

Index

A

academic
 -to-academic (A2A) 737
 -to-learner (A2L) 737
 -to-teacher (A2T) 737
 activity theory (AT) 720
 adaptive
 learning design (ALD) 76
 learning systems (ALS) 118
 analyze, design, develop, implement, and evaluate
 (ADDIE) model 402
 animated pedagogical agents (APAs) 363
 apparatus markup language (AML) 777
 assessments 699
 astronomical instrument markup language (AIML)
 778
 asynchronous e-learning 741–751
 design guidelines for 743
 for synchronous e-learning 745
 versus design patterns 745

B

blended learning 606

C

California
 achievement test (CAT) 562
 test of basic skills (CTBS) 562

cognitive style 416–448
 and the learning process 430
 justification for examining types of 432
 role of 419
 collaboration in online courses 682–691
 motivating students 683
 case study 687
 computer
 -aided language learning (CALL) 451
 -assisted instruction (CAI) 66, 398
 -assisted language learning (CALL) 643
 -based instruction (CBI) 397
 -based training (CBT) 92, 572
 -mediated communication (CMC) 604, 787
 behaviors 934
 media richness theory 930
 models 929
 hyperpersonal communication model 933
 reduced social cues model 931
 social identity model 933
 social information processing model 931
 social presence model 929
 gaming 396–408, 416–448, 449–462
 and narratives 453
 and simulations 453
 and the learning process 422
 future in education 403
 in a college classroom 463–475

- methodology 465–467
 - results 467–469
- justification for examining types of 432
- learner expectancy 423
- link to IST research 397
- role of 418
- supported collaborative learning (CSCL) 787
- constructivism 52–64
 - changing roles of teachers and students 52
- content management systems (CMS) 731
- course management systems (CMSs) 23–33, 27–33, 547–559, 705–715
 - faculty responses 553
 - student responses 555
 - tools 551
- cross-cultural communication and collaboration 959
- designing an online learning environment 962
 - implementation 965
- culturally
 - aware systems (CAWAS) 30–33, 829–841
 - architecture of 832
 - authoring tool to produce cultural templates 833
 - cultural adaptation of multimedia content 835
 - cultural intelligence 831
 - cultural representations 836
 - dual representation of cultural rules 832
 - negotiating the meanings of technology use 842–868
 - impact of western technologies on non-western communities 857
 - key issues 846
 - non-western learners' cultural appropriation of technologies 852
 - use of western educational technologies to serve non-western learners 847
- CyberCoaching System (CCS) 19–33, 343–359
 - diagnostic cognitive assessment (DCA) 19, 343
 - instructional technology and 348
 - what is it? 346
 - expert knowledge model 350
 - intelligent tutoring system 351
 - student model 349
 - sum of squares and cross products (SSCP) 352
 - concepts and computation of 352
 - what is it? 348
- cyberethics 884–895
 - academic honesty policy issues 887
 - detecting online plagiarism 889
 - framework for sound ethical decision making 886
 - teaching 890

D

- digital
 - divide dimensions 869–883
 - cultural differences 873
 - educationally 874
 - information access patterns 871
 - socially and culturally 871
 - patterns 876
 - game-based learning 409–415
 - barriers 412
 - cost issues 412
 - infrastructure issues 412
 - overcoming them 413
 - people issues 412
 - benefits 411

E

- e-learning adoption 498–513
 - addressing emotions 803–816
 - detecting emotions within instructional technology 805
 - emotion recognition 806, 819
 - guidelines for designing an inferential system of 810
 - facial action coding system (FACS) 807
 - their role in learning 804
 - affective agents in 817–828
 - affordances of 820
 - guidelines in developing 823
 - comparison of case studies 692–704
 - faculty training 701
 - in the two countries 694
 - criminal justice team in England 698
 - faculty of graphic arts in Croatia 695
 - student supports 700
 - the two universities 693
 - use of virtual learning environments 699
- computer software training 571–581
 - simulation design and development for 574
 - animated screen captures 575
 - HTML hybrids 577
 - process capture software 577
 - static screen captures 574
 - traditional authoring software 576
- critical success factors 498–513
 - the holistic approach 500

Index

- align with business objectives 500
 - a training delivery method 502
 - blend instruction 504
 - content design and development 505
 - establishing the technology infrastructure 503
 - evaluate and provide feedback to development 505
 - leadership, managing the project, and managing change 501
 - motivate e-learners 506
 - designing interactive environments 596–613
 - collaborative learning 599
 - interaction 598
 - lessons from the corporate world 514–531
 - drivers and constraints 518
 - human capital management systems 516
 - implementation issues and strategies 526
 - technological trends 729–740
 - content-based video indexing 732
 - emerging ones 730
 - mobile learning 734
 - personalized, intelligent Web tutoring 733
 - research framework 735
 - XML and Semantic Web 731
 - educational modeling language (EML) 67
 - embodied conversational agents (ECAs) 363
 - employee performance management (EPM) 516
 - English as a second language (ESL) 25, 641
 - entity-relationship-modeling (ERM) 134
 - experiential learning theory 434
- F**
- feedback 416–448
 - justification for examining types of 432
 - knowledge of correct response (KCR) 417
 - knowledge of response (KOR) 417
 - long-term memory storage 426
 - Ford partnership for advanced studies (Ford PAS) 26–33, 670–681
 - implementation of Web-based curriculum 670–681
 - surveys 674–675
- H**
- handheld hybrid 641–652
 - overcoming learner obstacles 647
 - overcoming pedagogical obstacles 646
 - student benefits and response 649
 - the rationale 645
- human**
- computer interaction (HCI) 397
 - capital management (HCM) 515
 - resource management systems (HRMSs) 22, 514
- hypermedia 92–106
 - and learning style 95
 - rationale and research questions 96
 - results and discussion 98
 - tools for teaching and learning 93
- I**
- IMS learning 65–78
 - learning design (LD) specification 67
 - a learning design example 69
 - extension via services 71–75
 - pedagogical deployment 68
 - information processing theory 433
 - instructional
 - design (ID) 11–33, 1–14, 142–154
 - applications of ID models 3
 - artificial intelligence (AI) 9
 - automated instructional design (AID) 9
 - learning management systems (LMS) 9
 - benefits 19
 - cognitivist and social-constructivist perspectives 146
 - comparing learning paradigms 144
 - Cook et al.’s model of learning and knowing 145
 - discussion: the end of ID? 149
 - future trends 8, 24
 - cognitive science and neuroscience 9
 - object-oriented distributed learning environments 8
 - reusable learning object (RLO) 8
 - in corporate settings 28–37
 - cases from real-world corporate settings 29
 - responsibilities and skills 34
 - project management 2
 - recent paradigm shifts 143
 - strategies and guidelines for 582
 - strategies for business education 38–50
 - effective learning and teaching strategies 43
 - National Business Education Association (NBEA) 39
 - NBEA National Business Education Standards 39
 - technology competencies for business education students 40–42
 - students’ expectations 21
 - technology project management 3

- Web-based 582–595
 - adaptive methods 584–588
 - considerations for 588
 - individual characteristics 583
 - environment 156
 - systems design (ISD) 4, 17
 - recursive, reflective, design, and development model (R2D2) 6
 - the Addie model 5, 19
 - the ASSURE model 8
 - the dick and carey model 5
 - the ICARE model 7
 - the rapid prototyping model 6
 - subject matter experts (SMEs) 6
 - systems portfolio management (ISPM) 22–33, 476–497
 - aligning IS investments with corporate strategy 480
 - assessing IS portfolio execution 489
 - building the IS portfolio plan 481
 - creating the IS portfolio 483
 - IS portfolio governance 491
 - managing the IS portfolio 486
 - technology 18, 53
 - and social psychology 944–951
 - attitude-behavior consistency 946
 - people as motivated tacticians 948
 - defined 18
 - implications for integration 23
 - innovative learning approaches 257–271
 - distance education delivery 259
 - equipment for 260
 - impetus for change 258
 - information storage 262
 - solution partners 258
 - specialized software tools 264
 - Web sites to enhance education 265
 - wireless connectivity 262
 - integration barriers 54
 - students' uses 204
 - teachers' views of appropriate technology 198–215
 - a qualitative study 200
 - contributing factors 199
 - understanding pre-service teachers' perceptions 209
 - use and perception 157
 - instructor led trainings (ILT) 572
 - instrument markup language (IML) 778
 - intelligent tutoring systems (ITS) 734, 830
 - interface design 79–91
 - emotions 79–91
 - positive 82
 - future trends 86
 - how it affects users' experience 80
 - multimedia learning 79–91
 - Mayer's cognitive theory 83
 - model of emotional design in 84
 - suggestions for attractive design 85
 - IT research 913–926
 - for all social classes 922
 - myth of technology integration in American education 918
 - the postmodern perspective 915
- J**
- joint
 - academic network (JANET) 695
 - information systems committee (JISC) 695
- K**
- knowledge management 653–669
 - Kolb's learning styles 94
- L**
- language learning 449–462
 - and linguistic 450
 - case studies 453
 - constructivist language 451
 - player-game system 454
 - verbal interaction 458
 - player-player system 457
 - massively multiplayer online games (MMOGs) 457
 - multi-user, object-oriented (MOOs) 457
 - verbal interaction 459
 - tactical language training system 455
 - learning
 - and study styles inventory (LASSI) 23, 532
 - results self-regulation 541
 - container (LC) 111
 - content management system (LCMS) 66, 577, 770
 - management system (LMS) 28, 768, 771
 - material markup language (LMML) 122
 - object metadata (LOM) 75, 770
 - object model 768–784
 - coupled tank 780
 - lab-based 776
 - objects (LOs) 111
 - paths 122
 - basic design 123

Index

- creation and modification of 127
 - interactive meta-heuristics course 132
 - substitution of meta-data and objects 124
 - synchronized blended learning 129
 - realities 15–33, 177–197
 - activity theory as a framework 182
 - cognitive tool concept 184
 - situated cognition 181
 - three pedagogical strategies 186
 - two case descriptions 190–196
 - to think 787
 - villages network 287–299
 - the Net Academy 289
 - learning management system (LMS) building
 - 18–33, 326–342, 516
 - characteristics 329
 - SharePoint Alliance (SPA) trial 331
 - sample subject on 337
 - Web site and portal components 334
 - libraries supporting technology 168
 - collaborative training: Blackboard 170
 - electronic resource management 173
 - instruction builder (IB) 173
 - learning content management system (LCMS) 172
 - LOLA strategy 653–669
 - “answering” activity 659
 - “assessment” activity 663
 - “commented reading” activity 661
 - “commenting on links” activity 661
 - “production of collective article” activity 662
 - “questioning” activity 658
 - methodological approach 656
 - pedagogical management 656
 - results 663
- ## M
- meaningful learning 56
 - accessing/using the database 58
 - choosing a topic 57
 - describing categories of information 57
 - designing the database structure 58
 - filing the database 58
 - gathering information 57
 - querying the database 58
 - medical education and technology 312–325
 - barriers 314, 321
 - cost 322
 - faculty incentives 323
 - helpful technology modalities 316–320
 - International Virtual Medical School (IVIMEDS) 317
 - primary medical education
 - considerations for 314
 - primary medical education 313
 - reliability 322
 - secondary medical education 313
 - Microsoft SQL Server Desktop Environment (MSDE) 328
 - misuse of online databases 373–380
 - recommendations for instructors 377
 - study 1 375
 - study 2 375
 - technology acceptance model (TAM) 374
 - motivation theory 434
 - multimedia
 - messaging systems (MMS) 545
 - multimedia instruction 216–231
 - benefit of 219
 - case studies in 896–912
 - design and development principles 222
 - functionality in problem solving 232–248
 - problem types 235
 - recency effect 234
 - spatial ability 235
 - study 1 236
 - study 2 239
 - working memory and cognitive load 234
 - learner control 226
 - learning theory 899
 - State technology standards 222
 - student interactions 900
 - the instructor 898
 - what is it? 218, 898
- Myself project 360–372
 - affective computing in 363
 - description and main goal 362
 - soft skills 365
 - 3D interactive simulations for training in 365
- ## N
- national
 - assessment of educational progress (NAEP) 562
 - learning network (NLN) 732
- ## O
- Ohm’s law 780
 - online
 - communication 927–943

- distance and interaction 936
- social presence 937
- verbal, nonverbal, and bandwidth 928
- community building 906
- discussion 787
- learning 519
 - and the Gallup Organization 519
 - Gallup's learning management system 520
 - reading assessment strategies 560–570
 - can software programs help? 565
 - extant data analysis 566
 - how reading problems are identified? 563
 - literature review 561
- learning environment (OLE) 602
- MBA program 614–630
 - commonly used technologies 619
 - uses of technologies 618
 - interactivity level of 619
- teaching
 - challenges instructors face 705–715
 - compensatory issues 709
 - course content issues 710
 - course design issues 712
 - heavier workload 709
 - interaction issues 711
 - training issues 710
 - using course management systems (CMSs) 708
 - characteristics 706
 - fear of pedagogical change 723
 - higher order thinking (HOT) 785–802
 - classroom implementation 797
 - dialogic communication 786
 - literature survey 788
 - research on 791
 - learning and study strategies for 532
 - teaching Shakespeare 631–640
 - comprehensive assessment system 633
 - teaching focuses 632
- ontology driven model for e-learning 107–116
 - bootstrapping 109
 - personalized ontological learning environment (poleONTO) 14, 107, 110
 - why and ontology 108

P

- personal digital assistants (PDAs) 734
- portable education 249–256
 - benefits of using it for education 250
 - devices 252
 - podcasting 250–256

- educational use of 253
- format of 252
- really simple syndication (RSS) 251
- technologies 251
- problem-based learning (PBL) 718
- proportion-integral-derivative (PID) 780

R

- reusable learning objects (RLOs) 521, 769
 - advantages of 522
 - and on-demand learning 523
 - use by organizations 523
- role-playing games (RPGs) 459

S

- self-directed learning (SDL) 642
- Southern Regional Education Board (SREB) 562
- strategic learning 537
 - and self-regulation 540
 - skills for 534
 - teaching strategies 543
- student decision making in technology 155–167
 - a study 158–163
 - analysis of covariance (ANCOVA) 162

T

- team teaching 300–311
 - improving 308
 - merging interdisciplinary faculty 304
 - solving problems in online team teaching 307
 - special needs students 305

U

- ubiquitous learning (u-learning) 20–33, 381–394
 - role of human to human interaction 383
 - suggested architecture 386
 - components 387
 - technical possibilities and limitations 382
 - the walkabout environment 388
 - e-Learning environment 389
 - implementation models 391
 - m-Learning environment 391
 - towards a model for 385

V

- virtual
 - classroom excellence 716–728
 - case-based learning 719

Index

- enhancing it 721
- four levels of implementation 722
- problem-based learning 717
 - scope of instruction 718
- project-based learning 717
 - scope of instruction 718
- instruments markup language (VIML) 779
- learning environment (VLE) 27–33, 118, 692–704
 - SmartFrame 120
 - strategies for 903
- visuo-spatial working memory (VSWM) 235

W

- Web-based training (WBT) 92, 572
- WebCT tools 634
 - discussion board 635
 - to reach educational goals 634
- WebQuest
 - development 272–286
 - beliefs and concept mapping on 272–286
 - study 1: beliefs on WebQuests 274–277
 - study 2: concept mapping on WebQuests 277–282
 - underlying constructs of 752–767
 - applying constructs to online instructional design 759
 - as functionally relevant to WebQuest
 - theoretical framework 761
 - as functionally relevant to WebQuest learning 759
 - the study 755–759
- Windows SharePoint Services (WSS) 328

Z

- zone of proximal development (ZPD) 599