

# Index

## Symbols

3D-model 859

3D-model, definition 867

3D-model, evaluating 862

## A

access (student and resource), definition 513

accessibility 589

activity, structure of 213

activity theory 209

activity theory, definition 227

activity theory, perspective of 211

adaptability, definition 530, 572

adaptive learning 81

ADL SCORM (advanced distributed learning sharable content object reference model), definition 849

advanced learning designs 75

agile development method, definition 406

AICC CMI (aviation industry computer-based training committee computer managed instruction) 849

ALSONline 815

ALSONline, definition 826

ALSONline usage 820

analogical reasoning (AR) 265

appreciation data 383

architecture design patterns 147

ARIADNE (Association of Remote Instructional Authoring and Distribution Networks for Europe), definition 849

assessment 78

## B

behaviorist teaching model 361

blended learning, definition 389

blended learning, social affordances in 380

blended learning networks 373

boundaries of design, definition 371

break-even analysis, definition 675

brokerage system, definition 530

bureaucratic evaluation, definition 572

## C

CALL (computer assisted language learning), definition 447

case based learning 778

case based learning, definition 791

case based learning approaches, overview of 782

case based learning designs 780, 781

case based project approach 786

case method approach 781

cases, definition 791

case study approach 784

class environments 493

classroom environment 500

coercion degrees 57

cognitive maps 593

cognitivist teaching model 362

collaboration, definition 389

collaboration scripts 332

collaborative argumentation, definition 587

collaborative knowledge 596

collaborative learning 76

commercial contexts 837

communication standards 832

communities 30

communities of practice (CoP) 614

community-object relationship 219

- community–tools relationship 221  
 community of practice, definition 626  
 compendium, definition 208  
 competence assessment 80  
 competency, definition 889  
 complex decision making 295  
 conceptual model 48  
 conceptual model, definition 469  
 construction, definition 329  
 constructivist learning principles, definition 530  
 constructivist teaching model 359  
 contextual representation, definition 469  
 contradictions, definition 227  
 convergence, definition 826  
 convergent participation, definition 587  
 conversational structure 412  
 coordination, definition 351  
 coordination mechanism, definition 351  
 coordination theory 332  
 copyright 618  
 cost of learning objects repository, definition 649  
 CSCL script, definition 351  
 Culture & Technology, definition 743  
 curricular scope, definition 649
- D**
- data collection 267  
 DCMI (Dublin Core Metadata Initiative), definition 849  
 decision making 851  
 democratic evaluation, definition 572  
 descriptive process model 56  
 design-by-pattern, definition 143  
 design for learning 20, 394  
 design for learning, definition 39, 227  
 design for learning as an activity system 212  
 design for reusability 395  
 design for reuse 394  
 designing for learning 211  
 design languages 851  
 design languages, definition 867  
 design of learning objects 391  
 design pattern 145  
 design pattern, definition 143, 165, 186  
 design pattern about pedagogical strategies 126  
 design patterns 153, 171  
 design patterns, definition 867  
 design patterns, usage of 147  
 design patterns about human actors 125  
 design patterns about learning resources 128  
 design patterns about technological tools and services 130  
 design patterns and systemic functional linguistics 177  
 design patterns for e-learning 113  
 design patterns for networked learning 176  
 design patterns in (e-)learning 120  
 design patterns in interaction design 148  
 design patterns in software engineering 119  
 design patterns to support e-learning design 144  
 design patterns usage in e-learning 154  
 design process 29  
 design product 29  
 design time, definition 111  
 developing for learning design (D4LD) 290  
 digital media 271  
 digital repositories, barriers to success 617  
 digital repositories, implementation of 612  
 digital repositories, success of 613  
 digital repositories, use of 611  
 digital repositories in higher education 607  
 digital repository, definition 626  
 discussion boards, definition 700  
 domain map, definition 39  
 domain model 45  
 drill-and-practice type LO, definition 552
- E**
- e+ service in operation 249  
 e-learning, definition 143, 165  
 e-learning, design patterns 113  
 e-learning, instructional design of 144  
 e-learning design 144  
 e-learning design, pattern language 154  
 e-learning design patterns, drawbacks 130  
 e-learning design patterns, taxonomy for 121  
 e-learning design patterns, virtues 130  
 e-learning environment 269  
 e-learning evaluation, expert reviews 243

## **Index**

e-learning experience, definition 143  
e-learning practice 20  
E-Lera (e-learning research and assessment network), definition 587  
E-Sim, definition 311  
E-Sim, design of 300  
E-Sim learning design, adaptations 304  
E-Sim learning design, evolution 304  
E-Sim teaching context 299  
E2ML 3, 5, 18  
E2ML, definition 18  
Edna community, definition 281  
educational design 168  
educational design, definition 186  
educational design, pattern languages in 167  
educational design, patterns in 167  
educational developer, definition 776  
educational environment 495  
educational information, access and control of 616  
educational modeling language (EML), definition 111, 294  
edutainment, definition 826  
English as a second language (ESL) students, definition 447  
enhanced learning 392  
Enhanced Science Helper, definition 743  
evaluation matrix for expert review 247  
exemplars, definition 242  
experimental approach to evaluation, definition 572  
explicit instruction, definition 552  
expository instruction, definition 552  
expression, definition 427

## **F**

face-to-face meetings 380  
face-to-face meetings, definition 389  
face-to-face teaching issues 268  
field experiment, definition 491  
fit dependencies 338  
flexibility 616  
flexible learning 230  
flow dependencies 337  
formal learning designs 60  
formative assessment 78  
fractions 537

## **G**

“groupalized” learning 81  
general adaptive learning 82  
generative learning 702  
generative learning, definition 720  
generative learning objects 398  
generative learning objects (GLOs) 406  
generic academic skills, definition 826  
generic Web sites 808  
GLO authoring tool 400  
GLOTT model, definition 720  
granularity 30, 746  
granularity, definition 40, 371, 530, 626, 649, 742, 760  
granularity, levels of 57  
granularity guideline 753  
group-based learning 332  
group-based learning, definition 351  
group-based learning processes 335  
group awareness information 76  
group interaction 77

## **H**

handheld devices, definition 469  
handhelds 451  
health professional education, definition 791  
health professions education 777  
HEA Project 290  
higher order thinking, generative learning for 702  
high level pedagogy 655  
HOTS, definition 721

## **I**

IEEE LTSC LOM (Learning Technology Standards Committee Learning Object Metadata), definition 849  
IEEE standards, definition 742  
illuminative evaluation, definition 572  
implicit instruction, definition 552  
IMS CP (content packaging), definition 849  
IMS LD 3, 6, 18, 354  
IMS LD (learning design), definition 143, 850  
IMS LD, achievements 87  
IMS LD, achievements of 94  
IMS LD, capturing context 352

- IMS LD, coordinaton mechanisms in 330  
 IMS LD, definition 18, 351, 371  
 IMS LD, modeling services 96  
 IMS LD, multifaceted nature of 91  
 IMS LD, opportunities 87  
 IMS LD, prospects 87  
 IMS LD as a methodology 93  
 IMS LD as a modeling language 92  
 IMS LD as an infrastructure 94  
 IMS LD as interoperability specification 93  
 IMS LD for Practitioners (LD4P) 288  
 IMS LD in a changing world 102  
 IMS LD in interoperability, achievements 98  
 IMS LD in modeling, achievements 94  
 IMS LD methodology, achievements 99  
 IMS LD specification 87  
 IMS LD standard 41  
 IMS learning design 25  
 IMS learning design (IMSLD) 41  
 IMS learning design (IMS LD), definition 111, 294  
 IMS learning design, definition 86, 890  
 IMS learning design in educational situations 282  
 IMS learning design specification 47  
 IMS learning design specification (IMS LD) 114  
 IMS QTI (question and test interoperability) 850  
 IMS SS (simple sequencing) 850  
 incentive mechanisms 378  
 incentive mechanisms, definition 389  
 incident focus, definition 260  
 indexation of resources 591  
 inference engine, definition 742  
 informal learning designs 58  
 informal resources 593  
 information and communication technology (ICT) 1  
 information model 51  
 information object, definition 469  
 information retrieval 591  
 inquiry learning 539, 657  
 inquiry learning, definition 552  
 instructional design, definition 165  
 instructional design languages, 3D-model 858  
 instructional design of e-learning 144  
 instructional engineering, definition 890  
 instructional engineering, foundations for 872  
 instructional engineering, principles for 876  
 instructional engineering for quality 871  
 instructional software, definition 867  
 instructional standards 833  
 integration 509  
 intellectual property rights 618  
 interactive, definition 260  
 interoperability, definition 530, 572
- ## K
- K-12 education contexts 836  
 knowledge base 742  
 knowledge connectedness 794  
 knowledge convergence script 334  
 knowledge entering 598  
 knowledge model, definition 890  
 knowledge normalization 598, 606  
 knowledge normalization, definition 606  
 knowledge organisation 794  
 knowledge sharing 595  
 knowledge sharing, definition 606  
 knowledge sources 597
- ## L
- L1 (first language/mother tongue), definition 447  
 L2 (second language), definition 447  
 LAMS 7, 19  
 LAMS, definition 19, 40  
 LAMS author mode, definition 281  
 LAMS community, definition 281  
 LAMS learner mode, definition 281  
 layered learning design, definition 407  
 LD authoring tools 53  
 LDLite 3, 8, 19  
 LDLite, definition 19  
 LDVS 7, 19  
 LDVS, definition 19  
 Le@rning Federation, The 430  
 Le@rning Federation Initiative 472  
 learner-generated animations 312  
 learner/student-centered learning, definition 700

## ***Index***

- learners' questions (LQ) 265
- learning, definition 491
- learning activities 190
- learning activities, definition 208
- learning activity 168
- learning activity management system (LAMS) 3, 19
- learning by evaluation, definition 587
- learning design 19, 190
- learning design, articulating 246
- learning design, definition 19, 86, 166, 208, 227, 281, 329, 351, 372, 469, 675, 700, 776, 826
- learning design, describing 658
- learning design, mediating artefacts in 188
- learning design, pedagogical framework 655
- learning design authoring system, definition 281
- learning design authoring systems 264
- learning design authors 263
- learning design language, definition 86
- learning design process, definition 143
- learning design representation 19
- learning design representation, definition 19
- learning design representations 1, 5
- learning designs 41, 264, 402, 761, 766, 779, 851
- learning designs, definition 242, 261, 407, 827, 868
- learning designs, expert reviews 243
- learning designs, patient cases 777
- learning designs, principled construction 869
- learning designs, reuse of 869
- learning designs, standards 827
- learning designs, taxonomy for 228
- learning designs and design languages 854
- learning designs representations, characterising of 31
- learning design to teach scientific inquiry 652
- learning design visual sequence 19
- learning design visual sequence (LDVS) 3
- learning experience, student perceptions 666
- learning management system, definition 166
- learning model 43
- learning networks, definition 389
- learning object, definition 329, 491, 530, 552, 572, 626, 675, 700, 721, 760, 776, 807, 826
- learning object, format of 631
- learning object economy, definition 626
- learning object libraries 723
- learning object libraries, K-12 settings 723
- learning object management 618
- learning object repositories, cost 629
- learning object repositories, guidelines for developing 744
- learning object repositories, sustainability 629
- learning object repository (LOR), definition 447
- learning object review instrument (LORI) 574
- learning object review instrument (LORI), definition 588
- learning objects 393, 402, 451, 702, 761, 765
- learning objects (LOs), definition 447, 649
- learning objects, definition 242, 407, 588, 851, 868
- learning objects, evaluating 477
- learning objects, instructional effectiveness of 532
- learning objects, pedagogical design of 394
- learning objects, standards 827
- learning objects and design languages 856
- learning objects and the teacher 731
- learning objects as meta-schemas 792
- learning objects for generic Web sites 808
- learning objects for NESB students 428
- learning objects for pedagogical impact 391
- learning objects in class environments 493
- learning objects repository, definition 650
- learning objects via handheld devices 459
- learning outcome, definition 40
- learning paths 414
- learning paths, definition 427
- learning paths, designing 421
- learning resource evaluation 574
- learning session, definition 227
- learning strategies 265
- learning strategy, definition 281
- learning style, definition 143
- learning styles, definition 826

- learning task, definition 469
  - learning tasks 451, 453
  - learning theory, definition 166
  - learning tool/service, definition 143
  - learning units 352
  - lesson mapping, definition 721
  - life cycle models 590
  - LN4LD (learning network for learning design) 373
  - LN4LD, design guidelines 373
  - LN4LD, participation data 377
  - LO, evaluation approaches 557
  - LO, evaluation methods 560
  - LO, evaluation strategy 558
  - LO content, linguistic analysis of 432
  - LO databases, purpose of 631
  - LO design, sophistication 635
  - LO distribution 553
  - LO production 553
  - LO repositories, characteristics affecting cost 634
  - LO repositories, costs of 638
  - LO repositories, economic models 633
  - LO repository, scope of 634
  - LORI 575
  - LORI, collaborative argumentation 579
  - LORI, convergent participation 581
  - LOs, adapting 519
  - LOs, distributing 518
  - LOs, distribution of 568
  - LOs, modifying 519
  - LOs, production of 517, 567
  - LOs, promises of 515
  - LOs, selection and use of 568
  - LOs, use of 518
  - LOs' questionnaire 562
  - LO system considerations 567
  - LO use 553
- M**
- management, definition 261
  - mathematical activity 794
  - mathematical understanding and learning objects 797
  - mathematics 537
  - mathematics learning and teaching 797
  - mathematics meta-schemas 798
  - meaning management, definition 427
  - mediating artefacts 191
  - mediating artefacts, basis of 198
  - mediating artefacts, definition 208
  - mediating artefacts, examples of 193
  - mediating artefacts in learning design 188
  - meta-schemas 792
  - metadata 742
  - metadata, definition 530, 572, 868
  - metadata standards 832
  - metamediating artefacts 196
  - military contexts 837
  - MISA method 873
  - mixed numbers 537
  - Mod4L project 20
  - modifiability, definition 530, 572
  - motivation, definition 491
  - multicategory standards 835
  - multilevel modelling, definition 492
  - multimedia, attributes of 422
  - multimedia rhetoric 422
  - multipath characteristic of networked media, definition 427
- N**
- natural language processing 742
  - needs analysis, definition 626
  - needs analysis framework 607, 611
  - neomillennial learning approach, definition 826
  - NESB students 428
  - Net generation 810
  - Net generation, convergent possibilities 811
  - Net generation, definition 826
  - Net generation, divergent capabilities 813
  - networked learning 176, 408
  - networked learning, definition 187
  - networked media, definition 427
  - new media meaning management 416
  - non-English speaking background (NESB) students, definition 447
  - non-interactive, definition 261
  - nugget, definition 372
  - numeracy, definition 807



## **Index**

### **O**

object repository, definition 760  
object sharing 748  
object sharing guideline 757  
online content, definition 492  
online content program 470  
online learning 270  
online learning, definition 700  
online learning environment 676  
online role-based learning designs 295  
online role play 762  
online role play, definition 776  
online role play, tracking use of 764  
online role playing 761  
online role plays, reusability of 768  
online teaching issues 268  
ontology, definition 890  
open source, definition 294

### **P**

“pop-up” questionnaire 563  
participation, definition 389  
patient cases, definition 791  
pattern 19  
pattern, definition 19  
pattern catalog, definition 166  
pattern language, definition 143, 166, 187  
pattern languages 171  
patterns 3, 9  
pattern system, definition 166  
pattern taxonomy, definition 143  
pedagogical approach, definition 675  
pedagogical design of learning objects 394  
pedagogical design pattern, definition 166  
pedagogical design patterns 150  
pedagogical modeling, purpose of 97  
pedagogical patterns, definition 407  
pedagogical philosophy 655  
pedagogical strategies 675  
pedagogical tactics 659  
pedagogic plan, definition 227  
pedagogic planning tools, design of 209  
pedagogic planning tools, framework 215  
pedagogy 470, 507  
pedagogy (teacher and student), definition 514  
pedagogy, definition 111, 492

pedagogy framework 658  
personalized learning 81  
personal learning environment (PLE), definition 111  
planning, definition 329  
plurimedia, definition 890  
portal questionnaire 563  
postcompulsory education, definition 227  
practice models 20  
practice models, definition 40  
practice models, purpose of 26  
practice object, definition 469  
practitioners, definition 227  
predict–observe–explain (POE) 265  
predict–observe–explain (POE) strategy 273  
prescriptive process model 56  
presentation object, definition 469  
problem-based learning 676  
problem based learning (PBL) 656  
problem based learning (PBL), definition 701  
problem based learning, definition 791  
procedural learning 537  
procedural learning, definition 552  
process models, uses of 57  
programming insights 268  
proposed e-learning design patterns 154  
prospective teachers 263  
psychological tools, definition 227

### **Q**

quality assurance 614

### **R**

reconstruction, definition 329  
reference implementation, definition 111  
reflection corner, definition 721  
repositories, definition 294  
repository, context for 748  
repository, definition 530, 776  
representation, definition 40  
repurpose, definition 760  
reusability 589, 747, 761  
reusability, definition 530, 572, 626, 890  
reusability-centered designs 881  
reusability guideline 755  
reusable learning assets (RLAs), definition 650  
reusable learning objects 769, 771, 797

- reuse, definition 675, 760, 776  
 rhetoric, definition 427  
 role-play simulation, definition 311  
 role focus, definition 261  
 role play 762  
 routine data 561  
 routine data, definition 530, 572  
 rule focus, definition 261  
 run, definition 112  
 runtime, definition 112
- S**
- scalable knowledge sharing 595  
 schema activation 795  
 science 539  
 Science Helper K-8, definition 742  
 Science Helper Project, definition 742  
 Science Helper Video Series, definition 743  
 SCORM 41  
 SCORM (shareable content object reference model) 24  
 selection (teacher and resource), definition 514  
 self-organization, definition 389  
 self-organizing social systems 375  
 semi-formal resources 594  
 semiformal learning designs 59  
 simulation object, definition 469  
 simulation type LO 552  
 simulation type LO, definition 552  
 SLeD Integration Demonstrator (SLiDe) 287  
 slowmation 312  
 slowmation, definition 329  
 small-screen design, definition 469  
 SOA, definition 294  
 social affordances, definition 389  
 social affordances in blended learning 380  
 social exchange theory 378  
 social exchange theory, definition 389  
 social presence, definition 701  
 software engineering design patterns 147  
 standards, evolution 828  
 strategy focus 261  
 strategy focus, definition 261  
 subject–community relationship 218  
 subject–object relationship 217  
 subject–tools relationship 219  
 sustainability, definition 890
- syntax of design, definition 372  
 systemic-school environment 497  
 systemic functional linguistics (SFL), definition 187
- T**
- “true story” learning activity 363  
 tacit knowledge, definition 40  
 tasks, definition 675  
 taxonomy for learning designs 228  
 teacher interviews 564  
 teachers 264  
 technical tools, definition 227  
 technology curriculum 470  
 terminology guideline 751  
 tertiary education contexts 837  
 theories of learning and instruction 45  
 thinking tasks, definition 721  
 tools–object relationship 220  
 typology, development of 231
- U**
- unit of learning 683  
 unit of learning (UOL), definition 112  
 unit of learning (UoL), definition 294  
 unit of learning, definition 86  
 unit planning 268  
 University of Southern Queensland (USQ), definition 826
- V**
- virtual field trip 356  
 visual instructional design languages (VIDLs), definition 372  
 visual meaning management 408  
 visual organisation 418
- W**
- Web-based learning system 704  
 Web-based resources 271  
 Web representation, taxonomy for 238
- X**
- XML (extensible mark-up language), definition 294  
 XML binding 51