Index

3D Virtual Learning Environments (3D VLE) 421-422, 1382, 1384
  advantageous themes 426
  disadvantageous themes 443

A

accessibility guidelines 1185
Accessible Instructional Materials (AIM) 1269, 1284, 1289
Action-Centered Subsystem (ACS) 153
Activities of Daily Living (ADL) 126, 634-635, 652-653, 656, 658, 1358, 1609
Actor-Network Theory (ANT) 1084-1085, 1090-1091
adaptive control method 614-615, 617
Adaptive Multi-Rate (AMR) 1683
ADDIE/IPECC models 1180
aided communication 993
  eye control 1075
Albayzín corpus 1112
Alternative and Augmentative Communication (AAC) 306, 403, 739, 787, 992, 1002, 1272, 1435-1436, 1458, 1497-1498, 1514
AMASE project 167
Ambient Intelligence (AmI) 1608
American Academy of Orthotists and Prosthetists (AAOP) 606
American Sign Language (ASL) 939, 1184
Americans with Disabilities Act (ADA) of 1990 281, 460, 631, 1176, 1197, 1230, 1385
Amyotrophic Lateral Sclerosis (ALS) 496, 727-728, 1056, 1517, 1536
ankle-foot orthoses 595
APAFA corpus 1110
APEINTA project 482, 1676, 1679
Applied Behavior Analysis (ABA) techniques 1351
articulatory phonetics 1465
Artificial Intelligence (AI) 106, 852, 1406
Artificial Intelligence Markup language (AIML) 1297
Artificial Neural Network (ANN) 1464, 1471-1472
Assistive and Augmentative Communication (AAC) 1357-1358
assistive devices
  abandonment 257
Assistive Technology (AT) 26, 31-32, 38, 50, 53, 183, 266, 333, 420, 469, 1085, 1099, 1102, 1118, 1184, 1198, 1270, 1383-1384, 1386, 1631, 1648
  blind individuals 1228
  cognitive impairment 16
  computer access 252
  definition 1089
  distance education 17-18
  enablers and barriers 65
  hearing impairment 14
  human activity 251
  human-computer interaction 18
  math 29, 52
  reading 28, 46, 456
  science and social studies 29
  special needs learners 14, 20
  trends 1204
  use 3, 12, 31, 36, 44, 47, 52, 93, 250-252, 260, 470, 623, 630-631, 994, 1122, 1126, 1129, 1196, 1205-1206, 1270, 1610, 1631, 1646
  visual 1085
  writing 27
Assitive Technology (AT) 683
attentional processing 1035
Attention Deficit Hyperactivity Disorder (ADHD) 771
Audio Description Project 1572
Authoring Tool Accessibility Guidelines (ATAG) 888, 1016, 1185, 1193, 1195
Autism Spectrum Disorders (ASD) 865, 1341
  treatment technology 868

Automated Internet Modeling (AIM) Lab 1163
Automatic Speech Recognition (ASR) 478-479, 494, 506, 511, 1108, 1293, 1312, 1418, 1677, 1680, 1688
Automatic Sync Technologies (AST) 1249
AutoTutor project 1296
AVANTI project 108

B

Behavior Intervention Plan (BIP) 404
bilingual variation 1473, 1476
biocompatible polymers 564
bio-mechanical prosthesis 371, 375
biomechanics 554
Biomedical Engineering Society (BMES) 324
Blink Link 373
body-powered prostheses 560
borrowing and reorganizing principle 1135
bottom-up learning 154, 159
Brain-Computer Interfaces (BCI) 304, 723, 737, 1516, 1530, 1544-1545, 1581
  hybrid 1563
  invasive systems 1554
  non-invasive systems 1552
Brain–Computer Interfaces (BCI) 1549
Brain-Machine Interface (BMI) 1535-1536
Brain–Machine Interfaces (BMI) 1549
brain surface electrodes 1536
Building the Education Revolution (BER) 1216

C

Canadian Model of Occupational Performance (CMOP) 333
Captioning Editing System (CES) 480
Center of Gravity (CoG) 614-615
cervical orthoses 602
Cervico-Thoracic Orthoses (CTO) 602
Cervico-Thoraco-Lumbo-Sacral Orthosis (CTLSO) 602
Change VIBE (C-VIBE) system 1296
childrens' services 167
CHIL project 487
Cleft Lip and Palate 497
C-leg 319
closed captioning 1249, 1683
Closed Circuit Television (CCTV) 15
COACH system 122
COGAIN proect 1057
cognitive functioning 1138
cognitive impairment 1176
cognitive/learning styles 1484-1485
  adaptation 1485
Cognitive Load Theory (CLT) 1134
cognitive paradigm 850
Collaborative HCI (CHCI) 157
collaborative learning 1165
collaborative planning 164
Collaborative Strategic Reading (CSR) 1275
collaborative virtual learning
  cerebral palsy 791
  diasabled children 790
Common Spatial Pattern (CSP) 1524
communication devices 991, 1366
Computer-Aided Speech and Language Therapy (CASLT) 501
Computer Assisted Instruction (CAI) 420
Computer Assisted Pronunciation Teaching (CAPT) 506
computing devices 1367
concatenative synthesis 1295
Connectionist Learning with Adaptive Rule Induction ON-line (CLARION) 153
Constraint-based Optimizing Reasoning Engine (CORE) system 105
constructivism paradigm 853
Content Management System (CMS) 1187
content quality
  in e-business 180
  in e-procurement 188
Context Aware Remote Monitoring Assistant (CARMA) 1357, 1368, 1377
Conversational Intelligent Tutoring System (CITS) 1297
Cooperative Extension System (CES) 1627-1628
  adult learners 1627
Corporate Social Responsibility (CSR) 269, 274
cosmesis 556
cosmetic arms 561
covert visual attention 1561
Cumulative Trauma Disorder (CTD) 1218
cyberbullying 204
CyberMinder system 1363

D

DeepKϕver 635
demographic change 377
design for me 1096
dialog management 1293, 1312, 1418-1419
Dictionary Building Software tool (DiBS) 484
differentiated instruction 401

Digital Audio-based Information System (DAISY) 459
Digital Living Network Alliance (DLNA) 665
digital pen 544
    students with disabilities 545
Digital Terrestrial Television (DTT) 905, 907, 921
Digital Video Broadcasting - Terrestrial (DVB-T) 909
disability 263
    medical model 64
    social model 64
disability studies 1086
Discrete Time-Frequency Representations (DTFR) 1525
Distance Type Fuzzy Reasoning Method (DTFRM) 615
dual-channel model 1140

E

Early Childhood Intervention Programs (EIS) 1353
early intervention 1342
EASE tool 108
echo360 1249
educational games 934
    for hearing impaired 937
    for visually imparied 935
e-learning 1175
electrocorticograms (ECoG) 1536, 1538
    conformable sensors 1540
    data transfer 1540
    head casing 1541
    recharging 1540
electroencephalograms (EEG) 1537
    signals 1552
electroencephalography (EEG) 1516, 1518
    electrodes 1519
    feature extraction 1525
    fundamentals 1518
electroneurographic (ENG) signals 567
electronic aggression 527
    perpetrator 535
    victim 534
Embodied Conversational Agent (ECA) 840
    Animaddin 827
    Aprendiendo 817
    Emo 820
Embodied Dialog systems (ECA) 1298
Emergency Response System (ERS) 132
Emotional/Behavioral Disorders (E/BD) 26
    technology tools 30
Energy Conservation and Homecare NETwork (ECHONET) 666
environmental linking and organizing principle 1135
equipotentiality principle 1137
Equitable Assessment Arrangements policy 1211
ergonomics 335
ethical decision-making 773
eXecutable User Action Notation (XUAN) 143
executive functions 773
    game-based 775
Executive–Process Interactive Control (EPIC) 150
explicit instruction 402
eye-gaze input 383

F

Facial Action Coding System (FACS) 1437
Facial Expression Recognition (FER) 1435, 1437
    classification 1442, 1444
    feature extraction 1442
facial muscles 1467
facial thermography 724-725, 729, 731
Fast Fourier Transform (FFT) 504, 1372
Finite Element Analysis (FEA) 578
Finite Element Modeling (FEM) 579
foot orthoses 595
foot prostheses 556, 578
Frequency Cepstra Coefficient (MFCC) 498
Frustrated Total Internal Reflection (FTIR) 380
frustration theory 1231
Functional Behavior Assessment (FBA) 403
functional Magnetic Resonance Imaging (fMRI) 723, 1550
functional prosthesis 554
fuzzy granulation method 1481, 1484
Fuzzy Inference System (FIS) 1482
fuzzy linguistic modeling 1481-1482, 1494
fuzzy linguistic models 1488
fuzzy logic based methodology 1481-1482, 1491, 1493
fuzzy logic theory 1482

G

gait analysis 576
gait cycle 318
game develpment
    mentally challenged 1319
gaze control 1055
general education classrooms 1-2, 401, 1288

Goals, Operators, Method, and Selection (GOMS) 104, 147
family of architectures 147
family of models 103-104, 106-107, 147-148
Goals, Operators, Method, and Selection rules (GOMS) 1502
goal theory 1231
Graphical User Interface (GUI) 1165
Ground-Reaction-Force (GRF) 583, 598
guidance fading 1144

H

haptic-based guidance system 952, 958
algorithm 954
prototype 954
Head Cervical Orthoses (HCO) 602
hearing impairment 1176
Hidden Markov Model (HMM) 638, 971, 1294, 1529
Hip-Knee-Ankle-Foot Orthoses (HKAFO) 596-597
hip orthoses 596
Home Audio/Video interoperability (HAVi) 665
home networking technoloiges 664
human cognitive architecture 1133
Human-Computer Interaction (HCI) 18, 103, 141, 865, 1209, 1216, 1292, 1462, 1651, 1655
Human-Computer Interface (HCI) 1463
Human-Machine Interfaces (HMI) 970
human rights 248, 259, 272, 453, 1404
Human-Robot Interaction (HRI) 865

I

identified directional intention 619
identity construction 207
identity multiplicity 1084-1085, 1090
identity negotiation 1092, 1094
iLab Shared Architecture (ISA) 1161
Illinois Information Technology Accessibility Act (IITAA) 1572
inclusive classrooms 400
inclusive education 401
inclusive pedagogies 65
Independent Component Analysis (ICA) 1516, 1523
Index of Learning Styles (ILS) model 1297
Individualized Education Program (IEP) 468, 1271, 1273
Individualized Family Service Plan (IFSP) 1343
Individuals with Disabilities Education Act (IDEA) 623, 1342
improvement 1340
Information Communication Technology (ICT) 164, 180, 196, 218-219, 261, 478-479, 1084
tools 1217
information store principle 1135
inhibit information flow 1139
Institute of Electrical and Electronic Engineers (IEEE) 324
instructional design principles 1134
instructional technology 30, 38, 50, 1271
INTECO Digital Television Operating System (IDTVOS) 916, 927
intellectual disabilities
classification 1315
Intellectual Disability (ID) 198, 525, 1110
Intelligent Verilog Compiler Project 1297
interactive instruction 856
inter-day variation 1473, 1475
International Classification of Functioning, Disability and Health (ICF) 99, 252, 263, 276, 332, 991, 994
International Collection of Child Art (ICCA) 1572
International Society of Prosthetics and Orthotics (ISPO) 320, 605
Internet Laboratory (I-Lab) 1162
inter-subject variation 1473-1474

K

KEE concept 1056
Keystroke Level Model (KLM) 104, 1502
kinematics 554
Knee-Ankle-Foot Orthosis (KAFO) 596
knee prostheses 572
Kom-In-Du project 172
Kurzweil readers 458

L

Lab-on-Web 1162
language delay 1107
learning by doing 1407
Learning Disabilities (LD) 26, 50, 1157
Learning English? Go Ahead! (LEGA) system 1303
Learning Management System (LMS) 1183, 1249
LECTRA Corpus 485
Lexical Stress Ratio (LSR) 496
liberated learning 480
Liberated Learning Consortium (LLC) 1677
Light-Emitting Diodes (LED) 1062, 1082
Linear Discriminant Analysis (LDA) 971, 1516, 1528

Linear Variable Differential Transformer (LVDT) 358
listem system 1299
LiveAbility House, the (TLH) 1626
    construction 1633
long-term memory 1134
Low Back Pain (LBP) 558
lower limb orthoses 551, 595
lower limb prostheses 567
Lumbo-Sacral Orthotic (LSO) 603

M

Magnetic Geometry Effect (MGE) 952
magnetoencephalography (MEG) 1541, 1552
Markov Decision Processes (MDP) 642
mass action principle 1137
Massively Multiplayer Online Role Playing Games (MMORPG) 1409
Matching Person and Technology (MPT) 251, 259
Maximum Exhaling Time (MET) 513
Maximum Phonation Time (MPT) 513
Mean Square Error (MSE) 516
mental health 1210, 1213
mental load 1041
    blinking rate 1043
    fixations and saccades 1042
    pupil response 1044
metabots 1406
Meta-Cognitive Subsystem (MCS) 153
metaverses 1406
microelectronics 1161
Microsoft Speech Recognition Engine (MSRE) 484, 1677
mobile games 71
mobility impairment 1176
modality effect 1140
Model Human Processor (MHP) 103, 108, 147
Modular Prosthetic Limb (MPL) system 315
Moodle 1411, 1433
Motivational Subsystem (MS) 153
Multimodal Dialog Systems (MMDS) 1419-1420
municipal planning 170
myoelecric joystick 973
myoelectric HMI
    video game 976
    wheelchair 972
myoelectric prostheses 561, 563
myoelectric signals (MES) 970, 990, 1464, 1478

N

narrow limits of change principle 1135
National Association for the Education of Young Children (NAEYC) 1340, 1354
National Instructional Materials Accessibility Standard (NIMAS) 459, 472, 475
Natural GOMS Language (NGOMSL) 104, 147
Natural Language Generation (NLG) 1293, 1312, 1418-1419
Natural Language Processing (NLP) 1108, 1406
near-infrared spectroscopy (NIRS) 723, 725-726, 729
neural decoding 1536
Next Generation Laboratory (NGL) 1162
Non-Action-Centered Subsystem (NACS) 153
Non Visual Desktop Access (NVDA) 465

O

Omni-Directional Walker (ODW) 614-615, 621
online behavior
    anti-social 204
    theories 203
open captioning 1683
Open Service Gateway initiative (OSGi) 666
Optical Character Recognition (OCR) 16, 292, 475
Optimal Utterance Length (OUL) 1007, 1010
orthoses 549, 591
orthotics 549

P

ParaWalker 597
Partially Observable Markov Decision Process (POMDP) 120, 122, 1614
    discrete-time 123
    handwashing 128
participatory design 164
path tracking control 620
Patient Safety (PS) 701
pencast 545
People with Dementia (PwD) 1606-1607
Personal Emergency Response System (PERS) 132
Personal Health Systems (PHS) 701
Persons with Disabilities (PwD) 180-181, 934
Phantom Limb Pain (PLP) 558
phonemic awareness 407
physical illness 358
Picture Exchange Communication System (PECS) 403

piezoelectric polymers 564
polycentric knee joints 570
Position Sensitive Device (PSD) 373
PreLingua 509, 511
print disability 455
PROACT system 123
Program for the Evaluation and the Analyze of all Kinds of Speech disorders (PEAKS) 504
prostheses 549
prosthesis alignment 575
prosthesis fitting 557
prosthetics 549
prototype testing 822
psychomotor 742
  development disorders 743
Pulse-Code Modulation (PCM) 1683

R

randomness as genesis principle 1135
Range-of-Motion (RoM) 572, 595, 599, 602
real-time captioning 1676
Realtime Transport Protocol (RTP) 1682
Recording for the Blind and Dyslexic (RFBD) 457, 460, 463
redundancy effect 1142
rehabilitation
  games technologies 741, 760, 765
rehabilitation engineering 278
Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) 324, 328, 473, 605-606, 1512
rehabilitation science 323
remote experimentation 1161
Repetitive Strain Injury (RSI) 1218
Residual Limb Pain (RLP) 558
Rich Site Summary (RSS) 1249

S

scanning keyboards 1500
  performance models 1502
self-disclosure 1178
self management
  children and youth 227
  internet programs 231-232
sensing technologies 667
  charges and electric fields 359
  disabled and elderly people 371
  Hall effect 361
  induction and magnetism 361
  medical applications 373
  piezoelecric effect 360
sensor devices 1366
sensory illness 358
Set-Top-Box (STB) 905, 909
Short Time Fourier Transform (STFT) 1525-1526
Signal-to-Noise Ratio (SNR) 1294
sign language 1257
sign writing 1258
Signwriting Markup Language 1259, 1262-1263, 1265
Sloodle 1411, 1433
Slow Cortical Potentials (SCP) 1555
smart homes 664, 668
  assistive services 664, 672
Solid Ankle Cushioned Heel (SACH) 551
Special Consideration policy 1211
special education 812, 840, 850
Speech Application Programming Interface (SAPI) 1424
Speech Generating Devices (SGD) 308
speech impairment 1107, 1176
speech recognition programs 1283
speech technologies 1109, 1417
Speech-To-Text (STT) systems 14
Spinal Cord Injury (SCI) 283, 594, 1650-1652
spinal orthoses 600
Spoken Dialog Systems (SDS) 1295, 1418
Spoken Language Understanding (SLU) 1293, 1312
standing-up mechanism 1601
State Operator and Result (SOAR) 104
stigma 1211
Student, Environment, Task and Tools (SETT) 251
Support Vector Machine (SVM) 501-502, 971, 990, 1438, 1445, 1528, 1537
Surface electromyogram (SEMG) 1464, 1466
  features 1466
surface electromyographic (SEMG) signals 565
Swivel Walker 598
synthetic speaking service 1679-1680

T

talking word processor 1283
Targeted Muscle Reinnervation (TMR) 317, 567, 611
technical aids 348
  mobile communications 347
Technology-Enhanced Learning Environments on the Web (TELE-Web) 1334
tele-care system 707
Telegerontology 710
temporary prostheses 574

Text-to-Speech (TTS) 482, 1677
synthesis 1293, 1312, 1418-1419
system 16
Thoraco-Lumbar Orthoses (TLO) 603
Thoraco-Lumbo-Sacral Orthoses (TLSO) 603
top-down learning 154, 159

U

ubiquitious communications 681
ubiquitous computing 680
challenges 682
ubiquitous sensing 667
Unconstrained Walking Plane (UWP) 1580, 1585
United Nations Convention on the Rights of Disabled Persons (UNCRDP) 201
universal design 65, 929
Universal Design for Instruction (UDI) 1201
Universal Design for Learning (UDL) 51, 399, 1006, 1175, 1201, 1383
upper limb orthoses 593
upper limb prostheses 559
usability heuristics 66
User Action Notation (UAN) model 147
User Agent Accessibility Guidelines (UAAG) 888, 1016

V

ViaScribe 480
videogames
teaching tool 751, 777
Villanova University Speech Transcription (VUST) 484
virtual keypads 347
Virtual Learning Environments (VLE) 77, 79, 93, 421
Virtual Physiological Human (VPH) 701
Virtual University Multi-Agent System (VU-MAS) 1298
Virtual Worlds (VW) 1384
visual aids 934
visual impairment 1176
Visually Evoked Potentials (VEP) 723, 725, 728, 731, 1559
Visually Impaired People (VIP) 1580-1581, 1585
Visual Studio Tools for Office (VSTO) 830
visuo-spatial attention 1562
Vocal Tract Length Normalization (VTLN) system 500
vodcast 1249
voice therapy 509-510

W

walking assistance mechanism 1602
wavelet transform 1516, 1526
continuous (CWT) 979-980, 1527
discrete (DWT) 1527
wearable sensors 668
web accessibility 1020, 1191
analytical evaluation 1020, 1022
barrier (WAB) 1018, 1025
empirical evaluation 1020, 1022
Web Accessibility Initiative (WAI) 62, 68, 215, 493, 885, 888, 1013, 1015, 1029, 1185, 1242, 1244
Web-Based Experimentation 1161
Web Content Accessibility Guidelines (WCAG) 62, 68, 885, 888, 1013, 1016, 1026, 1186, 1193, 1195
wheelchair functions 626
wheelchair mobility 133
wheelchair types 625
Wisconsin Assistive Technology Initiative (WATI) 251, 260
Word Error Rate (WER) 479
word prediction programs 1282
worked examples 1143
working memory 1133, 1140
World Health Organization (WHO) 64, 99, 222, 332, 1003-1004, 1210, 1215
World Wide Web Consortium (W3C) 68, 184, 885, 888, 904, 1013, 1015, 1185