



Index

- AARP *see* American Association of Retired People
- ABCD *see* asset-based community development
- abstract data sonification 149–51
- accessibility
- Alzheimer's disease 359, 383
 - Census Bureau 518–20, 525–41, 548–52
 - community 589–96
 - empowerment 594–6
 - future directions 587–98
 - individual communication 589–92
 - low-income communities 506–7
 - navigation 534–5, 536–7
 - sociability 592, 597
 - spinal cord injuries 413
 - testing 521–2, 527, 529–30, 541, 545–7
 - time/space matrix 590–1
 - universal 49
- ACM *see* Association for Computing Machinery
- Action-by-Design-Component (ADC) 153, 164, 165
- active participation 379–80, 384
- ADA *see* Americans with Disabilities Act
- ADC *see* Action-by-Design-Component
- advertising 80
- aesthetic-usability effect 313
- African American Health Collation 506
- Agency for Healthcare Research and Quality (AHRQ) 493–4
- Agile views framework 98
- aging *see* senior-focused design
- AHA *see* Auditory HTML Access
- AHRQ *see* Agency for Healthcare Research and Quality
- AIR *see* auditory interaction realm
- A.K.A. New Media *see* Web Fun Central
- alphabetization 579
- alternative text
- blind users 96, 111–12, 115
 - Census Bureau 529–30, 535, 546–7, 550
 - graphics 7
 - screen readers 178, 183, 187
 - scripting 7
 - senior-focused design 65
- Alzheimer's disease 10, 301, 357–87
- accessibility 359, 383
 - active participation 379–80, 384
 - appropriateness testing 374–7
 - challenges 358–9
 - characteristics 357, 358, 359–61
 - design implications 377–81, 382–3
 - evaluation standards 383
 - families 363, 364–5, 367–72, 381
 - future directions 381–2
 - game playing 365–6
 - implications 382–3
 - interventions 358, 361–5
 - moderated ethnographic research 365
 - multimedia 357–8, 363–4, 368, 370, 372, 374–84
 - navigation 372
 - participatory design 365, 368–71, 377, 379–81
 - prevalence 359–60
 - reminiscence 359, 361–3, 376
 - stakeholder needs 359, 372, 380–1
- storytelling 357–8, 361–2, 364–7, 374–7
- usability testing 374–7
- VHS pilot study 358, 362, 364
- working memory 358
- AMA *see* applied behavior analysis
- Amazon.com 593
- American Association of Retired People (AARP) 70
- American Diabetes Association 501–4, 507
- American Heart Association 500–5
- American Life Project 46
- American Memory project 563
- American Psychological Association (APA) 53
- American Spinal Cord Injury Association (ASIA) 400
- Americans with Disabilities Act (ADA) 595
- amnesia *see* anterograde amnesia
- anchor-based navigation 406–9, 410–11
- Anderson Windows and Doors 3–5
- animated text 68
- animations
- blind users 114–15, 183
 - Down Syndrome 213, 225, 226, 228
- anterograde amnesia 10, 317–56
- characteristics 317–18, 320–6
 - disorientation 318–19, 324–6, 334, 338–9
 - documentation 336–8
 - environmental support 332–4
 - external aids 323–4, 326–8
 - families 322–3
 - field study 319–26
 - future directions 352–3
 - implications 351–2
 - object misplacement 320, 324

- anterograde amnesia (*Continued*)
 OrientingTool 318–19, 327, 337–52
 paper-based tools 324, 326–7
 participatory design 318–19, 328–38, 351–2
 personal digital assistants 319–20, 322, 324, 328, 337–52
 physical artifacts 335–6
 procedural memory 341–3
 self-confidence 349, 351
 structure and routine 323, 325, 331–2
 temporal sequencing 333
 usability testing 319
 anthologies *see* digital libraries
 APA *see* American Psychological Association
 aphasia 329
 applied behavior analysis (ABA) 263, 267–8, 270–2, 290
 appropriateness testing 374–7
 arrow keys 126–7
 ArsDigita Corporation 460, 466
 arthritis 422
 ASD *see* autism spectrum disorder
 ASIA *see* American Spinal Cord Injury Association
 Ask for Kids 13
 Asperger syndrome 233, 235, 240, 249, 251–6
 asset-based community development (ABCD) 461–2, 470–2
 asset–mobilization 472–3
 Assistive Technology for Cognition (ATC) 362–3, 366
 Association for Computing Machinery (ACM) 1, 8
 ATC *see* Assistive Technology for Cognition
 audio-based interfaces 104, 127
 Audiobrowser 97
 auditory feedback 147, 154–5, 162
 Auditory HTML Access (AHA) system 97
 auditory interaction realm (AIR) 98
 auditory perception, choropleth maps 147–9
 Aurora project 240, 242
 authoritative virtual peers *see* virtual peer technology
- autism spectrum disorder (ASD) 10, 231–62
 applied behavior analysis 263, 267–8, 270–2, 290
 characteristics 232–4, 263–5
 computer-assisted instruction 263, 268–90
 evidence-based instruction 263, 265–8
 generalization 272–3, 278, 280–2, 285–9
 guidelines 241–2
 imagination 231–2, 233, 242
 interventions 236–9, 241–2, 265–8
 joint attention 234, 235, 264
 language skills 231–3, 244–6, 248–9, 268–9, 283–4
 narrative ability 238–9, 245, 254–6
 peer partnerships 237
 pictorial interventions 238–9
 Play and Tell 231–2, 246–56
 prevalence 234–5, 265
 public policy 289–90
 role-play 236–7, 242, 252–3
 social interactions 231–9, 241–2, 247–8, 251–6, 264, 282–4
 specific user populations 2
 storytelling 231, 238–40, 243, 244–8, 250–6
 TeachTown 268, 269, 270–90
 technology 239–42
 training programs 237–8
 turn-taking 238, 240, 242, 251–2
 virtual peer technology 231–2, 242–58
 automatic sequencing 151
- baby boomers 47
 backtracking 16–17, 107
 backwards compatibility 582
 barriers to functionality
 blind users 96
 senior-focused design 62, 63, 71–2
 base language 571
 BATS project 147
 Baycrest Center 320, 323–4, 326–7, 330–8, 358, 366
 biometric input devices 396
- Black Family Technology Week 473
 BlackWomensHealth 506
 blind users 9–10
 accessibility problems 95–6, 111–12
 arrow keys 126–7
 audio-based interfaces 104, 127
 automated solutions 97–8
 barriers to functionality 96
 browsing strategies 99, 113–25, 129–30
 Census Bureau 524–7, 530, 536–40, 546–7, 549–52
 compensation model 94
 demographics 182
 design implications 135
 emotional impacts 185–6, 188
 empowerment 133
 focus areas 132–4
 frustrations experienced 180, 182–6, 187
 guidance 133
 Internet use 110–11
 learning phase 129–32
 locomotion ability 148–9
 manual solutions 96–7, 98
 models 94, 99–101
 NavAccess prototype 104–29
 navigation 93–139
 numeric pad 126
 problem statement 103–4
 public policy 136
 research implications 135–6
 separate navigation 126
 solutions to frustrations 184–5, 187–8
 theoretical background 93–103
 time loss 186–7
 tool requirements 102–3
 travel/mobility framework 99–101
 user evaluation studies 107–8
 user implications 136
 virtual communities 119–21
see also screen readers
- blogs 587, 593
 BookHouse interface 20
 Boolean searches 18–19, 22, 29
 Braille
 literacy levels 142, 176
 nonvisual map access 145–6

- public policy 182
- refreshable displays 94–5, 109, 111, 114, 119, 122–4
- brain injury *see* anterograde amnesia
- brightness 68
- browsing
 - blind users 99, 113–25
 - children 13–42
 - see also* category browsing
- brushing 158–9
- bulletin boards 593
- Bureau of Labour Statistics 48
- buttons 214
- C3 Project *see* Creating Community Connections Project
- CAI *see* computer-assisted instruction
- Camfield Estates–MIT project *see* Creating Community Connections Project
- Camfield Tenants Association (CTA) 458, 459, 482–4
- The Campbell Family Institute for Breast Cancer Research 196
- capacity-building 482–3
- Caring for Others (CFO) 363
- category browsing
 - Boolean searches 18–19, 22, 29
 - children 15–19, 20, 22–3, 28–9
 - hierarchies 16–18, 20, 22, 29
 - structure and presentation 16–17, 22, 31–2
- CBOs *see* community-based organizations
- CCIs *see* comprehensive community initiatives
- CCNA *see* Cisco Certified Network Associates
- CDS/ISIS databases 582
- cell phones 589
- Census Bureau 11, 517–58
 - accessibility 518–20, 525–41, 548–52
 - accessibility testing 521–2, 527, 529–30, 541, 545–7
 - authentication 525, 529, 530–2, 545, 549
 - data collection 517–58
 - design alternatives 542–4
 - design implications 550
 - edit messages 538–40, 545
 - facilities and equipment 526–7
 - Federal Regulations 529–30, 548
 - frustrations 523–4
 - future plans 548–9
 - labels 535–6
 - literature review 518–20
 - materials 528
 - navigation 534–5, 536–7
 - obstacles 522–3
 - procedure 528–9
 - public policy 551–2
 - recruitment 526
 - research implications 550–1
 - results 530–48
 - senior-focused design 45
 - submitting data 541
 - target population 520–1
 - usability testing 521–2, 525–9, 533, 541–5, 549–52
 - user implications 549–50
 - user-interface prototypes 528
 - visual impairment 178, 524–7, 530, 536–40, 546–7, 549–52
- Census Identification Number (CIN) 529, 530–2, 545, 549
- Center for Reflective Community Practice (CRCP) 481
- central oversight with local empowerment (COLE) 578
- cerebral palsy (CP) 421, 422, 425, 429–32, 435–9
- cerebrovascular disease 359
- CEW *see* computer–email–web fluency scale
- CFO *see* Caring for Others
- character design 251
- checkboxes 536–7, 547
- children 3, 13–42
 - accessibility 595
 - blind users 94
 - category browsing 15–19, 20, 22–3, 28–9
 - design considerations 13–14, 35
 - information processing 13, 14–15, 27–8
 - International Children’s Digital Library 9, 14, 21–36, 570
 - keyword searching 15–16, 22, 28
 - motor skills 13, 14–15, 27–8
 - prototyping 24–6
 - public policy 36
 - research implications 36
 - searching and browsing software 13–42
 - selection criteria 14, 19–20, 30
 - target size 13, 14
 - text entry 15–16, 18–19
 - usability testing 26
 - user implications 35
- Children’s Books Online 21
- choropleth maps 141–73
 - auditory perception 147–9
 - geo-referenced data exploration 160–2
 - iSonic 143, 153–65
 - nonspeech sound 142, 143–5
 - nonvisual map access 145–7
 - pattern recognition 160–2
 - sonification 142, 149–52
- CIN *see* Census Identification Number
- CIRCA *see* Computer Interactive Reminiscence and Conversation Aid
- Cisco Certified Network Associates (CCNA) 473
- CITIDEL project 570
- click-and-drag 207–8, 210, 220–1
- client-side processing 540
- cognitive abilities 45
- cognitive load
 - blind users 106, 133–4
 - data collection 524
 - senior-focused design 57–8
 - spinal cord injuries 390
- COLE *see* central oversight with local empowerment
- collection development 33–4
- collective power 591, 595
- color
 - preferences 213
 - senior-focused design 65, 66, 68–9
- combo boxes 124
- Comic Strip Conversations 238
- community
 - accessibility 589–96
 - building 458, 460–1, 470–2
 - collective power 591, 595
 - content 458, 460–1
 - cultural capital 463–4, 477–81
 - design 458

- community (*Continued*)
 empowerment 594–6
 networks 458, 460
 social capital 463–4, 477
 software 11
 technology 458, 460–1, 466–70
see also community-based
 participatory research;
 low-income communities
- community-based organizations
 (CBOs) 484
- Community Connections 11
- community technology centers
 (CTCs) 458, 460–1, 484
- community-based participatory
 research 491–516
- computer–email–web fluency
 scale 499–505
- design implications 508
- evaluation 498, 500, 510–13
- health care disparities 491–516
- project benefits 496–9
- project development 494–5
- public policy 509
- related research 495–6
- research implications 509
- results 505–8
- user implications 508–9
- user population 495
- compensation model 94
- comprehensive community
 initiatives (CCIs) 458
- Computer Interactive Reminiscence
 and Conversation Aid
 (CIRCA) 308–12, 363–4
- computer literacy
 accessibility 588
- low-income communities 480,
 499–505
- senior-focused design 49, 50,
 75–81
- computer-assisted instruction (CAI)
 autism spectrum disorder 263,
 268–90
- design implications 285–7
- public policy 289–90
- research implications 287–8
- TeachTown 268, 269, 270–85
- user implications 288–9
- computer–email–web (CEW) fluency
 scale 499–505
- confidence-building 81–4
- confidentiality 520
- configurable software 70
- conjunction 18, 22, 29
- consistent design
 blind users 103, 112, 125
 senior-focused design 55, 78–9
- constructionism, sociocultural 461,
 462–3, 472–3
- context-dependent titles 112
- contextual inquiry 24, 377
- continuous navigation 410
- contrasts 68
- conversations 302–3
- cooperative inquiry 24
- CP *see* cerebral palsy
- CRCP *see* Center for Reflective
 Community Practice
- Creating Community Connections
 (C3) Project 457–90
- asset-based community
 development 461–2, 470–2
- community
 building 458, 460–1, 470–2
 cultural capital 463–4,
 477–81
 social capital 463–4, 477
 technology 458, 460–1,
 466–70
- current status 481
- demographics 474–7
- design implications 482–3
- history 459–60
- methodology 464–74
- post-assessment and evaluation
 473–4
- pre-assessment and awareness
 464–6
- public policy 482–3, 485–6
- research implications 482–3, 485
- results 474–81
- sociocultural constructionism
 461, 462–3, 472–3
- theoretical framework 461–4
- timeline 465
- user implications 483–4
- credibility 54–5
- CTA *see* Camfield Tenants
 Association
- CTCs *see* community technology
 centers
- cultural capital 463–4, 477–81
- cultural constructionism 463
- curb cuts 3
- customer services 56
- DAHNI *see* Demonstrator of the
 Access Hypermedia
 Non-visual Interface
- data analysis 413–14
- data collection
 accessibility 518–20, 525–41,
 548–52
- accessibility testing 521–2, 527,
 529–30, 541, 545–7
- Census Bureau 517–58
- design alternatives 542–4
- design implications 550
- edit messages 538–40, 545
- facilities and equipment 526–7
- Federal Regulations 529–30, 548
- frustrations 523–4
- future plans 548–9
- labels 535–6
- literature review 518–20
- materials 528
- navigation 534–5, 536–7
- obstacles 522–3
- procedure 528–9
- public policy 551–2
- recruitment 526
- research implications 550–1
- results 530–48
- submitting data 541
- target population 520–1
- usability testing 521–2, 525–9,
 533, 541–5, 549–52
- user implications 549–50
- user-interface prototypes 528
- visual impairment 524–7, 530,
 536–40, 546–7, 549–52
- data-entry fields 535–6, 547, 552
- data sonification 142, 149–52
- abstract 149–51
- interaction 151–2
- iSonic 143, 153–65
- scientific 149
- screen readers 177
- data views 154
- decontextualized language 245,
 249
- default language 569, 575
- Del.icio.us 589, 592
- Delicious Decisions 500–2
- dementia 10, 299–316

- characteristics 301–2, 307–8
- communication 301–7
- hypermedia reminiscence-based
 - support 299, 301–13
- interface design 299–301, 304–5, 312–13
- long-term memory 305–6, 310
- media content 305–6
- navigation 305
- on-screen controls 312
- prevalence 301, 307–8
- prototype development 304
- public policy 313
- touchscreens 303–4, 306, 312
- usability testing 307–11
- working memory 299–301
 - see also* Alzheimer's disease
- demonstrations 214
- Demonstrator of the Access
 - Hypermedia Non-visual Interface (DAHNI) 97
- Department of Commerce 48
- Department of Health and Human Services (USDHHS) 491–3
- depth/breadth ratio 17
- details on demand 158
- device-dependent alternative text 7
- DHHS *see* Department of Health and Human Services
- digital divide 457
- digital libraries 9, 11, 559–86
 - alphabetization 579
 - base language 571
 - challenges 560–1
 - children 13, 19–36
 - customization 568, 573, 579, 583
 - default language 569, 575
 - design implications 578–9
 - evaluation 576–7
 - future directions 582–3
 - global 560–1
 - Greenstone 559–60, 561–2, 564–84
 - internationalization 559–62, 564, 567–70, 574
 - librarians/anthologists 559, 562, 567
 - localization 559–60, 570–8, 579–80
 - log analysis 574–5
 - public policy 579–81
 - readers 559, 562
 - related work 562–4
 - research implications 581–2
 - technicians 559, 561, 567
 - training 575–7, 580–1
 - translators 560, 561, 567, 570–3
 - user base 565
 - user implications 577–8
- direction-based navigation 10, 399–406, 410–11
- discernibility 64–9
- discrete trial training (DTT) 266–7, 269–70
- discrimination 53
- disjunction 18, 29
- disorientation
 - Alzheimer's disease 360
 - anterograde amnesia 318–19, 324–6, 334, 338–9
- distractions 80
- Document Object Model (DOM)
 - structure 95
- documentation 336–8
- DOM *see* Document Object Model
- Down Syndrome 3, 10
 - accessibility 595
 - characteristics 198
 - computer-assisted instruction 281–5
 - learning strategies 199–200, 202, 227
 - motor skills 207–8, 220–1
 - navigation 210–11, 221–3
 - personal growth 226
 - preferences 205–6, 208–9, 212–15
 - surfing and browsing 208, 219–20
 - task completion 206–8
 - Web Fun Central 195–230
 - windows 209–10
- downloads 64, 79
- drag-and-drop interaction 14–15
- Dragon recognition systems 397–8, 444–5
- drop-down menus 72
- DSpace 563–4
- DTT *see* discrete trial training
- dynamic feedback 519
- economically disadvantaged users
 - see* low-income communities
- EdgeWrite 11, 425–51
 - alphabet 428–9
 - extended use 440–4
 - implications 449–51
 - joysticks 425, 427, 429–31, 434–44, 449–51
 - learning rates 443–4
 - methodology 425–6
 - novice use 434–9
 - on-screen keyboards 425, 427, 434–44, 445
 - participatory design 444–9
 - personal digital assistants 425, 427–9
 - related research 426–7
 - touchpads 425, 427, 431–2, 434–44, 450–1
 - trackballs 425, 427, 432–4, 444–51
 - uncorrected errors 436–7
- edit messages 538–40, 545
- electrophysiological solutions 395–6
- elementary-age children
 - see* children
- email
 - accessibility 587, 589
 - autism spectrum disorder 279–80
 - blind users 110
 - senior-focused design 47
- embedded
 - content 96, 103, 112
 - functionality 97, 106
- empowerment
 - blind users 133
 - community 594–6
 - digital libraries 561, 578
 - evaluation 498
 - senior-focused design 52, 57–64
- ERICA program 195
- errors
 - gestural text entry 436–7
 - management 81–2
 - messages 519
 - prevention 82–3
 - recovery 83
 - senior-focused design 81–3
 - spinal cord injuries 389–91, 397–8, 400–1, 414
 - typographical 572–3

- ethnography
 - accessibility 593
 - Alzheimer's disease 365, 377
- evidence-based instruction 263, 265–8
- Excel 163–4
- expectations 72–3
- external memories 101, 102
- eye-controlled interaction 395

- facets 16–17, 22, 31–2
- families
 - Alzheimer's disease 363, 364–5, 367–72, 381
 - anterograde amnesia 322–3
- FastForWord 270
- Federal Regulations 529–30, 548
- Fedora 563–4
- filtered content 103
- finger dexterity 6
- First Aid in Pictures collection 574
- Fitt's Law 14
- Flash animations
 - blind users 114–15, 183
 - Down Syndrome 225, 228
- flat world notion 590
- Flickr 589, 592
- fly-out menus 72
- fonts
 - selection 212
 - size 66
- forms 112, 120, 123–5, 183, 187
 - see also* Census Bureau
- frames 113–14, 124
- fuzzy information retrieval 303

- galvanic skin response (GSR) 396
- game playing 365–6
- gaps in user knowledge 1
- general asset-mapping 470–2
- generalization 272–3, 278, 280–2, 285–9
- geo-referenced data exploration 160–2
- gestural text entry
 - design implications 449–50
 - EdgeWrite 425–51
 - extended use 440–4
 - joysticks 421–5, 427, 429–31, 434–44, 449–51
 - learning rates 443–4
 - methodology 424–6
 - motor skills 421–56
 - novice use 434–9
 - on-screen keyboards 423, 425, 427, 434–44, 445–8
 - participatory design 426, 444–9
 - personal digital assistants 425, 427–9
 - public policy 451
 - related research 426–7
 - research implications 450–1
 - standard keyboard and mouse 421–2
 - touchpads 421–5, 427, 431–2, 434–44, 450–1
 - trackballs 421, 424–5, 427, 432–4, 444–51
 - uncorrected errors 436–7
 - user implications 449
- gists 155–6
- global digital libraries 560–1
- Google 587–8, 594, 596
- Graffiti 427–9
- graphics
 - alternative text 7
 - preferences 213, 227
 - senior-focused design 65
 - widgets 15
- gravity wells 393–4
- Greenstone 11, 564–84
 - alphabetization 579
 - base language 571
 - customization 568, 573, 579, 583
 - default language 569, 575
 - design implications 578–9
 - evaluation 576–7
 - function 564–7
 - future directions 582–3
 - internationalization 559–60, 567–70, 574
 - localization 559–60, 570–8, 579–80
 - log analysis 574–5
 - origins 561–2
 - public policy 579–81
 - research implications 581–2
 - training 575–7, 580–1
 - translators 560, 561, 567, 570–3
 - user base 565
 - user implications 577–8
- grid-based navigation 409, 410–11
- GSR *see* galvanic skin response
- guidance 133

- hand splints 393
- hands-free speech-based navigation
 - model 410–11
- handsticks 397
- handwriting recognition 424–5
- haptic feedback
 - gestural text entry 431
 - spinal cord injuries 390
 - visual impairment 147
- hard power diplomacy 591–2
- Head Related Transfer Function (HRTF) 144–5, 155, 165
- head-controlled interaction 393, 394
- Headsprout 270
- health care disparities 491–516
 - community-based participatory research 491–516
 - computer–email–web fluency scale 499–505
 - design implications 508
 - project benefits 496–9
 - project development 494–5
 - public policy 509
 - related research 495–6
 - research implications 509
 - results 505–8
 - user implications 508–9
 - user population 495
- hearing impairment 45, 64, 74
- help links 533, 543
- helpfulness 56, 83–4
- Hewlett-Packard Company 460, 486
- hierarchies 16–18, 20, 22, 29
- Home Page Reader 98
- Housing and Urban Development (HUD) Department 459–60, 481, 483, 486, 494
- HRTF *see* Head Related Transfer Function
- HUD *see* Housing and Urban Development
- Human Info NGO 561–2, 581
- Huntington's disease 359
- hypermedia reminiscence-based support 299, 301–13
 - interface design 304–5, 312–13
 - long-term memory 305–6, 310

- media content 305–6
- prototype development 304
- touchscreens 303–4, 306, 312
- usability testing 307–11
- Hyperspeech 97, 102–3
- iAAEC *see* Institute for African-American eCulture
- ICDL *see* International Children's Digital Library
- iconographic displays 149–52
- IM *see* instant messaging
- imagination 231–2, 233, 242
- in-page jumping 116, 118–19, 121
- individualism 589–92, 595
- information
 - channels 477, 479–80
 - processing 13, 14–15, 27–8
- information architecture *see* navigation
- InSight/InFocus 525, 545
- instant messaging (IM) 589, 593
- Institute for African-American eCulture (iAAEC) 460
- instructional demonstrations 214
- instructional technologies *see* learning tools
- interactive sonification *see* iSonic
- interface design research 31–3
- internal model 99
- International Children's Digital Library (ICDL) 9, 14, 21–36
 - background 21–2
 - collection development 33–4
 - future directions 30–5
 - interface design research 31–3
 - International research 34–5
 - research team and methods 23–6
 - selection criteria 19–20
 - system overview 22–3
 - translation 570
- International research 34–5
- internationalization 559–62, 564, 567–70, 574
- isolation 47, 363
- iSonic 9, 143, 153–65
 - auditory feedback 154–5, 162
 - brushing 158–9
 - case studies 162–5
 - data views 154
 - details on demand 158
 - evaluations 159–65
 - features 153–9
 - future directions 165
 - geo-referenced data exploration 160–2
 - gists 155–6
 - implementation 159
 - input devices 154
 - navigation 154, 156–8
 - pattern recognition 160–2
 - selection 158
 - situate feature 158
- jargon *see* vocabularies
- JavaScript 113, 183, 529–30
- joint attention 234, 235, 264
- joysticks 11, 421–5, 427, 429–31, 434–44, 449–51
- keyboards
 - motor skills 421–2
 - on-screen 423, 425, 427, 434–48
 - shortcuts 113–25
 - skills 46
 - spinal cord injuries 390, 392–4, 397
- keyword searching
 - blind users 130
 - children 15–16, 22, 28
- labels
 - Census Bureau 535–6
 - senior-focused design 78
- landmarks
 - anterograde amnesia 326
 - blind users 118, 123, 130
- language barriers 519
- language skills
 - accessibility 588
 - autism spectrum disorder 231–3, 244–6, 248–9, 268–9, 283–4
 - participatory design 329
- large-print format 182
- Laureate 270
- learning
 - autism spectrum disorder 231–2, 242–58
 - blind users 129–32
 - Down Syndrome 199–200, 202, 227
 - visual 202, 227
 - Web Fun Central 195–230
- legibility 66–8
- Lego 236–7, 242
- libraries *see* digital libraries
- Library of Congress 563
- life
 - expectancy 45
 - review therapy 361
 - stories 357–8, 361–2, 364–7, 374–7
- limb loss 390
- links
 - Census Bureau 533, 543
 - context 128, 129
 - screen readers 183, 187
 - separate categories 127, 129
 - title alternatives 106, 112, 115, 127, 129
- list servers 589
- literacy *see* computer literacy; language skills
- localization 559–60, 570–8, 579–80
- locked-in syndrome 390, 395–6
- locomotion ability 148–9
- log analysis 574–5
- long-term memory 305–6, 310
- low-income communities 11, 457–90
 - accessibility 506–7
 - asset-based community development 461–2, 470–2
 - community
 - building 458, 460–1, 470–2
 - cultural capital 463–4, 477–81
 - social capital 463–4, 477
 - technology 458, 460–1, 466–70
 - community-based participatory research 491–516
 - computer–email–web fluency scale 499–505
 - Creating Community Connections Project 457–90
 - demographics 474–7, 495
 - design implications 482–3, 508
 - health care disparities 491–516
 - methodology 464–74
 - post-assessment and evaluation 473–4
 - pre-assessment and awareness 464–6
 - project

- low-income (*Continued*)
 benefits 496–9
 development 494–5
 history 459–60
 status 481
 public policy 482–3, 485–6, 509
 related research 495–6
 research implications 482–3,
 485, 509
 results 505–8
 sociocultural constructionism
 461, 462–3, 472–3
 theoretical framework 461–4
 user implications 483–4, 508–9
 lower case text 67–8
 Lucent Technologies 460
- macro definitions 568–70
 maintenance of websites 2–3
 MAPS-LifeLine 328
 Massachusetts Housing Finance
 Agency (MHFA) 459–60,
 483, 486
 MCI *see* mild cognitive impairment
 MD *see* muscular dystrophy
 Memory-Link program 320,
 323–4, 330–8
 mental model 99
 meta-competence 480–1
 metaphors
 Alzheimer's disease 372
 senior-focused design 77–8
 MHFA *see* Massachusetts Housing
 Finance Agency
 mice 14–15
 motor skills 421–2
 spinal cord injuries 390, 392–4,
 397
 Microsoft Corporation 460, 486
 mild cognitive impairment (MCI)
 382
 mild dementia 307–8
 Mini Mental State Examination
 (MMSE) 308–9
 MMSE *see* Mini Mental State
 Examination
 mobility 4, 100–1
 modal windows 61
 moderate dementia 307–8
 moderated ethnographic research
 365
 motor skills
- children 13, 14–15, 27–8
 design implications 449–50
 Down Syndrome 207–8, 220–1
 EdgeWrite 425–51
 gestural text entry 421–56
 joysticks 421–5, 427, 429–31,
 434–44, 449–51
 on-screen keyboards 423, 425,
 427, 434–44, 445–8
 participatory design 426, 444–9
 personal digital assistants 425,
 427–9
 public policy 451
 research implications 450–1
 senior-focused design 45, 46,
 70–2
 standard keyboard and mouse
 421–2
 touchpads 421–5, 427, 431–2,
 434–44, 450–1
 trackballs 421, 424–5, 427,
 432–4, 444–51
 user implications 449
see also spinal cord injuries
- mouseovers 58, 71, 72–3
 mouthsticks 393
 MS *see* multiple sclerosis
 multilingual software 559–60
 multimedia 357–8, 363–4, 368,
 370, 372, 374–84
 multimodal interaction 73–4
 multiple sclerosis (MS) 394, 425,
 429–31
 multiple user populations 2–3
 multisector collaborations 482–3
 muscular dystrophy (MD)
 421–2, 429
 musical content 143–4, 214
 Myspace 593
 myText 426
- narrative ability 238–9, 245,
 254–6
 National Aeronautics and Space
 Agency (NASA) 3
 National Cancer Institute 3
 National Census Test (NCT) 522,
 526, 530–1, 534, 536–41,
 547
 National Down Syndrome Society
 (NDSS) 195, 196,
 215–17, 225
- National Federation of the Blind
 (NFB) 178–9
 NavAccess prototype 9
 evaluation 126–9
 objectives 104–7
 observations 112–25
 results 126–9
 sample description 108–12
 user evaluation study 107–8
- navigation
 accessibility 534–5, 536–7
 Alzheimer's disease 372
 anchor-based 406–9, 410–11
 blind users 93–139
 Census Bureau 534–5, 536–7
 continuous 410
 dementia 305
 direction-based 399–406,
 410–11
 Down Syndrome 210–11, 221–3
 grid-based 409, 410–11
 iSonic 154, 156–8
 revising 403–6
 screen readers 183, 187
 senior-focused design 59–62
 speech-based technologies 389,
 391, 398–411
 spinal cord injuries 389, 391,
 398–411
 tabs 534–5, 536–7
 target-based 399–406, 410–11
- NCT *see* National Census Test
 NDSS *see* National Down
 Syndrome Society
- Neighbourhood Technology Center
 (NTC) 459, 461, 466,
 472–3, 480–1
- NeuroPage 328
 NFB *see* National Federation of
 the Blind
 Niupepa collection 565–6, 575
 NLD *see* nonverbal learning
 disorder
 nonspeech sound 142, 143–5
 nonverbal learning disorder (NLD)
 233, 235, 250–1
 nonvisual map access 145–7
 notification 64
 NTC *see* Neighbourhood
 Technology Center
 numeric pad 126
 Nurse Managed Health Center 499

- object misplacement 320, 324
- obstacle detection/avoidance 101
- off-computer learning 271, 278–9
- off-site studies 413
- Office of Management and Budget (OMB) 526
- older users *see* dementia; senior-focused design
- OMB *see* Office of Management and Budget
- on-screen
 - controls 312
 - keyboards 423, 425, 427, 434–48
- open-source software 563, 569, 579–82, 590
 - see also* Greenstone
- OptiMaps 145
- OrientingTool 10, 318–19, 327, 337–52
 - acceptance 347–8, 349–50
 - alarm cues 344, 345
 - basic functionality 339–40
 - dependence 345
 - errors 345
 - evaluation 341–9
 - general-purpose tools 350
 - medium-term freeform study 345–9
 - short-duration tasks 348
 - short-term focused study 343–5
 - spontaneous usage 344–6, 348
 - training 341–3, 350
- out of view objects 100
- over-stimulation 366, 368, 374
- Overseas Enumeration Test 538–9
- overviews 103
- page parameters 569
- paper-based tools 324, 326–7
- Parkinson's disease (PD) 359, 421
- participatory design
 - Alzheimer's disease 365, 368–71, 377, 379–81
 - anterograde amnesia 318–19, 328–38, 351–2
 - digital libraries 577
 - documentation 336–8
 - environmental support 332–4
 - gestural text entry 426, 444–9
 - motor skills 426, 444–9
 - physical artifacts 335–6
 - reviewing techniques 332
 - structure 331–2
- participatory research
 - community-based 491–516
 - low-income communities 491–516
- passive participation 379–80
- PAT *see* Play and Tell
- pattern recognition 160–2
- PD *see* Parkinson's disease
- PDAs *see* personal digital assistants
- PDD–NOS *see* pervasive developmental disorder – not otherwise specified
- PDF *see* portable document format
- PECS *see* Picture Exchange Communication System
- peer partnerships 237
- perfectionism 6–7, 8, 579
- person-based applications 536
- personal digital assistants (PDAs)
 - anterograde amnesia 319–20, 322, 324, 328, 337–52
 - general-purpose tools 328, 350
 - gestural text entry 425, 427–9
 - OrientingTool 319, 337–52
- personal growth 226
- personalized welcomes 53
- pervasive developmental disorder – not otherwise specified (PDD–NOS) 233, 249
- Pew Internet 46
- physical impairments *see* motor skills; spinal cord injuries
- Pick's disease 359
- pictorial interventions 238–9
- Picture Exchange Communication System (PECS) 268
- Pittsburgh Pebbles PDA Project 425
- pivotal response training (PRT) 267
- Play and Tell (PAT) 231–2, 246–56
- plug-ins 183
- point-and-click 14–15, 27, 423
- pointer trails 393
- pop-up windows 61, 125, 519
- portable document format (PDF) 183, 187
- previews 103, 106, 112, 127, 129
- The Princess Margaret Hospital Foundation 196
- privacy 54
- probes 368–9
- probing 101
- procedural memory 341–3, 368
- Project Gutenberg 13, 20
- prominence interpretation
 - theory 588
- prompting
 - Alzheimer's disease 375–6, 378, 380
 - computer-assisted instruction 276–8
- prototyping 24–6
- PRT *see* pivotal response training
- public policy 8
 - accessibility 587, 592
 - autism spectrum disorder 289–90
 - blind users 136
 - Braille 182
 - Census Bureau 551–2
 - children 36
 - community-based participatory research 509
 - dementia 313
 - digital libraries 579–81
 - gestural text entry 451
 - health care disparities 509
 - low-income communities 482–3, 485–6, 509
 - motor skills 451
 - screen readers 190
 - senior-focused design 87
 - speech-based technologies 415
 - spinal cord injuries 415
 - Web Fun Central 228–9
- pull-down menus 220–1
- quality of life 44, 46–7
- QueryKids project 19, 20
- RCN Telecom Services 460, 486
- real-life natural sounds 144–5
- recall approach 130
- recognition errors 390–1, 397–8, 400–1, 414
- recruitment of participants 412–13
- refactoring 582
- refreshable Braille displays 94–5, 109, 111, 114, 119, 122–4

- reliability 55–6
- reminiscence
 - Alzheimer's disease 359, 361–3, 376
 - dementia 299, 301–13
- repetitive strain injuries (RSI) 390, 422
- response time 74–5
- retrofitting 550
- retrograde amnesia 317
- reviewing techniques 332
- role-play 236–7, 242, 252–3
- Rosetta Project 13, 20
- RSI *see* repetitive strain injuries
- SAGE *see* Storyteller Agent
 - Generation Environment
- scalability 96
- SCI *see* spinal cord injuries
- scientific data sonification 149
- SCORE Skills Training Program 237
- screen doors 3–5
- screen magnifiers 142
- screen readers 175–93
 - accessibility online 177–8
 - Census Bureau 525, 527, 530, 536–40, 546–7, 549–52
 - crashes 184, 187
 - data collection 180–2
 - design implications 189
 - embedded functionality 97, 106
 - frustrations experienced 180, 182–6, 187–8
 - NavAccess prototype 113–25, 128–9
 - navigation 94–5
 - pilot testing 181–2
 - public policy 190
 - research implications 189–90
 - research literature 176–9
 - senior-focused design 65, 74
 - time loss 186–7
 - user implications 188–9
 - user preferences 109
 - visual impairment 142
- scripting 7
- seamless speech-based navigation
 - model 410–11
- search engines
 - accessibility 587–8, 594, 596
 - blind users 124, 136
 - searching software
 - children 13–42
 - senior-focused design 63
 - Second Life 594
 - security 56–7, 520, 540
 - SEDI *see* Social and Enterprise Development Innovations
 - selection
 - children 14, 19–20, 30
 - iSonic 158
 - self-confidence 349, 351
 - Semantic Web 588
 - senility 359
 - senior-focused design 9, 43–92
 - barriers to functionality 62, 63, 71–2
 - cognitive load 57–8
 - computer literacy 49, 50, 75–81
 - confidence-building 81–4
 - design strategies 43–6, 51–2, 66–7, 75–7, 80, 85–6
 - discernibility 64–9
 - email 47
 - empowerment 52, 57–64
 - engaging users 52–3
 - future developments 84–5
 - hardware design 43
 - hearing impairment 45, 64, 74
 - home users 46–8
 - keyboard skills 46
 - motor skills 45, 46, 70–2
 - multimodal interaction 73–4
 - navigation and searching 59–62
 - notification 64
 - public policy 87
 - quality of life 44, 46–7
 - research implications 86
 - software development life cycles 50
 - trust 53–7
 - universal accessibility 49
 - user implications 85
 - visual impairment 45, 63, 64–9
 - vocabularies 44, 56, 79
 - work styles 69–75
 - workplace users 48–9
 - see also* dementia
 - separate navigation 126
 - sequential approach 129–30
 - sequential menus 16–17
 - server-side processing 540
 - severe dementia 307–8
 - short-term memory *see* working memory
 - shortcuts 113–25
 - SIGCHI *see* Special Interest Group on Computer-Human Interaction
 - simultaneous menus 16–17
 - site maps 60
 - situate feature 158
 - Skillstreaming 237–8
 - slashdot.com 593
 - SMS texting 589
 - sociability 592, 597
 - social
 - capital 463–4, 477
 - computing 11
 - constructionism 463
 - effectiveness training 237
 - interactions 231–9, 241–2, 247–8, 251–6, 264, 282–4
 - isolation 47
 - networks 477, 478
 - Social and Enterprise Development Innovations (SEDI) 196
 - Social Skills Builder 270
 - Social Skills Picture Stories 238
 - sociocultural constructionism 461, 462–3, 472–3
 - soft power diplomacy 591–2
 - software development life cycles 50, 86
 - sonification 9, 142, 149–52
 - abstract 149–51
 - interaction 151–2
 - iSonic 143, 153–65
 - scientific 149
 - screen readers 177
 - Soto's disorder 281–5
 - sound preferences 214
 - SourceForge 565
 - Special Interest Group on Computer-Human Interaction (SIGCHI) 8
 - specific asset-mapping 470–2
 - speech-based technologies 389–92, 396–416
 - advantages/disadvantages 390–1
 - command failures 401–2, 408
 - command usage strategies 402–6
 - design implications 411–12
 - error correction 391, 397–8, 400–1, 414

- navigation 389, 391, 398–411
- productivity 400–1, 404–6
- public policy 415
- recognition errors 390–1, 397–8, 400–1, 414
- research implications 412–14
- seamless speech-based
 - navigation model 410–11
- text generation 403, 407, 415
- time allocation 400–1, 404–6
- speech recognition 10, 251
- spinal cord injuries (SCI) 10–11, 389–419
 - accessibility 413
 - characteristics 391–2
 - design implications 411–12
 - electrophysiological solutions 395–6
 - error correction 389, 391, 397–8, 400–1, 414
 - eye-controlled interaction 395
 - gestural text entry 421, 422, 426, 429, 432–4, 444–9
 - haptic feedback 390
 - head-controlled interaction 393, 394
 - navigation 389, 391, 398–411
 - prevalence 392
 - public policy 415
 - recognition errors 390–1, 397–8, 400–1, 414
 - research implications 412–14
 - seamless speech-based navigation model 410–11
 - speech-based technologies 389–92, 396–416
 - standard keyboard and mouse 390, 392–4, 397
 - user implications 414
- standard keyboard and mouse
 - motor skills 421–2
 - spinal cord injuries 390, 392–4, 397
- step instructions 211, 214
- step-wise progression 302–3
- sticky keys feature 300
- storyboards
 - Alzheimer's disease 369–71
 - anterograde amnesia 335
- Storyteller Agent Generation Environment (SAGE) 248
- storytelling
 - Alzheimer's disease 357–8, 361–2, 364–7, 374–7
 - autism spectrum disorder 231, 238–40, 243, 244–8, 250–6
- Student Work Abroad Program (SWAP) 196
- sustainability 482–3
- SWAP *see* Student Work Abroad Program
- table to prose mark-up language (TTPML) 96
- tabs, navigation 534–5, 536–7
- tactile
 - feedback 142
 - maps 145–7
- talking tactile tablets (TTT) 146
- target size 13, 14
- senior-focused design 50, 51–2, 70
- spinal cord injuries 393
- target-based navigation 10, 399–406, 410–11
- TeachTown 268, 269, 270–90
 - curriculum 271–2
 - design and development 270–81
 - design implications 285–7
 - generalization 272–3, 278, 280–2, 285–9
 - learning domains 273–5
 - maintenance trials 275–8
 - off-computer learning 271, 278–9
 - pre-test assessments 272
 - prompting 276–8
 - public policy 289–90
 - research implications 287–8
 - usability testing 281–5
 - user implications 288–9
- technology diversity 1
- technophobia 48
- Telephone-Linked Care (TLC) 363
- temporal sequencing 333
- text entry 11
 - children 15–16, 18–19
 - gestural 421–56
 - motor skills 421–56
 - speech-based technologies 403, 407, 415
- The Curious Incident of the Dog in the Night-time* 234
- thermostats 4–7
- tight coupling 15
- time loss 186–7
- time/space matrix 590–1
- titles 78
- TkTalk 400, 404, 407–8
- TLC *see* Telephone-Linked Care
- topic-based applications 535–6
- Toronto Alzheimer's Society 366
- Toronto Public Library 223–4
- touch screens 10
- TouchGraphics 146–7
- touchpads 421–5, 427, 431–2, 434–44, 450–1
- touchscreens
 - Alzheimer's disease 363
 - dementia 303–4, 306, 312
- trackballs 11, 421, 424–5, 427, 432–4, 444–51
- translations 79, 560, 561, 567, 570–3
- travel/mobility framework 99–101
- trees 16–17
- trust 53–7
- TTPML *see* table to prose mark-up language
- TTT *see* talking tactile tablets
- tunnel vision 525
- turn-taking 238, 240, 242, 251–2
- turning point devices 11
- tutorials 81
- typographical errors 572–3
- UA *see* universal accessibility
- UAAG *see* User Agent Accessibility Guidelines
- Ulukau library 573–4, 579
- UNESCO 562, 575–6, 581–2
- upper case text 67–8
- US Census Bureau *see* Census Bureau
- usability testing
 - Alzheimer's disease 374–7
 - anterograde amnesia 319
 - Census Bureau 521–2, 525–9, 533, 541–5, 549–52
 - children 26
 - dementia 307–11
 - hypermedia reminiscence-based support 307–11
 - senior-focused design 50
 - TeachTown 281–5
 - Web Fun Central 196–7, 201–2, 203–15, 225

- USDHHS *see* Department of Health and Human Services
- User Agent Accessibility Guidelines (UAAG) 102, 541
- user diversity 1
- user evaluation studies 107–8

- verbal skills *see* language skills
- virtual communities 119–21
- virtual peer technology
 - autism spectrum disorder 231–2, 242–58
 - future developments 256–7
 - implications 257
 - methodology 248–9
 - pilot studies 249–56
 - Play and Tell 231–2, 246–56
 - storytelling 231, 243, 244–8, 250–6
- Virtual Touch 145–6
- visual impairment
 - accessibility 595
 - Census Bureau 524–7, 530, 536–40, 546–7, 549–52
 - choropleth maps 141–73
 - geo-referenced data exploration 160–2
 - iSonic 143, 153–65
 - locomotion ability 148–9
 - multiple user populations 6
 - nonspeech sound 142, 143–5
 - nonvisual map access 145–7
 - pattern recognition 160–2
 - senior-focused design 45, 63, 64–9
 - sonification 142, 149–52
 - see also* blind users
- visual learning strategies 202, 227
- vocabularies 44, 56, 79
- voice chat 593
- voice-over 202

- W. K. Kellogg Foundation 460, 486
- WAB *see* Web Access for Blind users
- WCAG *see* Web Content Accessibility Guidelines
- Web Access for Blind users (WAB) 97
- Web Accessibility Initiative (WAI) 95, 177–8
- Web Content Accessibility Guidelines (WCAG) 2, 7–8, 95–6, 142
- Web Fun Central 195–230
 - A.K.A. company profile 195–6
 - design implications 227–8
 - development phase 215–17
 - findings 212–15
 - future developments 223–5
 - goals 198–9
 - interim adjustments 211–12
 - learning modules 217–23
 - Back & Forth 221–3
 - Pick, Click & Go 220–1
 - Web World 219–20
 - multiple user populations 3
 - production phase 217–23
 - public policy 228–9
 - research implications 228
 - research phase 199–202
 - target population profile 202
 - team profile 196–7
 - test modules 205–11
 - Art Maker 207–8
 - Pick and Click 206–7
 - Rate It 208–9
- Surfing/Browsing the Internet 208
- Web Maker 210–11
- Window Find 209–10
- You Pick 205–6
- text and voice-over 202
- usability testing 196–7, 201–2, 203–15, 225
- user implications 225–7
- web-based surveys
 - accessibility 519
 - literature review 518–20
 - see also* Census Bureau
- WebAdapter 97
- WebMac Junior 500, 510–13
- WebSound 98
- Wikipedia 589, 591, 594
- William Monroe Trotter Institute 460
- Williams Consulting Services 460, 467, 486
- windows 209–10
- WiViK keyboard 425, 427, 434–44
- wizards 81
- word prediction 393
- work styles 69–75
- working memory
 - Alzheimer's disease 358
 - data collection 524
 - dementia 299–301
 - senior-focused design 59
- Yahoo! Kids 13
- Youth Challenge International 196
- YouthBuild 460
- YouTube 589, 591, 592