual communities
  - community informatics 189, 202
  - community learning 32, 38, 44
  - community-based e-learning 200
  - community-based studies 219
  - community-directed knowledge 178
  - community-embedded learning 110, 152, 172
  - community-oriented e-learning 168
  - competition 150
  - composite logic 16t, 24, 25
  - composition 74
  - computer ownership 181
  - computer-mediated communication 12–27
    - affordances 14–15
    - erosion of authority 97–8
    - features 13–26
    - hidden identities 197
    - invisible colleges and communities 115
    - new conditions for learning 6
    - versus face-to-face communication 12, 13–14
  - computer-supported collaborative learning 20, 83, 132
  - computer-supported cooperative work 132
  - conflicts, in-learning 150–1, 175
  - Confronting the Challenges of Participatory Culture: Media Education for the 21st Century 85
  - Confucian-heritage education systems 192
  - connectivism 48
  - connectivity 15t, 18–20, 49
  - 'consequent to use' technology 132
  - constructionism 28–9
  - constructivism 48
  - content, in learning 58, 122
  - context(s) 64, 110, 119, 129
  - contribution, changes in 96–107
  - contribution rating 150
  - conventional learning theory 28
  - convergence, cultural 205–6
  - conversation 22, 24, 91–3, 99, 126, 171
  - copyright 100
  - coterie e-learners 19
  - courseware 45, 100, 131
  - creative commons 52, 218
  - critical thinking 112
  - cross-border interaction 153
  - cross-cultural issues 173–4, 191–206
  - crowdsourcing 82, 106, 107
  - cues
    - in learning 41
    - see also* communication cues
  - cultural diversity 192–9
  - cultural player, technology as 155
  - cyber-building 156
  - cyber-cities 161
  - cyber-locality 110, 151
  - cyberlife 159
  - cyberworlds 115
- D
- data capture 14
  - data clustering 144
  - data collection 218
  - data mining 144, 161
  - data processing 88
  - data summations 130
  - declarative knowledge 169
  - delayed use 186–8
  - democracy 35
  - demotic participation 78
  - design technology, human needs 132
  - designers of systems 130–1, 132
  - 'desktop' metaphor 31
  - devices 75, 84, 221–2
  - diagnostic assessment 40
  - dialogic relationships 61–2
  - digital divide 60, 180–2, 189, 202
  - digital ecologies 144, 155, 156
  - Digital Education Enhancement Project (DEEP) 201–2
  - digital hopefuls 184
  - digital lag 186
  - digital libraries 93, 103
  - digital lifestyle 182
  - digital media theory 55
  - digital repositories 106
  - digital spectrum 60, 183–9, 202
  - digitally distant 184
  - digitally uncomfortable 184
  - digitization 61, 73–4, 161, 215
  - disability 180, 182, 188, 194
  - disciplinary knowledge 33
  - disclosure *see* self-disclosure
  - discourse 65, 66
  - discourse communities 33
  - 'discourse' view of e-learning 71–5
  - discussion 139
  - discussion boards 115
  - discussion groups 150
  - discussion lists 24
  - disengagement 121
  - dissertation/theses 215–16
  - distance(s) 55, 73, 174, 195–6
    - see also* transactional distance
  - distance learning 1, 47–8, 49, 151, 187, 194
  - distributed cognition 170
  - distributed groups, learning 'to be' 173–4
  - distributed learners 49, 123, 139, 152, 175, 191
  - distributed organization 32
  - diversity of niches 145, 146
  - diversity of species 145, 146
  - divides, in collaborative practice 174
  - domain recognition 33
  - dominant paradigms 34
  - 'driving and informing' metaphor 31
  - dual locality 152

- E
- e-citizens 52
- e-facilitators 171
- e-learners 19
  - becoming 43, 201
  - discourse view of learning 74
  - entrepreneurial 3
  - problems, dealing with (case study) 195–6
  - relationship between screen and 72
  - social ties 118
  - society of 159
  - see also* distributed learners; ubiquitous e-learners
- e-learning
  - across the globe 199–205
  - adoption of 184
  - conflicts in 150–1, 175
  - constraints 179–80
  - content 58, 122
  - convincing the skeptics (case study) 4–5
  - cross cultural issues 191–206
  - delayed use 187–8
  - developing a new language for 77–9
  - discourse view of 71–5, 224
  - distinctiveness of 46, 61
  - ecology metaphor 143–59
  - inclusion and exclusion 60, 179–90, 195
  - initiatives, consequences of drive for 60
  - innovation 207–8
  - learning theories 28–44
  - medium 65
  - modes 65–70
  - new media 12–27
  - outcomes 211
  - participatory cultures 81–108
  - personal worlds 158–9
  - perspectives 146t
  - preference for term 46
  - roles 146t
  - sociotechnical mix 135–9
  - theoretical perspectives 45–55
  - as a transformative movement 2–3
  - see also* mobile learning; ubiquitous learning
- e-learning communities 48, 61, 148
  - creating 118–19
  - migratory practices (case study) 222–3
  - norms 110, 115, 119
  - online graduate degree program 119–21
  - promoting 122–3
  - relation to situated real-world communities 58–60
  - roles 116, 171, 172
  - situated practices 170–2
  - stages in belonging 121
- e-learning environments
  - blended/hybrid 13
  - as communities of practice 112–13
  - ecology of 148–57, 220
  - ergonomics of 144
  - passivity and argumentation in 193
  - similarity to collaboratories 107
  - technologies of participation 85
  - transductive 42
  - see also* virtual learning environments
- e-learning portals 115
- e-learning research 47
  - about and for e-learning 213–15, 223–4
  - agenda 208
  - dimensions 213
  - future 219–24
  - getting started 209–13
  - methodologies and methods 220–1
  - new formats 215–17
  - e-learning theory 28, 41
    - need for 45, 56–60, 62, 224
  - e-research 55, 217
  - e-research centers 217
  - e-researchers 217–18
  - e-science 25
  - ecology of games 128, 144
  - ecology metaphor, e-learning 143–59
  - ecology of resources 144, 159
  - economics of attention 176–7
  - education
    - about technologies of participation 85
    - Internet access and use 185, 186t
    - web presence 93–5
  - educational environments, interaction in 117
  - educational informatics 128
  - email 13, 24, 88, 90, 92, 94, 99, 221
  - 'embedding societal and local community' 110
  - emergence/emergent learning 29, 33, 37–8
  - emergent practices 169–70
  - emergent sociotechnical mixes 132
  - emoticons 21
  - enculturation 110, 169
  - end-user computing 88
  - engagement 31, 37, 49, 121, 140
  - entity-relationships models 24
  - entrepreneurial behaviour 54
  - entrepreneurial learners 3
  - entrepreneurial learning 56, 81
  - ephemeral conversations 22
  - epistemic communities 33, 110
  - Epistemic Cultures* 169
  - epistemological discovery 33
  - equivocality 169–70
  - ergonomics of learning environments 144
  - ethnicity 182, 193, 194
  - European Journal of Open, Distance and E-learning* 196
  - everyday e-learners 19
  - exclusion, inclusion and 60, 179–90, 195
  - existential, learning as 31
  - expansive learning 38, 77, 154, 170
  - expectations 194, 205
  - experience, signalling 98
  - experiential activities (case study) 198–9
  - experts, change in relationships with 97–8
  - expression, new forms of 121
- F
- fabric-related metaphors 171–2
- face-to-face classrooms 170
- face-to-face communication 12, 13–14, 17
- face-to-face lectures 97
- Facebook 90, 99, 153, 161
- facilitating learning 144
- faithful appropriation 163
- family ties 117
- fast capitalism 177
- Federico II (case study) 100–1
- file-sharing 88–9
- 'filing' metaphor 31
- flexibility 131, 132, 147
- Florida State University 17, 22–3, 136–7, 140
- focus of community 122–3
- focus groups 215
- formal e-learners 19
- formal learners 18
- formal learning 155
- frame-changing experiences 37
- frames 29, 66, 73, 74
- frames for action 35
- framing 29, 35–7, 43, 79



freezing 174  
functionality 87

## G

game players 166  
games, ecology of 128, 144  
gaming 94  
gender 13, 182, 186t, 194, 202–3  
generalists 145  
generative dance 38  
genres of contribution 90  
geocaching 188  
geographic community 115  
global communication 16t, 20–1  
global digital divide 180–1  
global positioning systems 188, 218  
glocalization 158  
Google analytics 221  
grading, online conversations 92–3  
group cohesiveness 112  
group evaluation 94  
group interaction 111  
group learning 32  
group memory 121  
group norms 111  
group processes 55  
group work 111

## H

hand-held devices, for research 221–2  
hegemony 35, 57–8, 205  
heterogeneity 197  
hidden identities 197  
hierarchies 24  
Hispanics (Latinos) 184, 185, 193  
hobby learners 166  
home, working at 175  
home access 183t, 184, 185–6  
home broadband 184, 187  
homogeneity 197  
homophily 117  
Hot Dish social networking application (case study) 68–70  
HTML 89  
human ecological systems 147  
human needs, design technology 132  
humanism 216  
hybrid learning *see* blended learning  
hyperlink protocols 89

## I

'I-Help' system 144  
iconic mode 66–7  
icons 21, 26, 31  
idea generation 138  
identity 17, 28, 138, 170, 191, 197  
imagination 42  
imagined communities 115  
imagined ideal, community as 122  
immediacy of interaction 12, 19  
'in the service of learning' 94, 142  
in-class/out-of-class 19, 95, 188  
inclusion and exclusion 60, 179–90, 195  
income, access and use 184, 185, 186t  
individuality 138  
individualized sociability 158  
informal e-learners 19  
informal learners 18  
informal learning 18  
informate 129–30  
information, changes in relationship  
with 102–6

information age individuals 157–8  
information age school 105–6  
information collections 166  
information and communication  
technology  
and learning 76f  
new conditions for learning 6–7  
*see also* computer-mediated communication;  
social informatics  
information culture 82  
information divide 189  
information ecologies 143–4, 155  
information flow 144  
information literacy 102–5, 170  
Information Literacy Competency Standards for  
Higher Education 104  
information practices 11  
information sharing 150  
information technology  
appropriation 163  
historical development 87–90  
*see also* information and communication  
technology  
informational learning 37  
infrastructures 84  
innovation  
adoption of 39, 184–5, 187  
in e-learning 207–8  
social dynamics of 220  
socio-economics 188  
*see also* pro-innovation bias  
inquiry, communities of 83  
institutional cultures 194  
institutional disputes 151  
intellectual property 100  
interaction  
cross-border 153  
educational environments 117  
immediacy of 12, 19  
protocols for 138  
*see also* communal interaction; online  
interaction; peer interaction; social  
interaction  
interactive discussion 139  
interconnectivity 130–1  
intercultural communication class (case study) 197–9  
interdependence 16t  
interdependent work 99  
interest, communities of 90, 115  
interface work 72–4  
interfaces, e-learning 71–2  
internalization 51, 52  
Internet 175  
access and use 175, 180, 183t, 184–6  
individualized sociability 158  
integration into everyday life 112  
resources 20  
ubiquitous learning 163, 166, 175  
Web 1.0 88–9  
Web 2.0 89–90  
Web 3.0 90  
world statistics 183t  
*Internet Galaxy* 189  
interpretation 42  
interpretive frames 29, 35, 74  
interrelation of modes 73  
interruptions (classroom) 95  
intrinsic motivation 53–4  
invisible colleges 110, 115  
invisible work 19, 139, 147, 148, 149  
ironic appropriation 163

## J

- Journal of E-Learning and Education* 196
- 'juggling' metaphor 175–6
- 'just-in-place' learning 59
- 'just-in-time' learning 18, 59–60, 72

## K

- kaleidoscopic approach, research methodology 221
- knowledge
  - construction/co-construction 29, 33, 83
  - e-learning perspective 58, 61–2, 169
  - ecologies 155
  - freezing and unfreezing 174
  - generation 38
  - hegemony of 57–8
  - production 155
  - providers 119
  - sharing 112
  - structures 172–3
  - transfer 172

## L

- Lancaster University (UK) 153
- laptops 95–6, 152
- latent tie structure 118
- Latinos (Hispanics) 184, 185, 193
- learner agency 50, 56, 77–8
- learner autonomy 50, 78, 177
- learner centric ecology of resources 144
- learner needs, collaborative learning as response to 83
- learner presence 121
- learner-centred learning 81, 83
- learner-generated contexts 18, 166
- learner-leaders 116, 172
- learners
  - changes in relationship with 98–9
  - describing 18–19
  - see also* e-learners
- learning
  - developments in 1–3
  - ICT and new conditions for 6–7
  - reciprocal co-evolution model 52, 75–7
  - see also* collaborative learning; e-learning
- learning analytics 130
- learning cultures 192–3
- learning disability 180
- 'learning as the effect of communities' 48–9, 61
- 'learning as the effect of interconnection between communities' 49
- learning environments
  - changing nature of learning 34
  - see also* e-learning environments
- 'learning is an effect of community' 34, 47, 48, 201
- Learning Network (case study) 86–7
- learning objects 88, 128
- Learning Objects Metadata (LOM) standards 130
- learning practices 2–3, 56, 122, 169–72, 174
- learning space 1, 33, 47, 71
- learning styles 193–4
- learning theories 28–44, 219
  - see also* e-learning theory
- learning 'to be' an e-learner 168–74
- lecture notes 99
- lectures 97
- legitimacy of contribution 98
- librarians 102–3
- libraries 93, 103, 152, 166
- life experience 98, 99
- lifelogging 161
- lifelong learners 18, 166

- lifelong learning 207
- linguistic confidence, lack of 196
- listening, cross-cultural 202
- listservs 90, 94
- literacies 71
  - see also* academic literacy; information literacy; new literacies; participatory literacies
- literacy
  - reciprocal co-evolution model 52, 75–7
  - term 26, 65, 66, 70–1
- local context, technology adaptation 201–2
- locality 110, 151–3
- logics of representation 16t, 23–5
- loose coupling 147, 148

## M

- m-learning *see* mobile learning
- management theories 55, 173
- marginalization 194–9
- market-research and design model 215
- markup languages 89
- mash-ups 78, 131, 133, 155
- meaning 30, 31, 36, 167
- meaningful engagement (case study) 140
- media 6, 117, 176–7
  - see also* multimedia; new media; participatory media; social media
- media multiplexity 156
- meta-learning 60
- metadata 88, 128, 130, 131
- metaphors, personal learning 31
- methodologies/methods (research) 220–1
- micro-politics, and learning 34–5
- microblogging 106, 161
- migratory literacies 222
- migratory practices, e-communities and research (case study) 222–3
- mindfulness 30
- Mirandanet 171
- mobile communication 14, 15t, 18–20
- mobile devices 75
- mobile learning 2, 31, 59, 74–5, 163, 187
- mobile phones 20, 75, 175, 187, 188, 202–3
- modes 6, 37, 55, 65–70, 73, 136, 176–7
- monomodal communication 25, 41
- Moodle 133, 214
- mores 205
- motivation 33, 39, 53–4, 167, 192, 193
- multilingualism 196
- multiliteracies 63–5
- multimedia 65, 187
- multimodal communication 16t, 25–6, 47, 50
- multimodal e-citizens 52
- multimodal learning 41–2, 50–2
- multimodal productions of learning 30
- multimodal texts 50–1
- multimodal/digital theses 216
- multimodality
  - examples 66–8
  - new literacies 63–5
- multiple memberships 49, 58–9

## N

- names, using 139
- National Telecommunications and Information Administration (NTIA) reports 180
- Native Americans 193
- near converts 184
- net-based learning 47, 53
- network analysis 156
- network learning 32, 33
- networked individualism 49, 61, 158



- new discourses 71, 177, 224
  - new literacies 7, 63–5
  - New London Group 63–5
  - new media 12–27, 136
  - new technologies 75
  - New York University 222–3
  - niches
    - e-learning environment 149–50
    - see also* diversity of niches
  - non-formal learning 18
  - non-institutional research 221–3
  - non-users 60, 184–6
  - norms
    - communication 121
    - community 110, 111, 115, 119, 122
    - exclusion due to unfamiliarity with 195
    - online self-disclosure 23
  - not-learning 39
  - notebook computers 152
- O
- off-topic conversation 92
  - on-topic academic discourse 92
  - online information 6–7, 20, 181–2
  - online interaction 112
  - online journals 196
  - online lectures 97
  - online practices 7, 122–3
  - online profiles 15t
  - online trolls 195
  - online universities 148–9, 151
  - ontological being 36f
  - open access 45, 52, 93, 100–1, 218
  - open courseware 45, 100, 131
  - open forums 98
  - open learning 45
  - open sites 150
  - open source 131, 133, 218
  - Open University (Israel) 4–5
  - Open University (UK) 133–5
  - operating systems 88
  - organizational learning 32
  - over-participation 196
  - 'over-the-shoulder' learning 72
  - ownership of computers 181
  - ownership of learning 77
  - ownership of materials 99–100
- P
- paradigms, dominant 34
  - participation divides, bridging (case study) 197–9
  - participatory action research 202, 215
  - participatory cultures 3, 49, 78, 81–108, 186
  - participatory design 132
  - participatory environments 106–7
  - participatory learning 168
  - participatory literacies 106–7
  - participatory media 90–3
  - passivity 192, 193
  - patchworking/patchwriting (case study) 171–2
  - pedagogical frames 36–7
  - peer evaluation 94
  - peer interaction 94
  - peer production 78–9
  - permanently beta 87
  - permissive systems 131
  - perpetual beta 87, 119, 169, 173, 215
  - persistent communication 16t, 22–3, 92–3, 130
  - personal activity systems 159
  - personal communities 116, 158
  - personal disclosures 23, 139
  - personal ecologies 157–9
  - personal learning 30–1
  - personal learning plans 78
  - personal networks 157
  - personal resources, access to during class 96
  - personality, text-based communication 21
  - photoblogging 90
  - physical classrooms 21, 95
  - physical disability 180
  - physical distance 174
  - physical language 37
  - physical settings, as technologies 155
  - political aspects, of learning 28, 34–5, 131
  - pooled interdependence 16t
  - populations of species 145, 151
  - position (learner) 72
  - post and response 19–20, 24, 92, 99
  - see also* web posting
  - power 34, 78, 131
  - practices
    - co-construction 174
    - technology and 155
    - see also* sociotechnical perspectives
    - see also* communities of practice; information practices; learning practices; migratory practices; online practices
  - pragmatic technologies 132
  - pre-internet stage, information technology 88
  - prescriptive systems 131
  - preservation, online conversations 93
  - Presidential Committee on Information Literacy (ALA) 102, 105–6
  - privacy 23, 94
  - pro-innovation bias 81, 185
  - procedural knowledge 169
  - producers 145
  - productions of learning 30, 52
  - see also* collaborative production; peer production
  - proto-designs (research) 215
  - psychological process, of learning 28
  - public assemblies 155, 156
  - purposive information gatherer 165
- Q
- Québec University 113–14
  - question and answer 19–20, 24, 92
  - questions (e-learning research) 209–10, 211–13
- R
- race 13, 182, 184, 185, 186t, 193
  - rapid communication 15t, 20–1
  - re-framing 33, 36, 43, 79
  - Re-framing Literacy* 74
  - re-mixes 78
  - readiness to learn 39
  - reading, multi-modal texts 50–1
  - reality, social construction of 38, 155
  - reciprocal co-evolution 46, 52, 75–7, 145
  - reciprocal determinism 38
  - reciprocity 117
  - reflective observation 130
  - refreezing 173
  - relational basis, for community 123
  - relationships
    - changes in 49, 59, 97–106
    - see also* social relationships; symbiotic relationships
  - remediation 41–2, 50, 52
  - research
    - in educational informatics 128
    - see also* e-learning research
  - resistance 130–1, 185, 187, 216

## resources

- access to *see* access issues
- availability 1
- ecology of 144, 159
- range and evaluation 20
- see also* teaching materials
- respect 192
- responsibility, for learning 4, 50, 78
- rhetorical communities 33
- rhetorical production of learning 30, 35
- risk-taking 38–9

## S

- safe space 92, 119
- SAGE Handbook of E-Learning Research* 45, 56–7, 208, 210
- salon e-learners 19
- school access, in US 184
- Science in Action* 169
- screens 14, 26, 72, 73, 193
- Second Life 90, 93, 136
- self-assessment 40
- self-directed learning 3, 18, 77, 81, 159
- self-disclosure 23, 117, 139
- self-motivation 193
- self-organizing communities 118
- self-presentation (online) 23
- semiotic systems 30
- sense-making 30, 51
- sensitivity, cultural 193, 197
- sequential logic 24
- sequential ordered messages 23–4
- serendipitous e-learners 19
- serendipitous learning (case study) 153
- serial contributions 89
- serial posting 167
- Seven Pillars of Information Literacy 104
- shared community focus 122
- shared experiences, communal bonds 121
- shared history 17
- short message text (SMS) 92
- shorthands, visual 26
- signature lines 21
- signifiers 52
- signs 30, 31, 32, 51
- simulations 136
- sites for learning 47
- situated practices 170–2
- situative perspective 170
- Six Core Standards (information literacy) 105
- skills 82
- Skype 221
- smartphones 75, 187
- social affordances 14
- social aspects, of learning 28, 31–4
- social bonds 120–1
- social capital 32, 33–4, 48, 111, 116, 117
- social class 185–6, 194
- social cognition 31
- social computing 137
- social construction, of reality 38, 155
- social constructionism 55
- social context, New London Group literacies model 64
- social determinists 131
- social dynamics of innovation 220
- social frames 73
- social informatics 54–5, 60, 127–8, 155
- social interaction 14, 31, 32, 54, 75, 148
- social life, of information 144
- social media 99, 131, 163
- social network perspectives 48, 55, 116–18

- social networking 14, 20, 68–70, 107
- social networking sites 23, 82, 90, 115
- social networks 77, 123
- social practices, and technology *see* socio-technical perspectives
- social presence 112, 139
- social processes 129–35
- social relationships 51, 157–8
- social semiotics 31, 32, 47, 51–2, 75
- social structures, use and re-enactment of 155
- social ties 116–18, 119, 157
- social view 225
- social worlds 158–9
- socially situated learning 31, 47, 61
- society
  - discourse view of learning 74–5
  - of e-learners 159
- socio-constructivism 48
- socio-economics
  - Internet access and use 184, 185–6
  - online information 181–2
  - technological innovation 188
- sociotechnical assemblies 155
- sociotechnical capital 33, 168
- sociotechnical landscape, learning 'to be' in a 169–73
- sociotechnical perspectives 2, 77, 125–42
- software product versions 87
- South Korea, e-learning in HE 203–5, 214
- space *see* learning space; safe space; third spaces; virtual space
- specialists 145, 149
- species
  - e-learning environment 148–9
  - see also* diversity of species; populations of species
- spiritual function, of learning 31
- spreadsheets, for modelling (case study) 133–5
- stacks 24–5
- standard attributes 88
- status, signalling 98
- still images 25
- 'stream of continuous attention' 176, 177
- strong ties 116–17, 157
- structuration 38, 173
- style, in text-based communication 21–2
- summative assessment 40
- symbiosis 46, 75–6
- symbiotic relationships 46, 145, 149
- symbolic frames 73

## T

- task-technology fit 131–5
- teacher authority 83, 96–100, 192, 207
- teacher presence 112
- teacher-centred pedagogy 166
- teaching materials 99–100
- technical issues, in research 221
- technological determinists 131
- technological development, new learning paradigm 207
- technology(ies)
  - adaptation to local contexts 201–2
  - adaptive structuration 38
  - being up to date with 187
  - building of weak ties 117
  - choice(s) 125–6
  - e-learning ecologies 153–7
  - ecological view of 144
  - freezing and unfreezing 174
  - infrastructures, invisibility of 156
  - mobile learning 74–5
  - of participation 84–7



- technology(ies) *cont.*
  - and practices 155
    - see also* sociotechnical perspectives
  - resistance to 185
  - specialists 149
  - use *see* use
  - see also* information technology; waves of technology
- technology support 144
- technology-based meetings 126
- technology-enabled conversations 126
- technology-enhanced learning 46
- technology-in-use 129, 135, 167
- teleconferencing 49
- teleworkers 175
- terminology 7–8, 65
- text(s)
  - challenge to authoritative 1
  - digitization 61
  - and learning 41–3
  - separation from day-to-day experiences 73
  - transformation and reading of multi-modal 50–1
- text-based communication 16t, 21–2
- text-based online conversation 91–2
- text-only communication 15t, 94
- texting 94
- third spaces 115
- threshold concept 164
- Throwing the Virtual Dice (case study) 133–5
- ties (social) 116–18, 119, 157
- tight coupling 147
- time management 19
- time-sharing systems 88
- transactional distance 49–50, 51, 61, 192
- transactive memory 111, 172
- transcripts, persistent communication 22, 130
- transduction 41, 42, 50, 52, 59, 62
- transformation 29–35, 37, 42, 43, 49, 50–1, 52, 165
- transmission model, of education 200
- trust 17, 119, 138
- tweets 161
- Twitter 20, 24, 89, 94, 99, 115
- U
- ubicomp 161
- ubiquitous computing 84, 161
  - case study 162
  - infrastructures 161–2
- ubiquitous e-learners
  - becoming 163–5
  - economics of attention 176–7
  - what they learn 167–76
  - who they are 165–7
- ubiquitous learners 19
- ubiquitous learning 18, 19, 54, 161, 162–3
- ubiquitous research 221
- UKeU 149
- unbundling, of message from cues 13
- uncanny/uncanniness 164
- uncertainty 169, 172
- understanding 42
- unfreezing 173, 174
- United Kingdom, access and use issues 185
- United Nations World Summit on the Information Society 181
- United States, access and use issues 184, 185, 186t, 200
- University of Illinois 162
- University of Maryland 68–70
- University of Naples 100–1
- updating 14, 20
- URLs 89
- use
  - access distinguished from 60
  - and distances 174
  - Internet 180, 183, 184–6
  - re-enactment of social structures 155
  - see also* delayed use; technology-in-use
- user resistance 130–1
- user-centred computing 132
- V
- value, in teaching materials 99–100
- verbal communication 24, 25
- verbal language 37, 71, 73
- verbal mode 66
- verbal written text 51
- versions (software) 87
- video cameras 218
- video connections 126
- video sharing 150
- videoconferencing 126, 136
- virtual communities 106, 109
- virtual learning environments (VLEs) 72, 73, 115
  - affordances 214
  - disadvantage of 79
  - ecological perspective 144
  - learning ecology 220
  - multimodality 66–7
  - use of term 8
- virtual space 47
- virtual worlds 25, 94–5, 137, 210
- visibility of learners 99
- visual mode 67
- visual shorthands 26
- W
- waves of technology 188–9
- weak ties 116, 117
- Web 1.0 87, 88–9, 93
- Web 2.0 82, 87, 89–90, 93–4
- Web 3.0 90
- web browsers 89
- web pages 26, 89, 115
- web portals 107
- web posting 7, 16t, 17, 85, 89, 150
  - see also* post and response; self-disclosure
- web presence 89, 93
- web surfers 19, 166
- web surfing 95
- webmaster role 89
- webquests 25
- websites, personal 159
- Western hegemony 205
- 'whisper' function 121
- Wikipedia 90, 150
- wikis 16t, 24, 89, 90, 92, 93, 163, 210
- willing learner 165
- Winchester University 86–7
- 'work for hire' agreements 100
- work-in-progress, community as 122
- workarounds 25
- World Wide Web 89, 189
- world-wide participation, in education 94
- written communication 24, 25
- X
- XML 89, 130
- Y
- YouTube 89, 150