Instructional Design Literature Review

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Version 1.0

Introduction

This review focuses on instructional design literature for the MACE project. It shows the plenty of research in instructional design era for more than 20 years, and offers various approaches, concepts and models in this field. The findings relate to the following keywords: Instructional design in teaching, design architecture, and construction engineering. This report is divided in four sections: “Literature Reviews”, “Articles, Book Chapters and Studies”, “Books”, and “Web Resources”, and is organized in a schedular view. Each section implicates the information about literature reference or website title, keywords, abstract and URL/resource if available.

In the first section you can find literature reviews on several topics to instructional design: Teaching of concepts, effects of hypermedia on learning, instructional design supports in course management system, instructional design model, instructional design competencies, methods, and tools, online teaching and learning, software tools, learning design, best practices. In section two are articles, book chapters and studies listed. The third section shows relevant books for the topic of instructional design, and the last section lists some web resources.

Instructional Design – Literature Reviews

Literature Reference	Keywords	Abstract	URL/Resource
Tennyson, Robert D. & Park, Ok-Choon (1980). The Teaching of Concepts: A Review of Instructional Design Research Literature. *Review of Educational Research*, 50(1), 55-70. Sage Journals online.	Instructional design in teaching Teaching of concepts	Reviewed are recent studies directly related to the teaching of concepts. The relationship of this educational research work with that in experimental psychology is defined with extended interpretation given to specifying a set of guidelines for design of concept learning environments. A four-step process for concept teaching is proposed from the literature. First, the taxonomical structure of the content should be determined. Second, a concept definition should be prepared in terms of the critical attributes, and examples should be selected on the basis of critical and variable attributes. Third, examples should be arranged in rational sets by appropriate manipulation of the attributes. Fourth, the presentation order of the rational sets should be arranged according to the divergency and difficulty level among examples of the concept. Areas of further research on concept teaching are identified.	http://rer.sagepub.com/cgi/content/abstract/50/1/55
Ambrose, David W. (1991/December). The Effects of Hypermedia on Learning: A Literature Review. *Educational Technology*, 31(12), 51-55.	Instructional design in teaching Effects of hypermedia on learning	Reviews relevant scholarly literature on hypermedia from two perspectives: (1) an analysis of hypermedia in terms of learning theory; and (2) the implications of several characteristics of hypermedia for instructional designers, including its impact on learner control, concept development, and collection of data on student performance. Research needs for theorists and practitioners are suggested.	http://eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=EJ436328&ERICExtSearch_SearchType_0=no&accno=EJ436328
Dai Zhang, Steven Shaw & Strobel, Johannes (2006). Embedding Instructional Design Supports in Course Management System – Implications from Literature Review. In E. Pearson & P. Bohman (Eds.), Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2006 (pp. 880-887). Chesapeake, VA: AACE.	Instructional design in teaching Course management system	Current CMSs have limited capabilities of supporting instructional design for online delivery. They are criticized for lacking proper pedagogical affordances and having limited content management capabilities. In this paper, the authors review related literature within and beyond the field of educational technology to capture valuable information for improving the technology. The review focuses on two important aspects for supporting instructional design: 1) Automated instructional design (AID); and 2) Collaborative/cooperative design in general. The purpose is to explore what potential support for instructional design could be integrated in CMSs.	http://www.editlib.org/index.cfm/files/paper_23110.pdf?fuseaction=Reader.DownloadFullText&paper_id=23110

Song, Holim (2006). Instructional Design Model (IDM) and Online Courses. In E. Pearson & P. Bohman (Eds.), Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications 2006 (pp. 2878-2880). Chesapeake, VA: AACE.	Instructional design in teaching Instructional design model	Designing online courses is a challenging process for instructors due to numerous technical and design considerations. As part of a thorough review of literature, it is necessary to review instructional design models and discuss the finding of research about traditional classroom instruction. By employing an instructional design model, online courses can make a clear connection between learning outcomes and course design.	http://www.editlib.org/index.cfm/files/paper_23415.pdf?fuseaction=Reader.DownloadFullText&paper_id=23415
McCowin, Tammé E. (no year). A Quest for Instructional Design Competencies, Methods, and Tools to Support Effective Performance Assessment. Available online at: http://www.iparesearch.org/blog/articles/ipaArticle2007AECT_mccowin.pdf.	Instructional design Competencies, methods, and tools	In today's fast-paced, transient, global economy, instructional technology (IT) professionals have no way to manage and track performance to industry competency standards. An IT professional's work life is constantly changing and new methods, tools, and technologies have an immediate impact on individual development. To effectively perform the functions of the instructional designer and developer roles, in any work environment, practitioners need the ability to measure and monitor their performance on industry defined competency standards. This would enable them to assess their strengths and weaknesses on core competency standards. IT professionals "have a responsibility to keep their skills current" (Rothwell & Kazanas, 2004, p. 386). Richey, Fields, Foxon, Roberts, Spannaus, and Spector (2001), claimed updating and improving one's knowledge, skills, and abilities is an important and essential competency. With the right measurement methods and tools professionals would be empowered to measure, score, and monitor their own performance on existing competency standards. This would also enable them to make effective decisions about their professional development and career planning activities. Similarly, employers and educational organizations would also be able to measure and monitor individual performance for recruitment, selection, placement, succession planning, training, development, and career 2odeling22g. A literature review was conducted to identify what competencies, methods, and tools are extant in the field to enable effective performance assessment of IT professionals. The author will discuss the research problem that led to the literature search, identify prior research studies, review the literature, and explain the solution. This literature review was conducted as apart of the author's dissertation research. In-depth coverage of the literature review and instrument development and validation results can be found in the dissertation (http://www.iparesearch.org/blog/articles/mccowin_dissertation_proposal_011.pdf).	http://www.iparesearch.org/blog/articles/ipaArticle2007AECT_mccowin.pdf
Henke, Harold (2001). Evaluating Web-Based Instructional Design. Available online at: http://www.chartula.com/evalwbi.pdf.	Instructional design in teaching Web-based instruction	The purpose of this research project was to explore design issues associated with the development of Web-Based Instruction (WBI). The reason design issues for Web-Based Instruction are important is because, as stated by Fox and Mills (1997a): "...We expect Web technologies to totally change distance education...Web-based distance education technologies may improve education and support totally new educational systems, radically changing traditional universities and K-12 schools." And Fox and Mills (1997b) also supply the problem statement for this paper: "We live in an era of accelerating change which can be expected to lead to major changes in the structure of educational institutions...[with] the establishment of virtual classrooms and virtual universities. Although the qualitative structure of cyberteaching is relatively clear, the essential details are unknown." This paper was written in 1997 as a project paper for a course on Human-Computer Interaction. This paper was reformatted in June, 2001.	http://www.chartula.com/evalwbi.pdf
Reeves, Thomas (2006). Do Generational Differences Matter in Instructional Design? The University of Georgia, Department of Educational Psychology and Instructional Technology	Instructional design	The literature review upon which this paper is based was originally funded by the U.S. Department of Labor and UPS in 2006. The author wishes to acknowledge the contributions of various UPS personnel, Dr. Skip Atkinson, and Ms. Eunjung Oh, and others to this review. However, the opinions, findings, conclusions, and recommendations expressed in this paper are those of the author and do not necessarily reflect the views of the DOL, UPS or any one else. Reeves (2006) conducted a literature review "to address	http://it.coe.uga.edu/itforum/Paper104/ReevesITForumJan08.pdf

(EPIT). Available online at: http://it.coe.uga.edu/itforum/Paper104/ReevesITForumJan08.pdf.		questions related to generational differences in the contemporary workforce that might justify the specification of a new instructional design model and/or the development of innovative instructional methods and technologies to accommodate the generational differences found to exist" (Reeves 2006, p. 2).	
Tallent-Runnels, Mary K., Thomas, Julie A., Lan, William Y., Cooper, Sandi, Ahern, Terence C., Shaw, Shana M., & Lui, Xiaoming (2006). Teaching Courses Online: A Review of the Research. *Review of Educational Research*, 76(1), 93-135.	Instructional design in teaching Online teaching and learning	This literature review summarizes research on online teaching and learning. It is organized into four topics: course environment, learners' outcomes, learners' characteristics, and institutional and administrative factors. The authors found little consistency of terminology, discovered some conclusive guidelines, and identified developing lines of inquiry. The conclusions overall suggest that most of the studies reviewed were descriptive and exploratory, that most online students are nontraditional and Anglo American, and that few universities have written policies, guidelines, or technical support for faculty members or students. Asynchronous communication seemed to facilitate in-depth communication (but not more than in traditional classes), students liked to move at their own pace, learning outcomes appeared to be the same as in traditional courses, and students with prior training in computers were more satisfied with online courses. Continued research is needed to inform learner outcomes, learner characteristics, course environment, and institutional factors related to delivery system variables in order to test learning theories and teaching models inherent in course design. Keywords: distance education, Internet courses, online teaching, Web-based instruction.	http://rer.sagepub.com/cgi/content/abstract/76/1/93 No access
Britain, Sandy (2004). A Review of Learning Design: Concept, Specifications and Tools. A report for the JISC E-learning Pedagogy Programme. Available online at: http://www.jisc.ac.uk/media/documents/programmes/elearningpedagogy/learningdesigntoolsfinalreport.pdf.	Learning design Software tools, IMS-LD	The principle aim of this report is to review and evaluate currently available software tools related to learning design. Whilst the IMS Learning Design Specification (IMS-LD), which we will consider in some detail here, provides a very thorough framework for evaluating the capabilities of software tools within the learning design space, it is also possible to argue that it presents only one of many possible realisations of the concept of learning design and that there are other possible ways to model the concept of learning design that do not implement IMS-LD.	http://www.jisc.ac.uk/media/documents/programmes/elearningpedagogy/learningdesigntoolsfinalreport.pdf
Whitworth, S. A. & Berson, M. J. (2003). Computer technology in the social studies: An examination of the effectiveness literature (1996-2001). *Contemporary Issues in Technology and Teacher Education* [Online serial], 2(4). Available: http://www.citejournal.org/vol2/iss4/socialstudies/article1.cfm.	Instructional design in teaching Technology, instructional tool, significant effect, problem solving	Within the social studies, technology has served a dual role as an important instructional tool that may have a significant effect on the global, political, social, and economic functioning of American society. As both a method of instruction and a topic of instruction, the impact of computers and technology on social studies is immense. However, the extent to which this potential is being fully realized in the social studies classroom has not been sufficiently explored. Technology-based learning has the potential to facilitate development of students' decision-making and problem solving skills, data processing skills, and communication capabilities. Through the computer, students may gain access to expansive knowledge links and broaden their exposure to diverse people and perspectives; hence, affording students the opportunity to become active participants in an increasingly global and interactive world.	http://www.citejournal.org/vol2/iss4/socialstudies/CITEWhitworthsocstudies.pdf

Instructional Design – Articles, Book Chapters and Studies

Literature Reference	Keywords	Abstract	URL/Resource
Tessmer, Martin & Richey, Rita C. (1997/June). The role of context in learning and instructional design. *Educational Technology Research and Development,* 45(2), 85-115.	Instructional design in teaching	Context is a pervasive and potent force in any learning event. Yet instructional design models contain little guidance about how to accommodate contextual elements to improve learning and transfer. This paper defines context, outlines its levels and types, specifies some pertinent contextual factors within these types, suggests methods for conducting a contextual analysis and utilizing its results for instructional design, and outlines future issues for context-based instructional design. The incorporation of a contextual approach to instruction will make our design models systemic as well as systematic.	http://www.springerlink.com/content/7lw260n449223814/fulltext.pdf

Sadler-Smith, Eugene (1996/November). 'Learning Styles' and Instructional Design. *Innovations in Education and Teaching International*, 33(4), 185-193.	Instructional design in teaching	The purpose of this article is to suggest ways in which the experiential learning model (Kolb, 1984; Honey and Mumford, 1986, 1992) and individual differences between learners in terms of their cognitive styles (Riding, 1991) may be accommodated when designing self-instructional learning materials. The learning cycle, and the associated learning styles (Kolb, 1984; Honey and Mumford, 1986, 1992) and the verbalizer—imager/wholist-analytical model of cognitive style (Riding, 1991) are reviewed and suggestions made regarding how balanced instructional materials may be developed which acknowledge: (a) each stage of the learning cycle; (b) individual differences between learners in terms of the verbalizer-imager and wholist—analytical dimensions of cognitive style. It is argued that Kolb's and Honey and Mumford's notions of the learning cycle and Riding's model of cognitive style may provide useful guidelines for accommodating individual differences between learners when designing self-instructional materials which may enable: (a) learning difficulties to be anticipated and addressed; (b) the effectiveness and efficiency of self-instruction to be improved; (c) learners to become more aware of the learning process and hence more self-reliant and autonomous; (d) learners and designers to adopt a 'whole-brain' approach.	http://www.informaworld.com/smpp/content~content=a746786408~db=all?sessioncountry=713126895 No access
Douglas, Ian (2001). Instructional design based on reusable learning objects: applying lessons of object-oriented software engineering to learning systems design. Frontiers in Education Conference, 2001. 31st Annual, Vol. 3.	Instructional design in teaching, learning objects	There is currently a lot of interest in the concept of learning objects. Learning objects are discrete units of learning resources based on agreed standards. The idea behind learning objects is to promote greater reuse of resources within new instructional systems development. The main work in learning objects has primarily focussed on defining the technical requirements and standards for computer based learning objects. The technology itself is not likely to bring the benefits promised by reusable objects without a change in methods used by practicing instructional designers. The instructional design implications of the learning object approach is examined to determine the adaptation required in instructional design methodologies. Object-oriented software engineering is proposed as a useful basis for new thinking in instructional design methodology.	http://www2.computer.org/plugins/dl/pdf/proceedings/fie/2001/6669/03/00963968.pdf?template=0&loginState=2&userData=Open%2Buniversiteit%2Bnederland%2B%257E%2BLOBBI%2B-%2Bnetherlands%2Bconsortium1231157933837
Merrill, M. David (1987/March). The new Component Design Theory: instructional design for courseware authoring, *Instructional Science*, 16(1), 19-34. Springer Netherlands.	Instructional design in teaching Courseware authoring	This paper outlines extensions of Component Display Theory to provide the type of design guidance needed for experiential computer based instructional systems. The new Component Design Theory (CDT) extends the original theory in several significant ways. Content types are extended to content structures. These content structures include experiential as well as structural representations. Primary presentation forms are extended to primary presentation functions and the display is replaced by the transaction. Various types of transactions are identified for both structural and experiential representations. Course organization, previously described as Elaboration Theory, is included as part of the new CDT. Consistency rules are extended to include: (a) goal-content representation consistency; (b) goal/content representation-transaction consistency; and (c) goal/content representation-course organization consistency. Intervention rules are included for intra-transaction guidance, inter-transaction selection and sequence (strategy), inter-content representation selection and sequence (sequence) and control (who makes the guidance, strategy and sequence decisions, the learner or the system?). Finally a set of cardinal instructional principles is identified and the sets of rules which comprise the new CDT are suggested as prescribed procedures for implementing these cardinal principles. 1. The preparation of this paper was supported in part by funds provided by The Army Research Institute via Human Technology, Inc. The views expressed are those of the author and do not necessarily reflect the views of the sponsoring organization or Human Technology, Inc. 2. Mark Hopkins was a powerful teacher and President of William College of Massachusetts (1836–1872). It is said that the best instructional technique ever devised was Mark Hopkins on one end of a log and a student on the other.	http://www.springerlink.com/content/r14h8441p9284252/fulltext.pdf
Bourdeau, Jacqueline & Mizoguchi, Riichiro (2002). Collaborative Ontological Engineering of Instructional	Instructional design Ontological engineering	Intelligence in an ITS authoring system could rely on content-based engineering of instructional design (ID) knowledge, i.e. based on principles such as conceptualization, standardization and theory-awareness. An ontology-based architecture with appropriate ontologies has been proposed for a theory-aware ITS authoring system. Ontological engineering (OE) as a	http://hal.archives-ouvertes.fr/docs/00/19/00/88/PDF/Bourdeau_2002.pdf

Design Knowledge for an ITS Authoring Environment. In Intelligent Tutoring Systems: 6th International Conference, ITS 2002, Biarritz, France and San Sebastian, Spain, June 2-7, 2002. Proceedings, 2002 (pp. 91-104). Berlin, Heidelberg: Springer. Lecture Notes in Computer Science, 2363/2002.	(relevant?), ITC authoring systems	collaborative process jointly conducted by an OE expert and an ID expert is presented as a step on a roadmap towards a theory-aware ITS authoring system.	
Bourdeau, Jacqueline & Bates, Anthony (1996/December). Instructional design for distance learning. *Journal of Science Education and Technology*, 5(4), 267-283. Springer Netherlands.	Instructional design in teaching Distance learning	An intrinsic link exists between instructional design (ID) and distance learning (DL). Their inextricability in the real world raises specific problems of interest in the field of ID. In no other teaching/learning situation is ID so essential as in DL. The conditions of DL make it a necessity to have long-term instructional planning, cost analysis, curriculum and course development, instructional materials development and maintenance, delivery plans, and detailed evaluation rules. Without all of these components, DL simply could not happen. It took some time for this 5odeling5 to be acknowledged, as can be seen in the history of DL. However, ID becomes even more critical as increasingly costly and complex means are used. Conditions of learning have special features in DL, such as the role of media, since the professor, teacher or instructor is replaced by media for either transmitting information or for organizing learning activities. In this paper, the term distance learning will be used to mean media-based, remote or asynchronous learning supported by an instructional system. This paper introduces general features of DL and examines essential aspects of ID for DL, with special emphasis on ID methodologies and on media selection.	http://www.springerlink.com/content/lmw2pv7450988p2k/fulltext.pdf
Tennyson, Robert D. & Cocchiarella, Martin J. (1986). An Empirically Based Instructional Design Theory for Teaching Concepts. *Review of Educational Research*, 56(1), 40-71.	Instructional design in teaching	An instructional design theory for concept teaching is presented. The theory is based on direct empirical validation from a programmatic line of instructional systems research. Concept learning is viewed as a two-phase process: (a) formation of conceptual knowledge and (b) development of procedural knowledge. Two fundamental components of the proposed theoretical model are content structure variables and instructional design variables. A rational combination of these components, based on a content analysis that takes into account the learning model, provides the means for the selection of one of four basic instructional design strategies. Research studies that contribute to the model are reviewed, and the model is described with reference to instructional methods and cognitive processes.	No access
Dewalda, Nancy, Scholz-Craneb, Ann, Austin Boothc, & Levine, Cynthia (2000/January). Information literacy at a distance: instructional design issues. *The Journal of Academic Librarianship*, 26(1), 33-44.	Instructional design in teaching Synchronous and asynchronous technologies	To develop effective information literacy instruction for distance education students, academic librarians must consider instructional design issues, including important factors in the selection of distance education technologies, the incorporation of active learning, and the assessment of learning to improve instruction.	http://www.sciencedirect.com/science?_ob=Mimg&_imagekey=B6W50-3YN939G-6-3&_cdi=6556&_user=4127915&_orig=search&_coverDate=01%2F31%2F2000&_sk=999739998&view=c&wchp=dGLzVzz-zSkWA&md5=074eb9ae4f3f006b4acaf8acdc3e74ec&ie=/sdarticle.pdf
Reiser, Robert A. (2001/March). A history of instructional design and technology: Part I: A history of instructional media. *Educational Technology Research and Development*, 49(1), 53-64. Boston: Springer.	Instructional design in teaching	This is the first of a two-part article that will discuss the history of the field of instructional design and technology in the United States. A definition of the field is provided and the major features of the definition are identified. A rational for using instructional design and technology as the label for the field is also presented. Events in the history of instructional media, from the early 1900s to the present day, are described. The birth of school museums, the visual and audiovisual instruction movements, the use of media during World War II, and the interest in instructional television, computers, and the Internet are among the topics discussed. The article concludes with a summarization of the effects media have had on instructional practices, and a prediction regarding the effect computers, the Internet, and other digital media will have on such practices	http://www.springerlink.com/content/8284v653u0641h87/fulltext.pdf

		over the next decade. Portions of this article are from a chapter that will appear inTrends and Issues in Instructional Design and Technology (Reiser & Dempsey, in press). Some segments of the article previously appeared in a book chapter by Reiser (1987).	
Reiser, Robert A. (2001/June). A history of instructional design and technology: Part II: A history of instructional design. *Educational Technology Research and Development*, 49(2), 57-67. Boston: Springer.	Instructional design in teaching	This is the second of a two-part article that discusses the history of the field of instructional design and technology in the United States. The first part, which focused on the history of instructional media, appeared in the previous issue of this journal (volume 49, number 1). This part of the article focuses on the history of instructional design. Starting with a description of the efforts to develop training programs during World War II, and continuing on through the publication of some of the first instructional design models in the 1960s and 1970s, major events in the development of the instructional design process are described. Factors that have affected the field of instructional design over the last two decades, including increasing interest in cognitive psychology, microcomputers, performance technology, and constructivism, are also described. Portions of this article are from a chapter that will appear in Trends and Issues in Instructional Design and Technology (Reiser & Dempsey, in press). Some segments of the article previously appeared in a book chapter by Reiser (1987).	http://www.springerlink.com/content/t84v161740422678/fulltext.pdf
Osman, Mohamed E. & Hannafin, Michael J. (1992/June). Metacognition research and theory: Analysis and implications for instructional design. *Educational Technology Research and Development*, 40(2), 83-99. Boston: Springer.	Instructional design Metacognition, learning processes	Metacognition, a construct with strong empirical and theoretical foundations, is integral to successful learning. Research on metacognition has provided convincing evidence supporting its importance in the instruction and learning processes. In this article, research on several aspects of metacognition are briefly reviewed and analyzed, examples of metacognitive strategies are provided, and implications for instructional design are described.	http://www.springerlink.com/content/m21216t176674874/ No access
Merril, David M., Barclay, Matthew, & van Schaak, Andrew (2008). Prescriptive Principles for Instructional Design. In Michael J. Spector, et al., Handbook of Research on Educational Communications and Technology, 3rd Edition (pp. 173-184). New York: Routledge, Taylor & Francis Group.	Instructional design	This chapter reviews some of the prescriptive principles that, based on research or experience, have been identified for facilitating effective, efficient, and engaging instruction. For the purposes of this chapter, *instruction* is defined as a deliberate attempt to design a product or environment that facilitates the acquisition of specified learning goals. This chapter first reviews the *first principles of instruction* identified by Merril (2002a). In the second section, recent specifications of instructional design principles are compared to these first principles. The final section reviews approaches for designing instruction centered in whole tasks.	Paper Copy from Ivan
Smith, Glenn Gordon, Torres-Ayala, Ana T., & Allen J. Heindel (2008). Disciplinary Differences in E-learning Instructional Design: The Case of Mathematics. *Journal of Distance Education/Revue de l'Éducation á Distance*, 22(3), 63-88.	Instructional design in teaching	Discipline is a vital, yet largely overlooked, factor in research on e-learning course design. This study investigated disciplinary differences in the instructional design of e-learning, by comparing how instructors of mathematics-related disciplines versus others: a) met the challenges of their discipline in e-learning and b) perceived the adequacy of course management systems (CMSs). Investigators used a two-phase method: a) qualitative telephone and interviews, and b) web-based questionnaires. Mathematics instructors suggested very d I ff e rent disciplinary challenges and corresponding e-learning solutions. Mathematics-related instructors were significantly less likely to view prevailing e-learning models and CMSs as well-suited to their discipline. Note: Includes a review of literature to the issues *Constructs Peripherally Relation to Discipline, Research Addressing Discipline in E-learning, Gaps In the Research.*	http://www.jofde.ca/index.php/jde/article/view/91/592
Kirschner, P., Carr, Ch., Van Merriënboer, J., & Sloep, P. (2003). How Expert Designers Design: Priorities, *Designing Competence-*	Competence-based learning Designing competence-	Two studies were carried out with expert educational designers at Arthur Andersen and the Open University of the Netherlands to determine the priorities they say that employ when designing competence-based learning environments. Designers in a university context and in a business context agree almost completely on what principles they feel are	http://dspace.ou.nl/bitstream/1820/702/1/030201HowExpertDesignersDesign.pdf

based Learning. Performance Improvement Quarterly, 15, 86-104.	based learning environments, university context and business context	important, the most important being that one should start a design enterprise from the needs of the learners, instead of the content structure of the learning domain. The main difference between the two groups is that university designers relate that they find it extremely important to consider alternative solutions during the whole design process; something that business designers report as being considerably less important. University designers say that they focus more on project plan and desired characteristics of the instructional blueprint whereas business designers report being more client-oriented, stressing the importance of "buying in" the client early in the process. Note: Includes a review of research describing instructional design practice and interesting literature.	
Koper, E. J. R., & Bennet, S. (2008). Learning Design: Concepts. In H. H. Adelsberger, Kinshuk, J. M. Pawlowski & D. Sampson, Handbook on Information Technologies for Education and Training (2th ed., pp. 135-154). Berlin Heidelberg: Springer. International Handbook on Information Systems Series.	Learning design Concepts	Book chapter that concentrates on two questions. First, how to identify high quality learning designs and second, how to codify these learning designs in a machine interpretable way using IMS Learning Design. It is defined what learning designs are, how high quality learning designs can be identified and described with a high level language, how learning designs can be coded in IMS LD and how IMS LD code can be interpreted by a runtime engine and presented by a LD Player.	http://dspace.learningnetworks.org/bitstream/1820/831/4/LD%20concepts%20notes_SB130607.pdf
Sampson, D., & Fytros, D. (2008). Competence Models in Technology-enhanced Competence-based Learning. In H. H. Adelsberger, Kinshuk, J. M. Pawlowski & D. Sampson (Eds.), International Handbook on Information Technologies for Education and Training, 2nd Edition, Springer, June 2008.	Competence-based learning Competence models, competence-based learning	Throughout the years competence-based management approaches have proved to be a critical tool in human resource management, vocational training and performance management. As a result, competence-based approaches are often adopted as the key paradigm in both formal or informal education and training programs. Despite this fact, the Technology-enhanced Learning (TeL) research community has only recently considered undertaking research towards technology-enhanced competence-based learning and training. To this end, there exist a number of open issues such as: how can we model competences; how can we assess competences; how can we develop training resources and training activities that target specific competences. The scope of this chapter is to contribute to this field by addressing the issue of competence modeling in technology-enhanced competence-based training, that is, how can we model and represent competence-related information in a system meaningful way.	http://dspace.ou.nl/bitstream/1820/1196/1/Sampson-Fytros-CompetenceBasedLearning.pdf
Porter, David, Curry, Joanne, Muirhead, Bill,& Galan, Nick (2002/March). A Report on Learning Object Repositories. Review and Recommendations for a Pan-Canadian Approach to Repository Implementation in Canada. Available online at: http://www.canarie.ca/funding/elearning/lor.pdf.	Learning objects Learning object Repositories	The increasing use of information technologies to create new learning resources, to manage existing learning resources, and to aggregate learning content from a wide variety of academic and publishing sources has completely altered expectations for teaching and learning. Around the world, academic institutions, professional associations, and corporations are striving to make better use of networks and databases to efficiently and effectively achieve learning and professional development goals. One of the ways they have chosen to pursue these goals is to make learning resources readily accessible to educators and learners through learning object repositories. Object repositories are seen as key enablers for bringing increased value to learning resources by providing opportunities for reuse, repurposing, or reengineering to suit a variety of purposes and end-user needs. Creating learning resources in object formats is seen as way to bring about increased flexibility, customization, ease of update, searchability, and manageability to rich stores of content and learning resources that are available from publishers or that have been created by faculty members or teachers.	http://www.canarie.ca/funding/elearning/lor.pdf
Paquette, Gilbert (no year). Instructional Engineering for Learning Objects Repositories Networks. Available online: http://www-clips.imag.fr/calie04/actes/Pa	Learning objects Learning object repositories, educational modelling languages,	Knowledge management in organizations, the learning objects paradigm and the advent of a new Web generation, the "Semantic Web", are major actual trends that reveal a new potential for a renewed distance learning pedagogy, but at a certain number of conditions. The first and foremost is the use of education modeling languages and instructional engineering methods to help decide how to assemble learning objects in meaningful learning and knowledge management	http://www-clips.imag.fr/calie04/actes/Paquette.pdf

quette.pdf.	instructional engineering, e-learning standards	environment. This article proposes a set of tools and some Instructional Engineering principles to help use learning object repositories to create learning/training designs that respond to pedagogical needs.	
Paquette, Gilbert, Léonard, Michel, Lundgren-Cayrol, Karin, Mihaila Stefan, & Gareau, Denis. (2006). Learning Design based on Graphical Knowledge-Modelling. Educational Technology & Society, 9 (1), 97-112.	Learning design Educational modeling, knowledge-based systems, graphic languages, knowledge modeling, competence-based learning design, IMS-LD, learning design repositories, knowledge engineering process	This chapter states and explains that a Learning Design is the result of a knowledge engineering process where knowledge and competencies, learning design and delivery models are constructed in an integrated framework. We present a general graphical language and a knowledge editor that has been adapted to support the construction of learning designs compliant with the IMS-LD specification. We situate LD within our taxonomy of knowledge models as a multi-actor collaborative system. We move up one step in the abstraction scale, showing that the process of constructing learning designs can itself be viewed as a unit-of-learning (or a "unit-of-design"): designers can be seen as learning by constructing learning designs, individually, in teams and with staff support. This viewpoint enables us to discuss and compare various "design plays". Further, the issue of representing knowledge, cognitive skills and competencies is addressed. The association between these "content" models and learning design components can guide the construction of learning designs and help to classify them in repositories of LD templates.	http://www.ifets.info/journals/9_1/9.pdf
Ertmer, Peggy A., Stepich, Donald A., York, Cindy S., Stickman, Ann, Wu, Xuemei (Lily), Zurek, Stacey, & Goktas, Yuksel (2008). How Instructional Design Experts Use Knowledge and Experience to Solve Ill-Structured Problems. *Performance Improvement Quarterly*, 21(1), pp 17-42. Available online at: http://www3.interscience.wiley.com/cgi-bin/fulltext/118479863/PDFSTART.	Instructional design	This study examined how instructional design (ID) experts used their prior knowledge and previous experiences to solve an ill-structured instructional design problem. Seven experienced designers used a think-aloud procedure to articulate their problemsolving processes while reading a case narrative. Results, presented in the form of four assertions, showed that experts (1) narrowed the problem space by identifying key design challenges, (2) used an amalgam of knowledge and experience to interpret the problem situation, (3) incorporated a mental model of the ID process in their problem analyses, and (4) came to similar conclusions about how to respond to the situation, despite differences in their initial conceptualizations. Implications for educating novice instructional designers are discussed.	http://www3.interscience.wiley.com/cgi-bin/fulltext/118479863/PDFSTART
Nicholson, Paul & Thalheim, Bernhard (2004). Culturally adaptive learning objects: challenges for educators and developers. Adapting to Changing Times and Needs. UNESCO – SEAMEO Conference, Bangkok, May 27-29, 2004. Available online at: http://www.is.informatik.uni-kiel.de/~thalheim/psfiles/UNESCO.2004.Bangkok.pdf.	Learning objects Cultural heritage and diversity, cultural artefacts	As globalisation and internationalisation increasingly impact on Education, there is an emerging awareness that there are significant economic benefits in adopting pre-designed (mainly western) 'learning objects' as the basis of curriculum design and implementation over developing locally created curricula and content. The potential dangers of such an approach include loss of cultural heritage and diversity, and consequent social dislocation, loss of intellectual capital, and forced alignment with externally imposed curricula. In this paper we argue that the major problem facing local courseware developers is that of representing cultural artefacts in their courseware. We discuss an emerging learning-object model that can be adopted to address this problem by providing a systematic way to approach implementing and representing cultural artefacts in courseware. This also provides a basis for some aspects of computer-based cultural preservation initiatives. We argue that while this approach may have higher short term development costs, the potential long term benefits to the society far outweigh short term considerations.	http://www.is.informatik.uni-kiel.de/~thalheim/psfiles/UNESCO.2004.Bangkok.pdf
Salter, Graeme & Stratti, Heidi (2004). Multiple Representations of Content in Web-Based Learning. Proceedings of IASTED International Conference WEB-BASED EDUCATION. February 16-18, 2004, Innsbruck, Austria, pp 143-	Teaching, learning Web-based education, multimedia, constructivism	Representing content in multiple ways is one of the key elements to a constructivist approach to teaching. The Web provides a unique environment to facilitate multiple representations. This paper looks at research to determine if learners actually make use of different representations when provided. The findings suggest we cannot assume that learners will necessarily do this, although this may change over time as they become more familiar with different formats and as the required plug-ins become more ubiquitous.	http://www-ice.upc.es/butlleti/innsbruck/416-072.pdf

147			
Zahorian, Stephen, Swart, William, Lakdawala, Vishnu, Leathrum, James, & González, Oscar (2000/May). A Modular Approach to Using Computer Technology for Education and Training. *International Journal of Computer Integrated Manufacturing*, 13(3), 286-297. Taylor and Francis Ltd.	Instructional design in teaching, education, training	This paper describes the approach taken to prepare Old Dominion University's undergraduate computer engineering curriculum for technology-based delivery. In order to improve on methods for student learning, technology is now being developed for use in both the classroom and for distance education. To accomplish this, the curriculum content is organized into learning modules which are more fine-grained 'chunks' of learning materials than a 3 credit college course. By carefully designing these learning modules, insuring, for example, well-defined learning objectives, a precedence relationship with other modules, assessment measures, and notational and structural consistency among modules, the modules can easily be reorganized to satisfy a variety of learning objectives. Once produced, a module can be used in a synchronous environment to support student learning in a traditional context, or be part of an asynchronous delivery system such as the Web. The key advantage of this modular structure lies in its flexibility. The investment made to produce the modules may now be recouped by using the modules in both on-campus and distance learning degree and non-degree activities, or by using the modules for performance support. Other advantages include the ability to easily update information in the curricula and the ability to use the best experts for a specific area. In this paper, this modular approach is described in more detail as applied to an undergraduate computer engineering program.	http://www.ws.binghamton.edu/zahorian/pdf/A%20MODULAR%20APPROACH%20TO%20USING%20COMPUTER%20TECHNOLOGY%20FOR%20EDUCATION%20AND%20TRAINING%20journal.pdf
Love, Kristina (2002). Scaffolding as a metaphor in disciplinary content and in multimedia architecture: A CD-ROM on Building Understandings in Literacy and Teaching. *Australian Journal of Educational Technology*, 18(3), 377-393.	Instructional design in teaching Multimedia architecture, CD-ROM	This paper outlines key decisions that were made in the design of a multimedia resource (a CD-ROM entitled 'BUILT') that develops preservice teachers' understandings about language, literacy and teaching. A major consideration in the design process was that the concept of scaffolding, central to the instructional content regarding learning and teaching through language, should also be operationalised in the instructional design of the CD-ROM. A second consideration was that preservice teachers be provided with authentic materials for observation, analysis and reflection and thus the operating structure of the CD-ROM conforms to the conditions for situated learning. A final consideration was that the hypermedia form of the resource be suitable to meet the needs of a variety of cohorts of users.	http://www.ascilite.org.au/ajet/ajet18/love.html
Stefaner, M., Dalla Vecchia, E., Condotta, M., Ternier, S., Wolpers, M., Specht, M., Apelt, S., Nagel, T., & Duval, E. (2007). MACE – enriching architectural learning objects for experience multiplication.	Education Architectural learning	Education in architecture requires access to a broad range of architectural learning material to develop flexibility and creativity in design. The learning material is compromised of digital information captured in textual and visual media including single images, videos, description of architectural concepts or complete architectural projects, i.e. digital artifacts on different aggregation levels. The repositories storing such information are not interrelated and do not provide unified access so that retrieval of architectural learning objects is cumbersome and time consuming. In this paper, we describe how an infrastructure of federated architectural learning repositories will provide unique, integrated access facilities for high quality architectural content. The integration of various types of content, usage, social and contextual metadata enables users to develop multiple perspectives and navigation paths that support experience multiplication for the user. A service–oriented software architecture that is based on open standards, and a flexible user interface design solutions based on widgets ensure easy integration and recombinability of contents, metadata and functionalities.	http://dspace.ou.nl/bitstream/1820/1137/1/MACE_ECTEL07_.pdf
Koper, Rob (2001). Modeling units of study from a pedagogical perspective: the pedagogical meta-model behind EML. Open University of the Netherlands. OTEC working paper.	Learning design	The title of this article could have been: where is the learning in e-learning? The promise of e-learning, and the enabling learning technologies, is to make learning experiences in all types of settings more effective, efficient, attractive and accessible to the learners. In this article I will address the topic of the pedagogical design of learning experiences. Learning experiences are offered mostly in chunks, like courses. These chunks (in the next paragraph we abstract them to the concept of 'units of study') are the major delivery units for e-learning. I will specifically address the analysis of pedagogical models we did in order to provide a meta-model from which we could build a notation for units of study.	http://dspace.ou.nl/bitstream/1820/36/1/Pedagogical%20metamodel%20behind%20EMLv2.pdf

McGreal, Rory (2004). Learning Objects: A Practical Definition. *International Journal of Instructional Technology and Distance Learning*, 1(9), 21-32.	Instructional design, instructional design in teaching Metadata	Learning objects make it unnecessary to have thousands of iterations of the same teaching point. Metadata makes it possible to select and integrate relevant learning experiences from a relatively small library of learning objects. Reusable learning objects permit lessons to be generated and customized for specific groups or even for individuals. Extensive research and development has led to a vocabulary of specialized terms to define learning objects. Rory McGreal provides a rationale to relate variations in terminology into a single practical definition of Learning Objects.	http://www.itdl.org/Journal/Sep_04/Sep_04.pdf#page=25 Print out
Sweller, John, van Merrienboer, Jeroen J.G., & Paas, Fred G.W.C. (1998). Cognitive Architecture and Instructional Design. *Educational Psychology Review*, 10(3), 251-296.	Instructional design	Cognitive load theory has been designed to provide guidelines intended to assist in the presentation of information in a manner that encourages learner activities that optimize intellectual performance. The theory assumes a limited capacity working memory that includes partially independent subcomponents to deal with auditory/verbal material and visual/2- or 3-dimensional information as well as an effectively unlimited long-term memory, holding schemas that vary in their degree of automation. These structures and functions of human cognitive architecture have been used to design a variety of novel instructional procedures based on the assumption that working memory load should be reduced and schema construction encouraged. This paper reviews the theory and the instructional designs generated by it.	PDF from Iwan Wopereis
Van Merriënboer, J.J.G., & Sweller, J. (2005). Cognitive load theory and complex learning: Recent developments and future directions. Educational Psychology Review, 17(2), 147-177.	Instructional design Cognitive architecture, complex learning, cognitive load, adaptive instruction	Traditionally, Cognitive Load Theory (CLT) has focused on instructional methods to decrease extraneous cognitive load so that available cognitive resources can be fully devoted to learning. This article strengthens the cognitive base of CLT by linking cognitive processes to the processes used by biological evolution. The article discusses recent developments in CLT related to the current view in instructional design that real-life tasks should be the driving force for complex learning. First, the complexity, or intrinsic cognitive load, of such tasks is often high so that new methods are needed to manage cognitive load. Second, complex learning is a lengthy process requiring learners' motivational states and levels of expertise development to be taken into account. Third, this perspective requires more advanced methods to measure expertise and cognitive load so that instruction can be flexibly adapted to individual learners' needs. Experimental studies are reviewed to illustrate these recent developments. Guidelines for future research are provided. Note: Includes interesting literature references.	PDF from Iwan Wopereis
Sweller, J., Van Merriënboer, J. J. G., & Paas, F. G. W. C. (1998). Cognitive architecture and instructional design. Educational Pscchology Review, 10, 251-296.	Instructional design Cognition, learning, problem solving	Cognitive load theory has been designed to provide guidelines intended to assist in the presentation of information in a manner that encourages learner activities that optimize intellectual performance. The theory assumes a limited capacity working memory that includes partially independent subcomponents to deal with auditory/verbal material and visual/2- or 3-dimensional information as well as an effectively unlimited long-term memory, holding schemas that vary in their degree of automation. These structures and functions of human cognitive architecture have been used to design a variety of novel instructional procedures based on the assumption that working memory load should be reduced and schema construction encouraged. This paper reviews the theory and the instructional designs generated by it.	http://www.springerlink.com/content/vj4917q523256673/fulltext.pdf
Van Merriënboer, J.J.G. & Kester, L. (2005). The four-component instructional design model: Multimedia principles in environments for complex learning. In R. E. Mayer (Ed.), The Cambridge handbook of multimedia learning (pp. 71-93). New York: Cambridge University Press.	Instructional design in teaching Multimedia learning environments	The Four-Component Instructional Design model claims that four components are necessary to realize complex learning: (1) learning tasks, (2) supportive information, (3) procedural information, and (4) part-task practice. This chapter discusses the use of the model to design multimedia learning environments and relates 14 multimedia principles to each of the four components. Students may work on learning tasks in simulated task environments, where relevant multimedia principles primarily facilitate a process of inductive learning; they may study supportive information in hypermedia systems, where principles facilitate a process of elaboration and mindful abstraction; they may consult procedural information in Electronic Performance Support Systems (EPSS), where principles facilitate a process of knowledge compilation; and, finally, they may be involved in part-task practice with drill & practice Computer Based Training (CBT) programs, where principles facilitate a process of psychological strengthening. Research implications and limitations of the presented	http://www.open.ou.nl/vor/Themaconferenties/2004/VORthemaconferentie2004_Multimediabook2.pdf

		framework are discussed.	
Van Merriënboer, J.J.G., Kirschner, P.A., & Kester, L. (2003). Taking the load off a learner's mind: Instructional design for complex learning. Educational Psychologist, 38(1), 5-13.	Instructional design	Complex learning aims at the integration of knowledge, skills, and attitudes; the coordination of qualitatively different constituent skills; and the transfer of what is learned to daily life or work settings. Recent instructional theories stress authentic learning tasks as the driving force for learning; but due to the complexity of those tasks, learning may be hampered by the limited processing capacity of the human mind. In this article we present a framework for scaffolding practice and just-in-time information presentation, aiming to control cognitive load effectively. We briefly describe a design model for complex learning consistent with cognitive load theory. Theoretical and practical implications of the presented framework are discussed. Note: Includes interesting literature references.	PDF from Iwan Wopereis
Van Merriënboer, J. J. G. (2007). Alternate models of instructional design: Holistic design approaches and complex learning. In R. A. Reiser & J. V. Dempsey (Eds.), Trends and issues in instructional design and technology (2nd Ed.)(pp. 72-81). Upper Saddle River, NJ: Merrill.	Instructional design		Copy
Merrill, M. D. (2002). First principles of instructional design. *Educational Technology Research & Development*, 50(3), 43-59.	Instructional design		http://cito.byuh.edu/merrill/text/papers/5FirstPrinciples.PDF
Van Merriënboer, J.J.G. & Kester, L. (2007). Whole-task models in education. In J.M. Spector, M. D. Merrill, J.J.G. van Merriënboer, & M.P. Driscoll (Eds.), Handbook of research on educational communications and technology (3rd Ed.) (pp. 441-456). Mahwah, NJ: Erlbaum/Routledge.	Instructional design Goal-Based Scenarios	Whole-task models support the development of educational programs for students who need to learn and transfer professional competences or complex cognitive skills to an increasingly varied set of real-world contexts and settings. They are a reaction to traditional atomistic approaches in which complex contents and tasks are reduced into increasingly simpler elements until reaching a level where the distinct elements can be transferred to the learners through presentation or practice. These approaches work well if there are few interactions between the elements, but they do not work well if the elements are interrelated because the whole is then more than the sum of its parts. Whole-task models basically try to deal with complexity without losing sight of the relationships between elements. This chapter briefly discusses the history of whole-task models. They are rooted in motor learning and sports, *andragogy* and adult learning, and Gestalt psychology. The characteristics of whole-task models in the field of educational communications and technology are also discussed. Elaboration theory, goal-based scenarios, and four-component instructional design are presented as three representative examples of whole-task models. We present empirical evidence for the effectiveness of the whole-task approach and the three example models. We conclude with a summary of findings and directions for future research on whole-task models.	PDF from Iwan Wopereis
Spoelstra, H., Matera, M., Rusman, E., Van Bruggen, J., & Koper, R. (2006). Bridging the gap between instructional design and double loop learning. Proceedings of IV International Conference on Multimedia and Information and Communication Technologies in Education (m-ICTE2006). November,	Instructional design e-learning, atomic actions, workflow, double loop learning	There seems to be a gap between instructional design, as implemented in workflow-like e-learning systems, and double loop learning, because the former predefines educational processes and the latter assumes these processes can be reflected upon and can be modified by the learners. Instructional designs implemented in workflow-like e-learning systems that use modelling standards enable portability of the designs. While maintaining this advantage of portability, the COOPER environment aims to make room for learning reflection and influence as well. We will present a pedagogical scenario called "Virtual Company", which uses double loop learning extensively, to demonstrate the feasibility of our proposed solution. We provide learners with "atomic actions", that can be used to create and revise processes "on the fly",	http://dspace.ou.nl/bitstream/1820/870/1/GapID-DLL_Final.pdf

22-25, 2006, Seville, Spain.		thus enabling double-loop learning.	
Fardanesh, Hashem (2006). A Classification of Constructivist Instructional Design Models Based on Learning and Teaching Approaches. Available online at: http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/d0/c2.pdf	Instructional design Constructivist learning, teaching methods, content analysis	In a conceptual-analytical study using a deductive classificatory content analysis method ten constructivist instructional design models were selected, and learning/teaching approaches within each model were appraised. Using the original writings of the originators of each design model, the learning and teaching approaches employed or permitted to be used it each model were classified as: (1) individual; (2) group; and (3) dual-purpose approaches. A six-category classification of constructive instructional design models was achieved. Findings show that none of the models has both dual-purpose teaching/learning approaches, and in teaching and learning approaches, most of the models fall in the "individual" category, and only few models fall in the "group" category with regard to teaching and learning approaches. Note: Includes interesting literature references.	http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1b/d0/c2.pdf
Francis, David & Murphy, Elisabeth (2008). Instructional designers' conceptualisations. of learning objects. *Australasian Journal of. Educational Technology*. 2008, 24(5), 475-486.	Instructional design	The purpose of the study reported on in this paper was to gain insight into how instructional designers conceptualise learning objects (LOs) and their attributes. It aimed to identify the range and types of conceptualisations of LO attributes held by a group of designers. Data were collected during two phases of semi-structured phone interviews with 10 instructional designers working in Canadian colleges and universities. Open, axial and selective coding were used to analyse data. Designers identified the following attributes of LOs: digital, interactive, pedagogically purposeful, pedagogically worthwhile, pedagogically assessable, usable, reusable, peer reviewable and granular. Designers conceptualised LOs and their attributes with more of a focus on pedagogical best practices rather than a focus on technical definitions of LOs. Note: Includes a literature review of learning objects and instructional design. Have interesting literature references.	http://www.ascilite.org.au/ajet/ajet24/francis.pdf
Mayer, Richard E. (2003/April). The Promise of Multimedia Learning: Using the Same Instructional Design Methods Across Different Media. *Learning and Instruction*, 13(2), 125-139	Instructional design Computer-based learning (CBL), computer-based instruction (CBI), on-line training, multimedia learning	Multimedia learning occurs when students build mental representations from words and pictures that are presented to them (e.g., printed text and illustrations or narration and animation). The promise of multimedia learning is that students can learn more deeply from well-designed multimedia messages consisting of words and pictures than from more traditional modes of communication involving words alone. This article explores a program of research aimed at determining (a) research-based principles for the design of multimedia explanations—which can be called methods, and (b) the extent to which methods are effective across different learning environments—which can be called media. A review of research on the design of multimedia explanations conducted in our lab at Santa Barbara shows (a) a multimedia effect—in which students learn more deeply from words and pictures than from words alone—in both book-based and computer-based environments, (b) a coherence effect—in which students learn more deeply when extraneous material is excluded rather than included—in both book-based and computer-based environments, (c) a spatial contiguity effect—in which students learn more deeply when printed words are placed near rather than far from corresponding pictures—in both book-based and computer-based environments, and (d) a personalization effect—in which students learn more deeply when words are presented in conversational rather than formal style—both in computer-based environments containing spoken words and those using printed words. Overall, our results provide four examples in which the same instructional design methods are effective across different media.	http://www.sciencedirect.com/science?_ob=MImg&_imagekey=B6VFW-461XHHD-4-5&_cdi=6021&_user=4127915&_orig=search&_coverDate=04%2F30%2F2003&_sk=999869997&view=c&wchp=dGLbVlb-zSkWz&md5=173ab666e623eb28dc5e1c0b76e2e9e3&ie=/sdarticle.pdf
Merrill, M. David, Drake, Leston, Lacy, Mark J., Pratt, Jean, & the ID2 Research Group (1966). Reclaiming Instructional Design. *Educational Technology*. 36(5), 5-7.	Instructional design, education	Education and its related disciplines continue to flutter this way and that by every philosophical wind that blows. In an uncertain science and technology, unscientific theories flourish. People are anxious for answers. When answers are slow in coming, uncertain in statement, and difficult to find; then the void is filled with wild speculation and philosophical extremism. This brief statement attempts to make clear our belief that instruction is a science and that instructional design is a technology founded in this science. We attempt to identify some of the assumptions underlying the science-based technology of instructional design, and to clarify its role in the larger context of education and social change.	http://cito.byuh.edu/merrill/text/papers/Reclaiming.PDF

Bennett, S., Lockyer, L. & Agostinho, S. (2004). Investigating how learning designs can be used as a framework to incorporate learning objects. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds), Beyond the comfort zone: Proceedings of the 21st ASCILITE Conference (pp. 116-122). Perth, 5-8 December. Available online at: http://www.ascilite.org.au/conferences/perth04/procs/bennett.html	Learning design, learning objects	Much of the current research and development efforts related to learning objects focus on the concept of reuse from a technical perspective, particularly in terms of technical standards for interoperability. Yet, there is little research being conducted that investigates how learning objects can be reused from a pedagogical perspective. It is necessary to develop a deeper understanding of the processes teachers undertake to make use of learning objects in their teaching. This paper reports the current progress of a project that is addressing this gap by investigating how tertiary teachers make use of generic learning designs as a framework for incorporating learning objects into their subjects.	http://www.ascilite.org.au/conferences/perth04/procs/bennett.html
Agostinho, S., Bennett, S., Lockyer, L., & Harper, B. (2003). Integrating Learning Objects with Learning Designs. In G.Crisp, D.Thiele, I.Scholten, S.Barker and J.Baron (Eds), Interact, Integrate, Impact: Proceedings of the 20th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education (pp. 571-574). Adelaide, 7-10 December 2003.	Instructional design, learning designs, learning objects	The premise underlying the concept of a learning object is that it can be reused. Current research and development efforts focus on establishing standard ways to annotate learning objects using metadata schemas so that they can be retrieved easily. There is, however, a pressing need for research and development work to investigate how learning objects can be reused in a pedagogically appropriate way. This work-in-progress paper describes a project that aims to address this gap by developing a framework to assist teachers and instructional designers incorporate learning objects into generic learning designs they adapt to suit their educational contexts.	http://www.ascilite.org.au/conferences/adelaide03/docs/pdf/571.pdf
Bennett, S. (2005). In Jan Herrington (Ed.), Authentic Learning Environments in Higher Education (pp. 120-134). Idea Group Inc (IGI).	Learning design Learning environment		http://books.google.nl/books?hl=de&lr=&id=7zfLKFaEKtIC&oi=fnd&pg=PA120&dq=autor:Sue+autor:Bennett&ots=Gx4kGeYqrR&sig=AVbdMt8LlQ3RJRkGDsY0q9Opluc#PPA120,M1
Harper, B, Agostinho, S, Bennett, S et al (2005). Constructing high quality learning environments using learning designs and learning objects, 5th IEEE International Conference on Advanced Learning Technologies (ICALT'05), 5-8 July 2005 (pp. 266-270). Copyright IEEE 2005.	Learning design, learning objects Learning environment	Designing learning experiences supported by Information and Communication Technology (ICT) is becoming an important skill for all academics in the higher education sector. With a range of "quality" measures being implemented and foreshadowed by government, including "dollars" linked to student learning outcomes, all academics will be increasingly asked to examine their instructional strategies and to offer high quality learning opportunities. Sharing learning resources is seen as one strategy to help academics in this change process. As such, online repositories of learning objects are flourishing to encourage the concept of reuse. However, what is lacking are tools to support academics in designing high quality learning environments that incorporate learning objects. This paper presents a prototype tool that uses the concept of a "learning design" as the framework to assist academics in the design process and demonstrates how learning objects can be incorporated.	http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1001&context=edupapers
Ellmers, G.; Foley, M.; and Bennett, S. (2008) "Graphic Design Education: A Revised Assessment Approach to Encourage Deep Learning," Journal of University Teaching & Learning Practice: Vol. 5: Iss. 1, Article 7. Available at:	Education Design process	In this paper we outline the review and iterative refinement of assessment procedures in a final year graphic design subject at the University of Wollongong. Our aim is to represent the main issues in assessing graphic design work, and informed by the literature, particularly 'notions of creativity' (Cowdroy & de Graaff, 2005), to develop and incorporate assessment procedures that allow creative ability to be assessed with greater transparency and objectivity. In the first iteration we developed a structure to standardise and clarify the existing model for the subject. Once this structure was in place we identified issues that would benefit from a review of the literature on assessment in the creative disciplines and the	http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1063&context=jutlp

http://ro.uow.edu.au/jutlp/vol5/iss1/7		broader field of pedagogy. We marked the shift from surface approaches to learning to deep approaches to learning (Moon, 1999) at the point where we identified gaps in the learning outcomes. Our response was to move the focus from the outcome to the process and to introduce a staged assessment procedure with a stronger emphasis on formalised reflection, cycling throughout the design process. We divided the learning process into two streams: thinking and making as a means to clarify facets of learning. As we continue to refine this model we note and respond to the relationship between assessment and learning. We propose ideas for future investigation, based on identifying levels of design thinking achieved by students in the most recent iteration of the program, and how these might be improved.	
Bennett, S.J., Agostinho, S., Lockyer, L., Kosta, L.K., Jones, J., & Harper, B.M., Understanding university teachers' approaches to design, in Luca, J & Weippl, E (Eds), Proceedings of ED-MEDIA 2008 World Conference on Educational Multimedia, Hypermedia & Telecommunications, Chesapeake, Virginia, Association for the Advancement of Computing in Education (AACE), 2008, (pp. 3631-3637).	Education Design process	Although there has been significant research into approaches to teaching in higher education, comparatively little is known about university teachers' approaches to design. This paper presents preliminary findings from a study that is investigating the design processes of Australian university academics across disciplines in the Arts, the Sciences and the Professions. A summary of the design processes of two Australian university teachers in the Sciences is presented. The purpose of this paper is to provide a brief background to the study and discuss the preliminary insights gained from these two individuals.	http://ro.uow.edu.au/cgi/viewcontent.cgi?article=1066&context=edupapers

Instructional Design – Books

Literature Reference	Keywords	Abstract	URL/Resource
Dijkstra, S., Tennyson, Robert D., Schott, Franz, & Seel, Norbert (1997). Instructional Design: International Perspective. Mahwah, NJ: Erlbaum.	Instructional design in teaching	Instructional Design: International Perspectives, Volumes 1 and 2, will serve as a standard reference for education and psychology scholars, instructional designers and graduate students in the field of instructional design theory, research, and practice. These two books collect the rich variety of theories and applications that form the foundation for this field. Volume 1: Theory, Research, and Models identifies and defines the theoretical and philosophical research, and models of instructional design. Volume 2: Solving Instructional Design Problems bridges the gap between instructional design foundations and applications. The authors represent a wide range of internationally known scholars.	http://books.google.nl/books?id=sbyqnfeWQbAC&hl=en
Spector, Michael J. Et al. (2008). Handbook of Research on Educational Communications and Technology, 3rd Edition. New York: Routledge, Taylor & Francis Group.	Education	Sponsored by the Association of Educational Communication and Technology (AECT), the third edition of this groundbreaking handbook continues the mission of its predecessors: to provide up-to-date summaries and syntheses of recent research pertinent to the educational uses of information and communication technologies. The new edition is organized into the following six sections: foundations, strategies, technologies, models, design and development, and methodological issues.	Some articles in copy; Book has Tamara Van Gog, OUNL
Fallows, Stephen & Bhanot, Rakesh (2005). Quality Issues in ICT-based Higher Education. New York: Routledge.	Education	Whereas the editors' last book, "Educational Development Through Information and Communications Technology, " covered how to best implement ICT program, this invaluable book provides advice on how to ensure educational quality is maintained when ICT approaches are successfully adopted. Issues of quality touch on every part of higher education, but those using ICT to deliver the curriculum are presented with many unique considerations. This book includes contributions from leading authors around the world, who scrutinize the implications of using institution-wide ICT in teaching strategy and examine how quality assurance can be embedded in the development of ICT-based materials. Contents include: the impact of initiatives from external quality assurance agencies; quality in distance learning ICT program; assessment using	http://books.google.nl/books?id=h9OC_A0dG_oC&hl=en

		ICT-based approaches; and the problem of plagiarism and the opportunities for cheating provided by ICT. Contributors offer practical advice on providing professional support for those using ICT in teaching and learning, covering common problems such as dealing with ICT anxiety, ICT support for postgraduate supervision and support through e-mentoring.	
Richey, Rita C., Fields, Dennis C., & Foxon, Marguerite (2001). Instructional Design Competencies: The Standards, 3rd Edition. Syracuse, NY: ERIC Clearinghouse on Information & Technology, Syracuse University.	Instructional design Competencies	In 1986, the International Board of Standards for Training, Performance, and Instruction (IBSTPI) published the first edition of "Instructional Design [ID] Competencies: The Standards." It was the culmination of work that began in 1978. In this third edition, IBSTPI presents its latest view of the competencies of instructional designers. It is a greatly expanded view that reflects the complexities of current practice and technology, theoretical advancements, and the social tenor of the times. The level of proficiency described in the 1986 Competencies was taken to represent an instructional designer who would probably have at least three years of experience in the field beyond entry-level training. The current revision takes this notion considerably further in two ways. First, it discriminates between the essential and the advanced levels. Second, it discriminates between competencies which are universally recognized as required of all practitioners and those which have broad but not universal support. The current edition has added a section called "Professional Foundations." This section explicitly recognizes the importance of a knowledge base for ID and the professional responsibility practitioners have for career-long learning and update of that knowledge base. This recognition of knowledge as a foundation to practice was left implicit in the first version. The current revision has also found a way to recognize the importance of technological competence for the practitioner while continuing to recognize both the volatility and the context-specificity of expertise with any particular technology. The section now called "Implementation and Management" represents a considerable strengthening of the intent of the original. This represents both a better awareness of the role these competencies play in ID and also the increasing importance of ID in the success of knowledge-based enterprises, especially in business environments. Chapters are: (1) "Instructional Design Competence"; (2) "The 2000 IBSTPI Instructional Design Competencies"; (3) "The ID Competencies: Discussion and Analysis"; (4) "The Role and Use of ID Competencies"; (5) "The Competencies and ID Specialization"; and (6) "The Competency Validation Research." Appendices include the 1986 ID Competencies and Performance Statements, a glossary, bibliography, IBSTPI Code of Ethical Standards for Instructional Designers, and list of organizations participating in Competency validation.	http://eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/2b/6d/70.pdf
Van Merrienboer, J.J.G., & Kirschner, P.A. (2007). Ten steps to complex learning. Mahwah, NJ: Erlbaum.	Instuctional design		MRG book
Van Merriënboer, J.J.G. (1997). Training complex cognitive skills. Englewood Cliffs, NJ: Educational Technology.			
Reigeluth, Charles M. (Ed.). (1999). Instructional-design theories and models: A new paradigm of instructional theory, Volume II. Hillsdale, N. Lawrence Erlbaum Associates. Volume III in February 2009!	Instructional design Instructional theories and models, GBS	Instructional theory describes a variety of methods of instruction (different ways of facilitating human learning and development) and when to use—and not use—each of those methods. It is about how to help people learn better. This volume provides a concise summary of a broad sampling of new methods of instruction currently under development, helps show the interrelationships among these diverse theories, and highlights current issues and trends in instructional design. It is a sequel to Volume I of Instructional-Design Theories and Models, which provided a "snapshot in time" of the status of instructional theory in the early 1980s. Dramatic changes in the nature of instructional theory have occurred since then, partly in response to advances in knowledge about the human brain and learning theory, partly due to shifts in educational philosophies and beliefs, and partly in response to advances in information technologies. These changes have made new methods of instruction not only possible, but also necessary in order to take advantage of new	http://books.google.nl/books?id=AbJc4Kg6XQoC&hl=en (look also at Web resources) UBI SoWi-Fakultätsbibl. 573-Ins2

		instructional capabilities offered by the new technologies. These changes are so dramatic that many argue they constitute a new paradigm of instruction, which requires a new paradigm of instructional theory. In short, there is a clear need for this Volume II of Instructional-Design Theories and Models. To attain the broad sampling of methods and theories it presents, and to make this book more useful for practitioners and graduate students interested in education and training, this volume contains twice as many chapters, but each are half as long as those in Volume I, and the descriptions are generally less technical. Several unique features are provided by the editor to help readers understand and compare the theories in this book. Chapter I, which discusses the characteristics of instructional theory and the nature of the new paradigm of instruction, helps the reader identify commonalities across the theories. Chapter forewords, which summarize the major elements of the instructional-design theories, are useful for reviewing and comparing theories, as well as for previewing a theory to decide if it is of interest, and for developing a general schema that will make it easier to understand. Editor's notes provide additional help in understanding and comparing the theories and the new paradigm of instruction to which they belong. Units 2 and 4 have introductory chapters to help readers analyze and understand the theories in those units.	
Duffy, Thomas M. (Ed.). (1993). Designing environments for constructive learning. Proceedings of the NATO Advanced Research Workshop on the Design of Constructivist Learning Environments: Implications for Instructional Design and the Use of Technology, held at the Catholic University Leuven, Belgium, May 14-18, 1991. Berlin: Springer.	Instructional design Constructivist learning		UBI SoWi-Fakultätsbibl. 573-Desi
Lockwood, Fred (1998) The design and production of self-instructional materials. London: Kogan Page.	Instructional design in teaching Self-instructional material, learning, teaching	Designed to help those who are planning to produce open or flexible learning materials, particularly trainers who must work on their own with little support or encouragement. All aspects of the design and production of materials is examined, including the role of audio and video cassettes.	http://books.google.com/books?id=hpg9AAAAIAAJ UBI GeiWi-Fakultätsbibl.,9. 600/DP 2050 L817
Gagne,Robert M., Briggs, Leslie J. & Wagner, Walter W. (1992). Principles of instructional design. ORT: Harcourt-Brace-College Publishers. 4th Edition, 2004.	Instructional design in teaching	Describes a rationally consistent basis for instructional design based in cognitive psychology and information-processing theory. Prepares teachers to design and develop a course, unit, and module of instruction; outlines the nine stages of instructional design procedure; and integrates current research and practice in the movement toward performance systems technology.	UBI SoWi-Fakultätsbibl. 507-Gagn http://www.amazon.com/gp/reader/0534582842/ref=sib_dp_pt#reader-link
Ghaoui, Claude (Ed.) (2004). E-Education Applications: Human Factors and Innovative Approaches. Hershey, PA and London: Information Science Publishing.	Education	New technology has made learning accessible to all. The advent of online learning, in particular, introduces new problems and raises different issues than traditional learning while opening new opportunities. *E-Education Applications: Human Factors and Innovative Approaches* highlights the advantages of online learning and the problems that face individuals and institutions implementing. The book not only raises awareness of this topic but also promotes good practices, and shares and evaluates experiences of others who have implemented distance education programs.	UBI SoWi-Fakultätsbibl. 577-Ghao
Mithaug, Dennis E., Mithaug, Deirdre K., Agran, Martin, Martin, James E., & Wehmeyer Michael L.	Education	Table of Contents: Direct instruction vs. self-instruction: what's the difference? Your instruction teacher- or student-directed?	UBI GeiWi-Fakultätsbibl.,9. 600/CX 3000 M684

(2007). Self-Instruction Pedagogy: How to Teach Self-Determined Learning. Springfied, Ill.: Charles C.Thomas.		How students develop learner control How students adjust to learner control How students direct their learning How self-determined learning increases at school and work Why teachers are reluctant to choose choice Will you choose self-instruction pedagogy?	
Newby, Timothy J., Stepich, Donald R., Lehman, James D., & Russell, James D. (Eds.). (1999). Instructional Technology for Teaching and Learning: Designing Instruction, Integrating Computers, and Using Media. 2nd Edition. ORT: Prentice Hall.	Instructional design in teaching	This book successfully integrates instructional design principles, methods, media, and computing, and it uses a learner-centered approach that focuses on how to design solid technology-enhanced instruction that increases learning. It details the basic theories and applications of educational technology in a reader-engaging format. Includes a new chapter, *Using the Internet and Distance Education, which is particularly timely given the explosion of on-line technology. For educators and school administrators.* Unique in its approach, this text integrates the three general areas of Instructional Design, Media, and Computers in a single volume. It shows teachers how instruction is designed, developed, and improved; explains the types and uses of different media formats (especially the use of the personal computer); and shows them how to integrate and apply specific approaches, strategies, techniques, media, and technology to have maximum impact on student learning. -- This text refers to an out of print or unavailable edition of this title.	
Pahl, Claus (Ed.?) (2007). Architecture Solutions for E-Learning Systems. Hershey, ORT: IGI Global.	Instructional design, learning objects	E-learning is now a prominent form of education that allows for the creation of tailored solutions for different learning styles and requirements. An essential element of e-learning, learning technology systems (LTS) manage the learning environment, learning objects, and resource infrastructures. *Architecture Solutions for E-Learning Systems* provides fundamental research on the architecture of LTS, discussing such issues as common LTS structures, as well as solutions for specific instructional forms such as knowledge-based, distributed, or adaptive applications of e-learning. Researchers, practitioners, and scholars in such fields as learning-content software development, educational technologies, and e-learning will find this book an invaluable resource.	UBI SoWi-Fakultätsbibl. 577-Pahl? Not available
Piskurich, George M. (2006). Rapid instructional design: learning ID fast and right. 2nd Edition. San Francisco, CA: Pfeiffer.	Instructional design		UBI GeiWi-Fakultätsbibl.,9. 600/DP 2600 P677
Wilson, Brent G. (Ed.). (1998). Constructivist Learning Environments: Case Studies in Instructional Design. Englewood Cliffs, NJ: Educational Technology.	Instructional design		UBI SoWi-Fakultätsbibl. 573-Wils
Mayer, Richard E. (Ed.). (2005). The Cambridge Handbook of Multimedia Learning. New York: Cambridge University Press.	Instructional desing Multimedia learning		Copies from chapter 1, 5, 14, 19, 22, 24, 30; Book has Tamara Van Gog, OUNL
Dijkstra, Sanne, Krammer, Hein P.M., & van Merriënboer, Jeroen J.G. (Eds.). (1991). Instructional Models in Computer-based Learning Environments: [proceedings of the NATO Advanced Research Workshop on Instructional	Instructional design Computer-based learning, instructional models	In the last decade there have been rapid developments in the field of computer-based learning environments. A whole new generation of computer-based learning environments has appeared, requiring new approaches to design and development. One main feature of current systems is that they distinguish different knowledge bases that are assumed to be necessary to support learning processes. Current computer-based learning environments often require explicit representations of large bodies of knowledge, including knowledge of instruction. This book focuses on instructional models as explicit, potentially implementable representations	Book has Tamara Van Gog, OUNL

Models in Computer-Based Learning Environments, held at the University of Twente, the Netherlands, July 1 - 4, 1991]. New York: Springer.		of knowledge concerning one or more aspects of instruction. The book has three parts, relating to different aspects of the knowledge that should be made explicit in instructional models: knowledge of instructional planning, knowledge of instructional strategies, and knowledge of instructional control. The book is based on a NATO Advanced Research Workshop held at the University of Twente, The Netherlands in July 1991.	
Elen, Jan & Clark, Richard E. (Eds.). (2006). Handling Complexity in Learning Environments: Theory and Research. Oxford: Elsevier.	Instructional design, learning		Copies from chapter 3, 10, 11, 12; Book has Tamara Van Gog, OUNL
Duffy, Thomas M. & Jonasson, David H. (Eds.). (1992). Constructivism and the Technology of Instruction: A Conversation. Hillsdale, NJ: Erlbaum.	Instructional design Constructivism	This book is about the implications of constructivism for instructional design practices, and more importantly, it is about a dialogue between instructional developers and learning theorists. Working with colleagues in each discipline, the editors were amazed to find a general lack of familiarity with each others' work. From an instructional design perspective, it seems that the practice of instructional design must be based on some conception of how people learn and what it means to learn. From a learning theory perspective, it seems obvious that the value of learning theory rests in the ability to predict the impact of alternative learning environments or instructional practices on what is learned. Thus the interchange of ideas between these disciplines is essential. As a consequence of both the information rich environment and the technological capability, business is seen moving away from a fixed curriculum and toward providing information and instruction when it is needed. These changes bring about a window of opportunity establishing a dialogue that will provide for a richer understanding of learning and the instructional environment required to achieve that learning. The editors hope that this book is the beginning of the conversation and that it will serve to spur continued conversation between those involved in learning theory and those involved in the design of instruction.	Copies from chapter 1, 2, 5, 7, 8, 10, 13, 17, 18; Book has Tamara Van Gog, OUNL

Instructional Design – Web Resources

Website Title	Keywords	Abstract	URL/Resource
Best Practices: A Literature Review of Effective Instructional Design and Learner Processes in Acquiring Second/Foreign Language at Primary and Secondary Levels. Website: http://cd1.edb.hkedcity.net/cd/scolar/html/projects/reportindex/rindex_e0698-4_en.htm.	Instructional design in teaching Best practices	Website with online resources (PDFs): Part1.pdf (2.1M); Part2.pdf (4.6M); Part3.pdf (588k); Part4.pdf (450k); Appendix.pdf (4.5M); Bibliography.pdf (5.5M).	http://cd1.edb.hkedcity.net/cd/scolar/html/projects/reportindex/rindex_e0698-4_en.htm
Reigeluth, Charles M. (Ed.). (1999). Instructional-Design Theories Home page. Last updated on Oct. 24, 2000 by Byungro Lim. Website: http://www.indiana.edu/~idtheory/home.html.	Instructional design	This site offers a variety of information about instructional theory and models. As the index on the left of this screen indicates, it offers: • Information about Instructional-Design Theories and Models, Volume I: An Overview of their Current Status, (affectionately called the Green Book). Publ. 1983 by Erlbaum Assoc. • Information about Instructional Design Theories and Models, Volume II: A New Paradigm of Instructional Theory, (affectionately called the Green Book II). Publ. 1999 by Erlbaum Assoc. • Some modules about basic methods of instruction, written by Charles M. Reigeluth. • Links to other sites related to instructional theory. • A link to an Electronic Performance Support System to help	http://www.indiana.edu/~idtheory/home.html

		teachers select and apply new approaches to instruction for their own teaching (Not operational yet). • Comments about instructional theories from visitors to this web site.	
Reigeluth, Charles M. (Ed.). (1999). Instructional-design theories and models: A new paradigm of instructional theory, Volume II. Mahwah, NJ: Lawrence Erlbaum Associates. Website: http://www.indiana.edu/~idtheory/green2.html.	Instructional design Theories, models	This volume provides a concise summary of a broad sampling of new methods of instruction currently under development, helps show the interrelationships among these diverse theories, and highlights current issues and trends in instructional design. It is a sequel to Volume I of Instructional-Design Theories and Models, which provided a "snapshot in time" of the status of instructional theory in the early 1980s. Dramatic changes in the nature of instructional theory have occurred since then, partly in response to advances in knowledge about the human brain and learning theory, partly due to shifts in educational philosophies and beliefs, and partly in response to advances in information technologies. These changes have made new methods of instruction not only possible, but also necessary in order to take advantage of new instructional capabilities offered by the new technologies. These changes are so dramatic that many argue they constitute a new paradigm of instruction, which requires a new paradigm of instructional theory.	http://www.indiana.edu/~idtheory/green2.html
Mergel, Brenda (1998). Instructional Design & Learning Theory. Website: http://www.usask.ca/education/coursework/802papers/mergel/brenda.htm.	Instructional design Learning Theory		http://www.usask.ca/education/coursework/802papers/mergel/brenda.htm
Patsula, Peter J. Applying Learning Theories to Online Instructional Design. Website: http://www.patsula.com/usefo/webbasedlearning/tutorial1/learning_theories_full_version.html.	Instructionanl design Learning theories	The following tutorial consists of five learning modules. Each module describes a learning theory and how that learning theory can be applied to improving online teaching and training materials. Each module features: - a description of a well known learning theory; - a practical example of how the theory and related strategies can be applied to a particular instructional objective or web-design problem; and - a list of related pedagogical and web-design strategies as researched in the literature. This tutorial has been designed for MDDE 621 students studying in the Masters of Distance Education program at Athabasca University.	http://www.patsula.com/usefo/webbasedlearning/tutorial1/learning_theories_full_version.html

Instructional Design – Journals

Instructional Science (An International Journal of the Learning Sciences, http://www.springerlink.com/content/0020-4277);

Journal of the Learning Sciences (http://www.informaworld.com/smpp/title~content=t775653672~db=all);

Distance Education (http://www.informaworld.com/smpp/title~content=t713412832~link=cover?db=all&sessioncountry=713126895);

The Journal of Distance Education / Revue de l'Éducation à Distance (http://www.jofde.ca/index.php/jde);

Australasian Journal of Educational Technology (AJET, http://www.ascilite.org.au/ajet/about/ajetsearch.html);

Computers & Education;

Architectural Engineering and Design Management (http://earthscanjournals.com/aedm/default.htm);

Journal for Education in the Built Environment (JEBE, http://cebe.cf.ac.uk/jebe/index.php);

Intelligent Buildings International (http://earthscanjournals.com/inbi/default.htm).

Keywords

Instructional design;
Instructional design in teaching;
Learning design;
Learning objects;
Learning objects repositories;
Competence-based Learning;
Education;
Training;
Constructivism