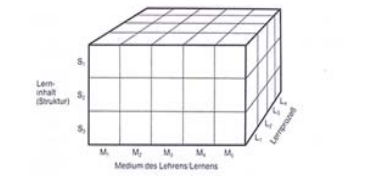
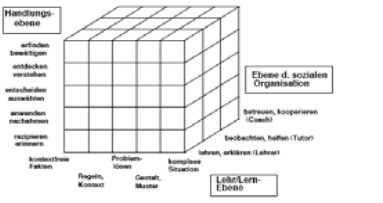


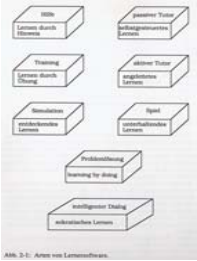
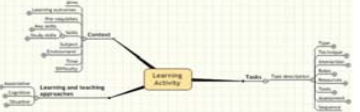


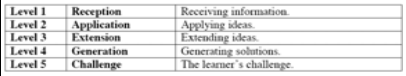

	Main Author(s)	Relevant References	Pictorial presentation of schema	Name of Schema	Keywords	Short Description and Theoretical Background of Schema	Purpose of the development/Problem addressed
1	Aebli	Aebli, H. (1991). Zwölf Grundformen des Lehrens: eine allgemeine Didaktik auf psychologischer Grundlage; Medien und Inhalte didaktischer Kommunikation, der Lernzyklus (6 ed.). Stuttgart: Klett-Cotta.	 <p>Figure on page 25.</p>	Grundformen des Lehrens/unterrichtlichen Geschehens (Basic forms of teaching and instructional events)	content (Lerninhalt) medium (Medium des Lehrens/Lernens) learning process (Lernprozess)	The basic forms were derived from a course on the theory and practice of teaching, where the students then use the basic forms, and which has been running for many years (p. 15). Aebli regards his system as a modern "Formalstufentheorie" (formal level theory). The idea of Formalstufen, Aebli derived from Herbart students, especially Ziller. The system distinguishes three dimensions: media (5 parts: telling/lecturing, demonstrating/imitating, joint object & picture studying, reading, and writing), content (3 parts: action schemas (Handlungsschemata), operations, and terms), and function in the learning process (4 parts: problem-solving build-up, working through, practicing/repeating, and applying) (p. 24). Aebli thus distinguishes 60 basic forms of teaching, one for each cell of the three dimensions and its parts. The author states himself that he never tried to fill these sixty cells by describing its values (p. 25).	The basic forms are to be "practical", to serve as rules for the planning of teaching and for the type of behavior that the instructor should have before students (p. 13).
2	Baumgartner	Baumgartner, P. (2001). Webbasierte Lernumgebungen -- neue Ansätze zum Politiklernen. In Bundeszentrale für politische Bildung (Ed.), Politikunterricht im Informationszeitalter. Medien und neue Lernumgebungen (pp. 90-104). Bonn. Retrieved on August 14, 2008 from http://www.peter.baumgartner.name/material/article/webbasierte_lernumgebungen.pdf/download	 <p>Figure on page 3 of online version.</p>	Heuristisches Lehr- und Lernmodell (Heuristic teaching and learning model)	The model ought to serve as a heuristic aid for instructional planning and to identify pedagogic concepts in seemingly neutral objects (p. 3 of online version). The author does not state, how the model was developed.	The purpose is NOT for the model to be a decision or prescription model (Vorgehensmodell). It is a heuristic aid (heuristische Hilfe) for pedagogical planning and to retrieve pedagogic concepts that are captured in seemingly neutral objects, for instance, in a learning platform (p. 3 of online version).	
3	Bloh	Bloh, E. (2005). Grundzüge und Systematik einer Methodik netzbasierter Lehr-Lernprozesse. In B. Lehmann & E. Bloh (Eds.), Online Pädagogik, Bd.2 (pp. 7-85). Baltmannsweiler: Schneider Verlag Hohengehren.	 <p>This figure depicts Meyer's schema. Bloh based his schema on Meyer's. Figure by Marc Jelitto (2006).</p>	Handlungsfigurenformen: Initiierungsformen (Initiating forms) Präsentationsformen (Presentation forms) Rezeptionsformen (Receptive forms) Diskussionsformen (Discussion forms) Explorationsformen (Exploration forms) Kreativitätsformen (Creativity forms)	The problem of method as Bloh calls it, may not be reduced to a one-dimensional perspective (e.g. what method works for what content or goal) but must be placed in a complex complete relation with its internal and external dependencies. The "Methodic" penetrates all other dimensions of the teaching & learning process and takes effect at different layers (p. 11). Bloh uses Meyer's (1988) model to organize his own model of online learning and teaching. The model proposed by Bloh only has limited value for teaching practice (p. 18).	The structuring model shall bring about theoretical clarity about the relations between the manifold manifestations of methodic actions. It has only limited value for the teaching practice. Teaching planning problems may not be solved with this model. It is rather an analytical classification framework. "Unterricht" (instruction) is not conceivable unless all elements of this model are present. (p. 18)	

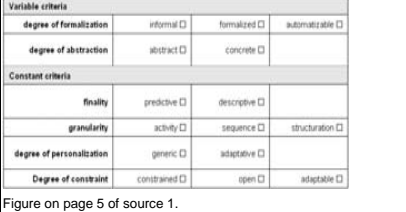
	Main Author(s)	Relevant References	Pictorial presentation of schema	Name of Schema	Keywords	Short Description and Theoretical Background of Schema	Purpose of the development/Problem addressed
4	Bloom/ Anderson & Krathwohl/	Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). <i>A Taxonomy For Learning, Teaching, And Assessing: A Revision of Bloom's Taxonomy of Educational Objectives</i> (Complete ed.). New York: Addison Wesley Longman.	 <p>Figure on page 28 (adapted).</p>	Taxonomy for Learning, teaching and assessing	cognitive process dimension knowledge dimension remember, understand, apply, analyze, evaluate, create factual knowledge, conceptual knowledge, procedural knowledge, metacognitive knowledge	The authors revised the original and successful framework by Bloom et al. in order to refocus attention on Bloom's Handbook, and to incorporate new knowledge and thought into the framework since its introduction in 1956 (p. XXIf). The original taxonomy by Bloom had undergone a few studies trying to identify correlations for the six levels (p. 287). The Anderson & Krathwohl taxonomy had not undergone such testing, although they did decide to switch Synthesis and Evaluation from the original category based on the data, and based on their reasoning (p. 293f).	The framework is a tool to help educators clarify and communicate what they intend students to learn as a result of instruction (p. 23). The framework is intended for "midrange" (educational) objectives, which lie in between very broad and highly specific objectives (p. 23). Categorizing with the framework permits the examination of objectives from the student's point of view (p. 34); the framework helps educators consider the panorama of possibilities in education (p. 35); helps to see the integral relationship b/w knowledge and cognitive process inherent in objectives (p. 35); it makes life easier as it aids deciding and designing types of assessment (p. 35); the framework makes apparent the (in)consistency among stated objectives, the way it was taught, and the assessment (p. 35); the framework helps to make better sense of wide variety of terms used in education (p. 36).
5	Bodendorf	Bodendorf, F. (1990). <i>Computer in der fachlichen und universitären Ausbildung</i> . München, Wien: Oldenbourg.	 <p>Abb. 3.1: Arten von Lernensformen.</p>		<i>Hilfesysteme</i> (support systems) <i>Lernergesteuerte Systeme</i> (learner-driven systems) <i>Trainingssysteme</i> (drill & practice systems) <i>Tutorielle Systeme</i> (tutorial systems) <i>Simulationssysteme</i> (simulation systems) <i>Spielsysteme</i> (game systems) ... <i>Expertensysteme</i> (expert systems) <i>Mikrowelten</i> (microworlds) <i>Intelligente Tutorials</i> (intelligent tutorials)	The author regards his classification schema as a coarse typology (<i>grobe Typologie</i>). The principle that guides the typology setup is the complexity of the system to be classified, i.e. from simpler systems to more complex systems (p. 47). A further distinction is made by the author in form of "intelligent" systems, which do not run on a predefined schema but act situated, non-procedural and individually (p. 109 & 111). Such systems are placed below the line in the Keywords section.	
6	Brown et al.	Brown, G. A., Bakhtar, M., & Youngman, M. B. (1984). <i>Toward a Typology of Lecturing Styles</i> . <i>British Journal of Educational Psychology</i> , 54, 93-100.	none	Lecturing styles	Oral lecturer Exemplary lecture Information providers Amorphous lecturers Self doubters	A random sample of 400 lecturers at Universities of Nottingham and Loughborough was sent a questionnaire; 258 were returned (p. 93). Items on the questionnaire were answered by the lecturers and statistically evaluated for validity and reliability. As a result, the authors identified five clusters of lecturers, each having a distinctive pattern of lecturing style (p. 93). The authors also found from the cluster analysis that the five types of lecturing styles were associated significantly with subject areas: Oral lecturers were more common in the humanities and social sciences, exemplaries were more common in biomedical science, information providers and amorphous lecturers were more common in science and engineering (p. 96). Self doubters appeared to be distributed across subject areas (p. 96).	Explore the ways in which lecturers prepare and give lectures. As there was little evidence on the process of lecturing as perceived by lecturers themselves or of the relationship between lecturer's styles, subject areas, status within the department and the years of experience (p. 93).

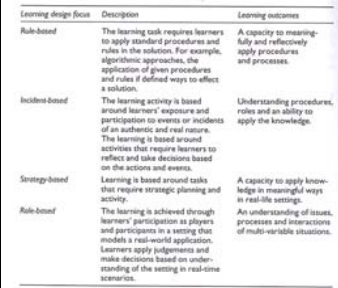
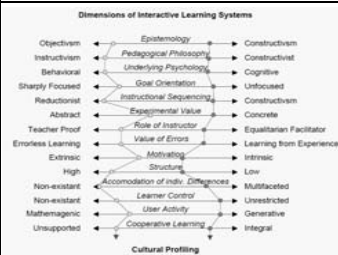
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7	Carey, Swallow & Oldfield	<p>(1) Carey, T., Swallow, J., & Oldfield, W. (2002). Educational Rationale Metadata for Learning Objects. Canadian Journal of Learning and Technology, 28(3). And (2) Buzza, D. C., Bean, D., Harrigan, K., & Carey, T. (2004). Learning Design Repositories: Adapting Le</p>	<table border="1"> <thead> <tr> <th>LEARNER ACTIVITIES</th> <th>TAGS</th> </tr> </thead> <tbody> <tr><td>Anchor new knowledge in authentic contexts</td><td>Anchor</td></tr> <tr><td>Set a goal to solve a non-trivial case or problem</td><td>Goals</td></tr> <tr><td>Develop motivation to perform tasks and understand knowledge</td><td>Motivate</td></tr> <tr><td>Apply theory in practice</td><td>Apply</td></tr> <tr><td>Employ multiple styles of learning</td><td>Styles</td></tr> <tr><td>Customize the learning agenda</td><td>Customize</td></tr> <tr><td>Monitor comprehension and adjust learning strategies</td><td>Monitor</td></tr> <tr><td>Adapt task difficulty to match needs and capabilities</td><td>Adapt</td></tr> <tr><td>Engage in expository or teaching activities</td><td>Teach</td></tr> <tr><td>Use trial and error to discover something new</td><td>Discover</td></tr> <tr><td>Collaborate to accomplish part of the learning task</td><td>Collaborate</td></tr> <tr><td>Engage in self-evaluation</td><td>Evaluate</td></tr> <tr><td>Reflect on the learning process</td><td>Reflect</td></tr> <tr><td>Confront and resolve misconceptions</td><td>Misconceptions</td></tr> <tr><td>Extrapolate beyond the information provided</td><td>Extrapolate</td></tr> <tr><td>Relate new knowledge to prior knowledge</td><td>Relate</td></tr> <tr><td>Examine new knowledge from different perspectives</td><td>Perspectives</td></tr> <tr><td>Differentiate knowledge types e.g., <i>heuristic, context-dependent</i></td><td>Differentiate</td></tr> <tr><td>Integrate new knowledge</td><td>Integrate</td></tr> <tr><td>Elaborate new knowledge</td><td>Elaborate</td></tr> <tr><td>Think critically about new knowledge</td><td>Critique</td></tr> </tbody> </table>	LEARNER ACTIVITIES	TAGS	Anchor new knowledge in authentic contexts	Anchor	Set a goal to solve a non-trivial case or problem	Goals	Develop motivation to perform tasks and understand knowledge	Motivate	Apply theory in practice	Apply	Employ multiple styles of learning	Styles	Customize the learning agenda	Customize	Monitor comprehension and adjust learning strategies	Monitor	Adapt task difficulty to match needs and capabilities	Adapt	Engage in expository or teaching activities	Teach	Use trial and error to discover something new	Discover	Collaborate to accomplish part of the learning task	Collaborate	Engage in self-evaluation	Evaluate	Reflect on the learning process	Reflect	Confront and resolve misconceptions	Misconceptions	Extrapolate beyond the information provided	Extrapolate	Relate new knowledge to prior knowledge	Relate	Examine new knowledge from different perspectives	Perspectives	Differentiate knowledge types e.g., <i>heuristic, context-dependent</i>	Differentiate	Integrate new knowledge	Integrate	Elaborate new knowledge	Elaborate	Think critically about new knowledge	Critique	Educational Rationale Metadata for Learning Objects	metadata instructional approach repository						<p>The set of tags used as educational rationale for learning objects are aligned according to empirical findings regarding learning theory. Each of the 21 tags has at least one citation (most have two+ citations) referenced that proved the learning principle to be true. There does not seem to be a hierarchy among the tags; they are merely presented in a list. The authors found that the usual descriptions of instructional methods (receptive, directive, guided discovery, exploratory) were too general to convey the desired information (source 1, p. 6), which motivated them for the tags. Backing for this statement can be found in Einsiedler (1981, <i>Lehrmethoden</i>, München), who says on the basis of comparing studies for open learning environments that "open" or "closed" learning methods are information-reduced expressions for complex detail processes during lectures (source 1, p. 173 & 176).</p>		<p>To provide a searching mechanism within a repository of learning objects (which in their definition include activities) for educational metadata, namely the educational approach taken, "metadata to record process-oriented information about instructional approaches for learning objects (source 1, p.1). The focus is on online learning.</p>
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8	Conole	<p>(1) Conole, G. (2007). Describing learning activities. Tools and resources to guide practice. In H. Beetham & R. Sharpe (Eds.), <i>Rethinking Pedagogy for a Digital Age. Designing and delivering e-learning</i> (pp. 81-91). London, New York: Routledge. And (2) Conole, G., & Fill, K. (2005). A learning design toolkit to create pedagogically effective learning activities. <i>Journal of Interactive Media in Education</i>(08). And (3) Bailey, C., Zalfan, M. T., Davis, H. C., Fill, K., & Conole, G. (2006). Panning for Gold: Designing Pedagogically-inspired Learning Nuggets. <i>Educational Technology & Society</i>, 9(1), 113-122.</p>		Taxonomy of learning activities	assimilative information handling adaptive communicative productive experiential			Figure from source 2, p. 8.			<p>BELONGS TO Dialog Plus The taxonomy attempts to consider all aspects and factors involved in developing a learning activity, from the pedagogical context in which the activity occurs through to the nature and types of tasks undertaken by the learner. At the heart of the taxonomy is the assertion that learning activities are achieved through completion of a series of tasks in order to achieve intended learning outcomes. The components of a learning activity are: context in which the activity occurs, the pedagogy adopted, and the tasks undertaken (source 1, p. 84). The authors see the most useful aspect of the taxonomy in the detailed description of the nature of tasks that students will undertake as part of the learning activity to achieve learning outcomes. Similar to Laurillard's taxonomy, tasks are classified in six types: assimilative, information handling, adaptive, communicative, productive, experiential (source 1, p. 84). For each task type, a range of techniques supports the way the task is undertaken (source 1, p. 85). Social forms and assessment forms vary (source 1, p. 85). The older publications (sources 2 and 3) are describing the taxonomy rather than the way and reason the taxonomy was set up. The authors state that they have carried out a detailed comparison between their taxonomy and IMS LD as well as other pedagogical taxonomies, namely LTSN vocabulary, SeSDL (source 2, p. 13), but they lack to provide detailed descriptions of procedure or results. Publication #3 provides analyses of the nugget model.</p>		<p>The taxonomy provides a useful checklist for identifying the components involved in creating a learning activity and can be helpful in terms of guiding practitioners through their decision making (source 1, p. 85).</p>																																												
9	Currier	<p>Currier, S. (2001). <i>SeSDL Taxonomy Evaluation Report</i>. Glasgow: University of Strathclyde. [Three types of taxonomies are included in literature: Educational Technology, Educational Development, Resource Types]</p>	none	SeSDL Taxonomy							<p>The taxonomy was developed on the opinions of the author and another developing person. The reference mostly discusses an evaluation study performed with six testers of the taxonomy.</p>		<p>Tool for describing and classifying granular learning resources held in the scottish electronic staff development library (p. 1).</p>																																												
10	DialogPlus	<p>http://www.nettle.soton.ac.uk/toolkit/help/approachlibrary.aspx http://www.nettle.soton.ac.uk/toolkit/help/outcomelibrary.aspx</p>	none							<p>BELONGS TO Conole</p>																																															

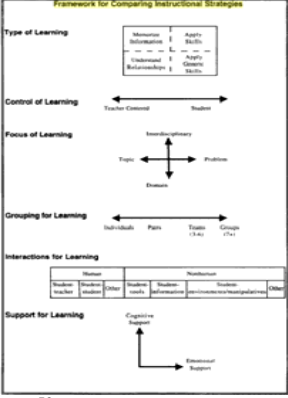
	Main Author(s)	Relevant References	Pictorial presentation of schema	Name of Schema	Keywords	Short Description and Theoretical Background of Schema	Purpose of the development/Problem addressed																																		
11	ERIC	Houston, J. E. (Ed.). (1995). Thesaurus of ERIC® Descriptors (13 ed.). Phoenix, AZ: Oryx. Including introduction by Barnett, L., & Colby, A. (1995). ERIC's Indexing and Retrieval: 1995 Update. In J. E. Houston (Ed.), Thesaurus of ERIC® Descriptors (13 ed., pp.	none	Thesaurus of ERIC descriptors		The book does not list how the schema was developed. The introductory chapter of the thesaurus merely states the process of selecting categories for a publication (how the publication is classified). The thesaurus has a category called "teaching methods", which subsumes 77 "narrower terms". This is a flat list; no further organizing mechanisms are applied. Some of the listed narrower terms are subject specific, such as clinical teaching, grammar translation method, and suzuki method (violin teaching). Some of the terms refer to seemingly broader terms, such as the narrower term "educational strategies". Some terms refer to small, concrete methods like dialog journals and drills; others are much coarser and unspecific like cross age teaching and learner controlled instruction.	The purpose is to index language.																																		
12	Farnham-Diggory	Farnham-Diggory, S. (1994). Paradigms of Knowledge and Instruction. Review of Educational Research, 64(3), 463-477.	<p><i>Table 1: Instructional model criteria</i></p> <table border="1"> <thead> <tr> <th>Instructional paradigm</th> <th>Expert-Novice distinction</th> <th>Key mechanism of transformation</th> </tr> </thead> <tbody> <tr> <td>Behavior Development</td> <td>Quantitative differences on same scale(s) Differences in qualitative models (personal beliefs)</td> <td>Incrementation Perturbation</td> </tr> <tr> <td>Apprenticeship</td> <td>Sociological differences in the culture of practice</td> <td>Acculturation</td> </tr> </tbody> </table> <p><i>Table 2: Paradigms of knowledge and instruction</i></p> <p><i>Knowledge paradigms</i></p> <p>Declarative, Procedural, Conceptual, Analogical, Logical</p> <p><i>Instruction paradigms</i></p> <p>Behavior Experts and novices are on the same measurement scales, and instruction enables novices to systematically accrue all five types of knowledge, until they reach expert levels.</p> <p>Development Experts and novices have different beliefs, and instruction enables novices to acquire all five types of knowledge in ways that challenge them to reconstruct their beliefs.</p> <p>Apprenticeship Experts and novices are in different worlds, and instruction enables novices to acquire all five types of knowledge (often tacit) in ways that facilitate their entry into the culture of expertise.</p>	Instructional paradigm	Expert-Novice distinction	Key mechanism of transformation	Behavior Development	Quantitative differences on same scale(s) Differences in qualitative models (personal beliefs)	Incrementation Perturbation	Apprenticeship	Sociological differences in the culture of practice	Acculturation	Paradigms of Knowledge and Instruction	Core Instructional Paradigms Core Learning Paradigms Teaching Tactics	Upon the revision of her own book on educational psychology, the author tried to collapse the widely spread terminology found in other research articles and text books. She has thus found that there are three core instructional paradigms (behavior, development, apprenticeship; p. 464) and that there are five types of knowledge that may be acquired (declarative, procedural, conceptual, analogical, logical; pp. 467-469). All three paradigms can teach all five types of knowledge in their own way. The three core models are defined to be mutually exclusive (p. 467). Instructional hierarchies and interfacing of modules are pointed out as being important, but were not covered in the article (p. 467). Furthermore, the author specified four groups for teaching tactics. These four methods appear whenever a teacher is present (pp. 469f): talking, displaying, coaching, arranging the learning environment. These four methods are based on the author's experiences (p. 469), yet, they are not defining characteristics of instructional paradigms or of knowledge acquisition (p. 469). All other teaching tactics as well as involvement of students and degrees of social interactions appear within these four categories according to the author (p. 470)	To help clarify calls for alternative forms of research; provide parsimonious criteria for classifying research that is currently being conducted.																									
Instructional paradigm	Expert-Novice distinction	Key mechanism of transformation																																							
Behavior Development	Quantitative differences on same scale(s) Differences in qualitative models (personal beliefs)	Incrementation Perturbation																																							
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13	Felder & Silverman	(1) Felder, R. M., & Silverman, L. K. (1988). Learning and Teaching Styles in Engineering Education. Engineering Education, 78(7), 674-681. (2) Felder, R. M. (1993). Reaching the Second Tier: Learning and Teaching Styles in College Science Education. Journal of College Science Teaching, 23(5), 286-290. (3) Felder, R. M., & Spurlin, J. (2005). Applications, Reliability and Validity of the Index of Learning Styles. International Journal of Engineering Education, 21(1), 103-112. (4) Litzinger, T. A., Lee, S. H., Wise, J. C., & Felder, R. M. (2007). A Psychometric Study of the Index of Learning Styles. Journal of Engineering Education, 96(4), 309-319.	<p>Dimensions of Learning and Teaching Styles</p> <table border="1"> <thead> <tr> <th colspan="2">Preferred Learning Style</th> <th colspan="2">Corresponding Teaching Style</th> </tr> </thead> <tbody> <tr> <td>sensory</td> <td rowspan="2">perception</td> <td>concrete</td> <td rowspan="2">content</td> </tr> <tr> <td>intuitive</td> <td>abstract</td> </tr> <tr> <td>visual</td> <td rowspan="2">input</td> <td>visual</td> <td rowspan="2">presentation</td> </tr> <tr> <td>auditory</td> <td>verbal</td> </tr> <tr> <td>inductive</td> <td rowspan="2">organization</td> <td>inductive</td> <td rowspan="2">organization</td> </tr> <tr> <td>deductive</td> <td>deductive</td> </tr> <tr> <td>active</td> <td rowspan="2">processing</td> <td>active</td> <td rowspan="2">student participation</td> </tr> <tr> <td>reflective</td> <td>passive</td> </tr> <tr> <td>sequential</td> <td rowspan="2">understanding</td> <td>sequential</td> <td rowspan="2">perspective</td> </tr> <tr> <td>global</td> <td>global</td> </tr> </tbody> </table> <p>Figure on page 675 of source 1. The picture presented here is based on the old version, not the revised version as proposed in the foreword to the 1988 publication. Namely, the dimension inductive/deductive needs to be excluded, and visual/auditory is changed into visual/verbal.</p>	Preferred Learning Style		Corresponding Teaching Style		sensory	perception	concrete	content	intuitive	abstract	visual	input	visual	presentation	auditory	verbal	inductive	organization	inductive	organization	deductive	deductive	active	processing	active	student participation	reflective	passive	sequential	understanding	sequential	perspective	global	global	Learning and Teaching styles in engineering education	Learning Styles: sensory/intuitive visual/verbal active/reflective sequential/global corresponding Teaching Styles: concrete/abstract visual/verbal active/passive sequential/global	The learning style model classifies students according to where they fit on a number of scales pertaining to the ways they receive and process information. Parallely, a teaching-style model is introduced which classifies instructional methods according to how well they address the proposed learning style components (source 1, p. 674). The sensing/intuition dimension is based on Jung's theory of psychological types; the dimension active/reflective processing is part of a learning style model by Kolb (source 1, p. 675), and was linked to Jung-Myers-Briggs model's extravert/introvert (source 1, p. 678). The hypothesis is that if engineering instructors include elements for each of the poles for each dimension, they achieve an optimal learning environment for most students (source 1, p. 675). Placing all dimensions and values in a matrix, 32 possible learning styles emerge. Scales of the model are seen as independent of each other; they are orthogonal, except for the sequential/global and sensing/intuitive dimensions, which show a moderate degree of association (source 3, pp. 104 & 108). Many or most of engineering students are visual, sensing, inductive, and active most engineering education is verbal, abstract (intuitive), deductive, passive and sequential. These mismatches lead to poor student performance, professional frustration, and a loss to society of many potentially excellent engineers (source 1, p. 680). A list of teaching techniques is given that serve to enhance engineering education (source 1, p. 680, also source 2, p. 5). "Students whose learning styles are compatible with the teaching style of a course instructor tend to retain information longer, apply it more effectively, and have more positive post-course attitudes toward the subject than do their counterparts who experience learning/teaching style mismatches." (source 2, p. 1)	To identify mismatches between teaching styles and learning styles in engineering education.
Preferred Learning Style		Corresponding Teaching Style																																							
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reflective		passive																																							
sequential	understanding	sequential	perspective																																						
global		global																																							

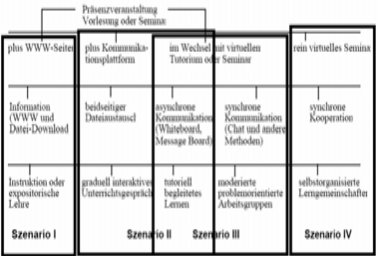
	Main Author(s)	Relevant References	Pictorial presentation of schema	Name of Schema	Keywords	Short Description and Theoretical Background of Schema	Purpose of the development/Problem addressed
14	Flechsig	(1) Flechsig, K.-H. (1983). Der Göttinger Katalog Didaktischer Modelle: Theoretische und methodologische Grundlagen. Göttingen: Zentrum für didaktische Studien. AND (2) Flechsig, K.-H. (1996). Kleines Handbuch didaktischer Modelle. Eichenzell: Neuland.	none	Göttinger Katalog didaktischer Modelle (Goettinger catalog of didactic models)		The author describes a process of reducing complexity from teaching practice and translating these practical observations of into models of teaching. This takes place in several steps/on several levels, namely here the <i>Kategorialmodelle der Didaktik</i> (categorical model of didactics) and the level of <i>Modelle von/für Unterrichtseinheiten</i> (models of teaching) (source 1, p. 30). The categorical model is the short definition of teaching, defining its determining factors, giving it a theoretical frame and distinction (source 1, pp. 30f). The author states that this model and all thoughts regarding his models of teaching stem from his own convictions and reflections, even though these convictions were built in collaboration with peers and learners (source 1, p. 42). There is no rationale for differentiating a model from a variant of a model as the decisions that led to these were made in the working progress and cannot be reconstructed (source 1, p. 52). The target audience for the catalog of didactic models are innovation-willing practitioners (source 1, p. 64). The models are meant to be used for planning and construction of teaching situations, and as an aid for determining if everyone talks of the same model (and its constituent action steps -- <i>generalisierte Handlungsmuster</i>) (source 1, p. 65).	Purpose of the developments was to create models of "Unterricht" (instruction) to reduce the complexity in order to establish relationships between theory of teaching and practice of teaching (source 1, p. 30). The first reason for development was a government call for types of teaching (<i>Unterrichtstypen</i>) (source 1, pp. 43f). The second purpose was to inventory the results of aborted reform measurements in the hope to keep them alive (source 1, p. 45). The third purpose was to answer demands that were placed on the author in regard to his role of head of center for teaching and learning. He noticed that summarizing overviews were missing that bridged the path from theory of alternative teaching methods to the implementation in practice (source 1, pp. 45f). The fourth purpose was to formulate statements in regard to a specific type of teaching and to prove validity of the statement within that type instead of postulating generally valid statements about teaching (source 1, p. 46).
15	Fuhrmann & Weck	Fuhrmann, E., & Weck, H. (1976). Forschungsproblem Unterrichtsmethoden. Berlin: Volk und Wissen.	incomplete depiction to be scanned	Classification System for instructional methods (<i>Klassifizierungssystem für Unterrichtsmethoden</i>)	Distinction Level 1: Goals of (socialist) character/personality development Level 2: Aspects of fundamental laws of knowledge acquisition Level 3: Structure and type of subject matter knowledge to be acquired Level 4: Outer forms of teacher and student activities	The authors performed a large literature review of especially German literature on the topic of classifying instructional methods (<i>Unterrichtsmethoden</i>). They collected the different types of classifications that other authors had already used, i.e. what criteria and methodologies were used by other authors to classify instructional methods. From these activities, the authors concluded that there are three sustainable versions for the further development of ordering instructional methods: 1) classification according to different target areas of character/personality development, 2) classification of student activities that are in line with the targets, and 3) classification according to key aspects of the content (p. 168). The authors provide explicit and detailed information on the first version (classification according to different areas of character/personality development), describing at least four distinction levels that feature a decreasing degree of abstraction for instructional methods as one goes down into the levels. The goals of the instruction (personality development) represent the starting point for classification, while later also taking into account the structure and logic of the subject matter being taught as well as the laws of knowledge acquisition (pp. 168f). The other two versions (classification of student activities and key aspects of content, respectively) receive short, summary-like explanations (pp. 185ff). The authors' statements and explanations are, from today's point of view, highly influenced by the political language and ideologies of East Germany (the former German Democratic Republic).	The purpose is to classify instructional methods (<i>Unterrichtsmethoden</i>). The authors state that it is necessary and useful to further research typical situations of instruction (<i>Unterricht</i>) and questions of its arrangement because the approach via "typical situations" is especially appropriate to perfect the methodic instruments (p. 121).
16	GEM		none			The first flat list contains terms that were defined by three sources of dictionaries (two dictionaries of education and the thesaurus of ERIC Descriptors). The list is without further systematics, and mixes different dimensions/modes such as brainstorming (a method in itself) and cooperative learning (a potential group of methods). The second flat list is on learning assessment methods, containing sometimes confusing terms such as "authentic assessment" (which may represent a group of methods) and "testing" (which seems to be a repeated heading for the entire list that this term is part of).	Terms are used to describe ways of presenting instructional materials or conducting instructional activities.

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17	Hokanson & Hooper	Hokanson, B., & Hooper, S. (2004). Levels of teaching: A taxonomy for instructional design. <i>Educational Technology</i> , 44(6), 14-22. Available on the World Wide Web at http://www.uwex.edu/disted/conference/Resource_library/handouts/05_1792H.pdf	 <p>Figure on page 2 of online version.</p>	Levels of teaching/ Five levels of instruction	question problem cognitive level	Taking Bloom's cognitive taxonomy as a backbone, the schema supposes to describe the interaction between learners (this however was not shown in the article) and questions asked of them. It differentiates between questions and problems, where questions vary in complexity and answering procedures but usually only have one correct answer, while problems do not have a single correct answer (p. 2 of online version). Teaching methods are sometimes clearly part of one of the five levels; more often the processes are more complex and require a combination of levels (p. 2 of online version). Higher levels require higher cognitive processing. The hierarchy is cumulative, i.e. each builds upon the other and higher ones include the lower ones.	Instructional methods have not been ordered or ranked according to their educational value, or clarified the relative value of various methods. Therefore, the authors developed a framework to guide the selection of educational methods within instructional design (p. 1 of online version). The classification will help designers select and develop instructional methods that elicit appropriate cognitive engagement (p.1 of online version). The taxonomy is intended to encourage the design of activities to include more cognitively challenging activities (p. 10 of online version).
18	Jensen	Jensen, A. R. (1967). Varieties of Individual Differences in Learning. In R. M. Gagné (Ed.), <i>Learning and Individual Differences</i> (pp. 117-140). Columbus, OH: Merrill.		Classification of individual differences in learning	intrinsic & extrinsic individual differences, e.g. types of learning, procedures, content and modality	The author describes his theory and approach about studying individual differences. He states that the field is not well researched and has received too little attention in the past. The focus of the article is not on a specific classification of individual differences but the speculations of what they could be and how to test them.	
19	Kyllonen & Shute	Kyllonen, P. C., & Shute, V. J. (1988). <i>Taxonomy of Learning Skills</i> . Brooks, TX: Air Force Human Resources Laboratory.	not available in legible form; see page 17 of original publication for figure.	Taxonomy of learning skills	Instructional environment Resulting knowledge type Domain Learning Style	The authors have performed extensive analyses of prior approaches to developing/establishing taxonomies, among them Bloom, Gagne, Underwood and Anderson. They distinguish three types of taxonomies, which are categorized by their approach to setting up the taxonomy: a) designated/rational taxonomies based on conditions-of-learning analysis (apparently the most common type), b) empirical-correlational taxonomies, and c) model-based taxonomies derived from formal computer simulations (largely inspired by cognitive psychologist developments) (p. 6). The authors favor type c), however, they also see a chance in creating synthesis between the three different approaches (p. 14). Their own taxonomy is made up of four dimensions (names listed under keywords). The first three dimensions define a space of learning tasks. Each cell represents a task that teaches a particular subject matter by a particular means resulting in a particular kind of knowledge (pp. 22f). The fourth dimension refers to characteristics of the person rather than the environment since the environment alone may not predict what kind of learning experience will result or what kind of learning skill is being tapped (pp. 23f).	The taxonomy should be useful as a learning task analysis system, thus it should answer questions like what are the component skills involved in learning to disassemble a jet engine, or operate a camera, or program a computer, or make economic forecasts? Second, the taxonomy should serve to focus "our research" (p. 14).
20	Leclercq & Poumay/ Verpoorten	(1) Leclercq, D., & Poumay, M. (2005). The 8 Learning Events Model and its principles. Retrieved January 16, 2008, from http://www.labsnet.net/media/prod/8LEM.pdf And (2) Verpoorten, D., Poumay, M., & Leclercq, D. (2006). The 8 Learning Events Model: a Pedagogic Conceptual Tool Supporting Diversification of Learning Methods. Retrieved August 14, 2008 from http://dspace.ou.nl/handle/1820/695 And (3) Verpoorten, D., Poumay, M., & Leclercq, D. (2006). D1.1 M24 Research Report for T1.1. Report for the iClass project. Liège: University of Liège. Retrieved August 14, 2008 from http://www.iclass.info/docs/1%20D1.1%20M24.doc	 <p>Figure on page 3 of source 1.</p>	8 Learning Events Model (8LEM)	Imitation/Modeling Reception/Transmission Exercising/Guidance Exploration/Documenting Experimentation/Reactivity Creation/Confortation Self-reflexion/Co-reflexion Debate/animation	The authors distinguish their term "event" clearly from instructional "strategy" and "method". From their point of view, an event equals an atom, where a small number of atoms build the foundation for forming a large number of different molecules (source 1, p. 1). The authors chose the number 8 for their number of events on the basis of the limits of human cognitive processing (Miller, 1956), arguing that the model thus stays clear (source 1, p. 1). The terminology of the model is chosen at an "intermediate level of conceptualisation", which they base on Rosch (1979), as this level is the most widely used in conversation (source 1, pp.1f). For each of the eight (learner!) events, the authors have provided links to learning and other theories to back the event. At times, these seem arbitrary (e.g. Torrance's creativity criteria in the event "Creation" as backup, source 1, p. 7); other times they seem to fit well (Thorndike & Skinner for event "Exercising", source 1, p. 5). The authors state that the 8LEM is "not deemed to be true but useful" (source 3, p. 4). The events are provided in a list; however, the authors state that the ranking within the list does not relate to importance or value (source 3, p. 5). The events do not exclude one another (source 3, p. 6). The authors provide another set of metadata to describe the approaches associated with each of the learning events. These criteria are: type of media used, whether there is an evaluation of the learner's performance, individual or collaborative work, approximate time learner will take (source 1, p. 9).	To reduce complexity without lapsing into simplistic methods (source 1, p. 1) The authors furthermore suggest to use the events to express the learning experiences graphically ("rough yet complete") (source 2, p. 2). This ought to help practitioners to get a quick grasp of what a UoL entails (ibid). The authors wish to foster pedagogical variety, training the learner in being able to learn in several learning modes. They coin the term "learning polyvalence" for this (e.g. source 3, pp. 7f).

	Main Author(s)	Relevant References	Pictorial presentation of schema	Name of Schema	Keywords	Short Description and Theoretical Background of Schema	Purpose of the development/Problem addressed
21	Lejeune & Pernin	<p>(1) Lejeune, A., & Pernin, J.-P. (2005). A Taxonomy for Scenario-Based Engineering. Paper presented at the Cognition and Exploratory Learning in Digital Age (CELDA), Lisboa.</p> <p>And</p> <p>(2) Pernin, J.-P., & Lejeune, A. (2006). Models for the Re-Use of Learning Scenarios. Retrieved January 16, 2008 from http://dspace.ou.nl/bitstream/1820/580/1/Models.pdf</p>	 <p>Figure on page 5 of source 1.</p>	Taxonomy of scenarios/ Taxonomy for scenario-based engineering	Degree of formalization Degree of abstraction Finality Granularity Degree of personalization Degree of constraint	<p>The authors propose a taxonomy that consists of six "criteria" (see keywords column), with each criterion having two or three values, of which one will be checked as being the one for the pedagogic scenario being classified.</p> <p>The quality of the presentation of the authors' research results was below average.</p>	It is not clear what the purpose of the taxonomy development was, perhaps to aid searches for pedagogic scenarios in databases.
22	Martinez, Sauleda, Huber	<p>Martínez, M. A., Sauleda, N., & Huber, G. (2001). Metaphors as blueprints of thinking about teaching and learning. <i>Teaching and Teacher Education</i>, 17, 965-977.</p>	none	none	Behaviourist/empiricist perspective Cognitive point of view Situative or socio-historic perspective	<p>The authors asked teachers with teaching experience and pre-service teachers to formulate their notion of learning as a metaphor. The authors then interpreted and classified the so produced metaphors into three groups: (they call these "three dimensions" p. 967, but they are actually along one dimension, which is learning theory): behaviourist/empiricist perspective, cognitive point of view, situative or socio-historic perspective. It is not clearly mentioned, how they created these three groups. The authors mention that the groups may be extended (p. 967).</p>	To group metaphors on learning
23	Merrill, Jones, Li	<p>(1) Merrill, M. D. (1999). Instructional Transaction Theory (ITT): Instructional Design Based on Knowledge Objects. In C. M. Reigeluth (Ed.), <i>Instructional-Design Theories and Models: A New Paradigm of Instructional Theory</i> (Vol. II, pp. 397-424). Mahwah, NJ: Lawrence Erlbaum.</p> <p>And</p> <p>(2) Merrill, M. D., Jones, M. K., & Li, Z. (1992). Instructional Transaction Theory: Classes of Transactions. <i>Educational Technology</i>, 32(6), 12-26. Retrieved August 14, 2008 from http://id2.usu.edu/Papers/TxClass.PDF</p>	<p>Thirteen Classes of Instructional Transactions</p> <hr/> <p>Component Transactions IDENTIFY: name and remember information about parts of an entity EXECUTE: remember and do steps in an activity INTERPRET: remember events and predict causes in a process</p> <hr/> <p>Abstraction Transactions JUDGE: order instances CLASSIFY: sort instances GENERALIZE: group instances DECIDE: select among alternatives TRANSFER: apply steps or events to a new situation</p> <hr/> <p>Association Transactions PROPAGATE: acquire one set of skills in the context of another set of skills ANALOGIZE: acquire steps of an activity, or events of a process, by likening to a different activity or process SUBSTITUTE: extend one activity to learn another activity DESIGN: invent a new activity DISCOVER: discover a new process</p>	Classes of Instructional Transactions	component transactions abstraction transactions association transactions Identify Execute Interpret Judge Classify Generalize Transfer Propagate Analogize Substitute Design Discover	<p>The transactions for IDENTIFY, EXECUTE, and INTERPRET are building blocks for abstraction and association transactions. All instruction involves acquisition of the knowledge and skills promoted by the fundamental transactions. These transactions account for the instructional strategies found in most of the existing instruction in training (source 1, p. 405).</p> <p>The authors assume that different knowledge structures require different types of instructional transactions, and that different transactions promote the acquisition of different types of learner capability (source 2, p. 1).</p> <p>They propose that the nature of interactions for a given class of transaction depends on the type of knowledge structure(s) that the transactions seeks to promote and the learner capability enabled by the transaction (source 2, pp. 2f).</p> <p>The three types of transactions (component, abstraction, association) correspond to the three types of elaborations for knowledge frames.</p>	The purpose of transactions is to render mechanisms for displaying "knowledge frames", which may also be referred to as learning objects in more modern terminology.
24	Minass	<p>Minass, E. (2002). Dimensionen des E-Learning: Neue Blickwinkel und Hintergründe für das Lernen mit dem Computer. Kilchberg: Smartbooks.</p>	Too large to be depicted here.	Dimensions of e-learning (<i>Dimensionen des E-Learning</i>)		<p>The author provides many different "dimensions" that can be used to classify e-learning. The author states that he has studied and combined many different sources to create these dimensions of e-learning. However, from the book it is not apparent, 1) what sources served as input for his dimensions, or 2) how he then combined them into his dimensions. The whole text is missing links to the literature, while the reference section itself is small enough that one must believe that he has not cited his sources. This work must be concluded to be highly arbitrary.</p>	To show how complex and multi-layered e-learning is.
25	Niemeyer	<p>Niemeyer, A. H. (1882). <i>Grundsätze der Erziehung und des Unterrichts</i> (2 ed. Vol. I&II). Langensalza: Hermann Beyer & Söhne. Originally published 1825.</p>	none		Dialog between teacher and learners Lecturing Teaching by demonstrating	<p>The author talks about general instructional strategies that should be attended to when teaching, for instance, teaching should involve learners, or teachers should see instruction from the learner's point of view (Vol. II, pp. 9ff). He distinguishes three forms of teaching: dialog between teacher and learner (<i>katechetische Lehrform</i>), lecturing (<i>akroamatische Lehrart</i>) and teaching by demonstrating (<i>Unterricht durch Zeigen und Vortun</i>) (Vol. II, pp. 22ff). He further states that the three typical forms have to be adjusted depending on the number of participating students. The author then lists exercises and further learning and teaching methods for instructing students depending on the subject matter being taught, e.g. essay writing, mathematics, natural sciences, philosophy, ethics, foreign language learning, religion (Vol. II, pp. 44ff.). It seems that the author did not consider exercises that students performed to be types of teaching as the author did not include these in his list of three types of teaching. Although the publication was first published nearly 200 years ago, some of the (unreferenced) statements by the author reflect modern perspectives on learning that we still hold today.</p>	

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26	OECD	Organisation for Economic Co-operation and Development (OECD). (1999). Classifying Educational Programmes. Manual for ISCED-97 Implementation in OECD Countries.	none	ISCED-97		The coverage of the ISCED-97 extends to all organised and sustained learning opportunities for children, youth and adults including those with special educational needs, irrespective of the institutions or organisations providing them or the form in which they are delivered (p. 7).	To classify levels of education (p. 8); to provide an integrated and consistent statistical framework for the collection and reporting of internally comparable education statistics (p. 7).
27	Oliver, Harper et al.	Oliver, R., Harper, B., Wills, S., Agostinho, S., & Hedberg, J. (2007). Describing ICT-based learning designs that promote quality learning outcomes. In H. Beetham & R. Sharpe (Eds.), Rethinking Pedagogy for a Digital Age. Designing and delivering e-learning (pp. 64-80). London, New York: Routledge.	 <p>Figure on page 68.</p>	Framework for learning design typology	rule-based incident-based strategy-based role-based	Within an AUTC-funded project, a framework for distinguishing learning designs, and a means for providing a formal description of each design were developed (p. 65). Development of the framework was guided by notions of Jonassen (2000) in regard to activity-theory (p. 67). The first three forms (refer to keywords column) are derived from Jonassen's problem-types, while the fourth was added by the authors (p. 68). The learning design types are seen as discrete and follow a continuum describing the scope of their complexity and openness (p. 68).	"What appears to be still missing for teachers is appropriate guidance on the effective pedagogical practice needed to support such activities [teachers looking to make meaningful use of learning technologies]." (p. 64) "In our project, we needed to be able to articulate clearly the nature and scope of different forms of learning design in ways that would enable a design to be applied across a variety of settings and disciplines. We required some strategy by which the various learning designs could be described and variations and instances accommodated." (p. 67)
28	Ramsden	Ramsden, P. (1992). Learning to Teach in Higher Education. London and New York: Routledge.	none	Theories of Teaching	1:Teaching as telling or transmission 2:Teaching as organising student activity 3:Teaching as making learning possible	The three presented theories of teaching are based on what lecturers have said about the problems and possibilities of improving learning and teaching. The vignettes were derived from the structure of lecturer's theories of teaching suggested in recent research and writing on the subject (information was collected in Melbourne and Hong Kong by four researchers via interviews with lecturers who described their teaching and learning in their disciplines) (p. 111). The author brought these findings together with knowledge on student's approaches to learning to derive three generic ways of understanding the role of teachers in higher education. It seems that the first theory is much further away from the second theory, than the second is from the third. The third appears to be a further elaboration of the second, which takes the learner's prerequisite knowledge and general knowledge of teaching the "content" into account (pp. 114). Ramsden states that theory 3 is associated with better quality learning and changing lecturers' understanding of teaching as a necessary condition for improvement (p. 117). The author states that the three theories have a "progressive, or hierarchical, structure" (p. 116). The author regards the theories as logical constructs rather than descriptions of individual courses (p. 117).	"Pedagogical dimensions can be used to compare one form of CBE [computer-based education] with another or to compare different implementations of the same form of CBE. [The criteria] will result in more valid and useful evaluations" (p. 2).
29	Reeves	Reeves, T. (1997). Evaluating What Really Matters in Computer-Based Education. University of Georgia. Retrieved August 14, 2008 from http://www.educationu.edu.au/jahia/Jahia/pid/179		Fourteen pedagogical dimensions of computer-based education	epistemology pedagogical philosophy underlying psychology goal orientation experiential value teacher role program flexibility value of errors motivation accommodation of individual differences learner control user activity cooperative learning	The author made the first attempt to describe the dimensions in 1992. Until 1997 (the status of the present publication), the dimensions were revised based on feedback from Reeves' colleagues. The status of the dimensions is not final; further modifications are necessary according to the author. (p. 3) Suggested improvements include conducting a rigorous expert review with leaders in computer-based education, then inserting qualitative scales to the dimensions, then the application of these qualitatively stated dimensions to different forms of computer-based education and a variety of educational contexts. Last, research should be performed to identify relationships between ratings received on the fourteen dimensions and the actual instructional effectiveness and impact of the educational programs (p. 14).	

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30	Reigeluth & Moore	Reigeluth, C. M., & Moore, J. (1999). Cognitive Education and the Cognitive Domain. In C. M. Reigeluth (Ed.), <i>Instructional-Design Theories and Models: A New Paradigm of Instructional Theory</i> (Vol. II, pp. 51-68). Mahwah, NJ: Lawrence Erlbaum.	 <p>The diagram illustrates a framework for comparing instructional strategies across six dimensions:</p> <ul style="list-style-type: none"> Type of Learning: A 2x2 matrix with 'Memorize Information' and 'Apply Skills' in the top row, and 'Understand Relationships' and 'Apply Generic Skills' in the bottom row. Control of Learning: A horizontal double-headed arrow between 'Teacher-Centered' and 'Student'. Focus of Learning: A vertical double-headed arrow between 'Knowledge/Skills' and 'Process', with 'Topic' and 'Problem' on the horizontal axis. Grouping for Learning: A horizontal double-headed arrow between 'Individuals' and 'Groups', with 'Pairs' and 'Teams' in between. Interactions for Learning: A table with 'Human' and 'Nonhuman' as columns and 'Teacher', 'Student', 'Material', and 'Environment' as rows. Support for Learning: A vertical double-headed arrow between 'Cognitive' and 'Emotional', with 'Support' at the bottom. 	Framework for comparing Instructional Strategies	Types of learning Control of learning Focus of learning Grouping for Learning Interactions for Learning Support for Learning	For the dimension "type of learning", the authors use a synthesis of other classifications proposed by Bloom (1956), Gagné (1985), Ausubel (1968), Anderson (1983), and Merrill (1983). They have placed them in a comparative table to identify (upon their understanding) four main dimensions (groups?) for types of learning: memorize information, understand relationships, apply skills, apply generic skills. For the other dimensions, they do not offer reason how they came up with this dimension of classification.	Authors state that the framework is not intended to be all-encompassing but to provide a starting point from which to begin your own process of analysis and discussion.
31	Reusable Electronic Software Library (RESL)	Re-usable Educational Software Library (RESL). (2008, August 14). Keywords List. Retrieved August 14, 2008 from http://www.resl.ac.uk/keyword.cfm?keyword=PE	none	Keywords List		There are no accounts on how this list was set up. Lists are provided in two levels for pedagogy, three levels for technology, and three levels for strategy (level means increasing detail, i.e. creating a subterm of the header term).	To find records in a database especially case-studies in re-using educational software, plus related software, reports, guides, data-sets and websites.
32	Roth & Roth	Roth, A., & Roth, H.-G. (1978). <i>Die Elemente der Unterrichtsmethode</i> . München: Paul List.	none	Structure moments of teaching methods (<i>Strukturmomente der Unterrichtsmethode</i>)	Types of teaching (<i>Lehrweisen</i>) Gradation/articulation (<i>Stufung/Artikulation</i>) Social form (<i>Sozialform</i>)	The authors describe three dimensions of teaching methods (they call these three dimensions <i>methodische Grundkategorien</i> or <i>Strukturmomente</i>): <i>Lehrweisen</i> (types of teaching), <i>Stufung/Artikulation</i> (the process of moving through proficiency stages), the social form. For the first dimension (<i>Lehrweisen</i>), the authors differentiate subgroups that are dependent on the subject matter and its objects being taught, i.e. 1) real objects that can be experienced are taught with types of teaching of real representation, 2) real objects that cannot be experienced in the immediate learner environment are taught with types of teaching of envisioning, 3) abstract objects like terms, rules or rational insights are taught with types of teaching of questioning and developing, 4) representations of objects created by humans that have meaning or relation to some principle to be interpreted are taught with types of interpreting teaching, and 5) objects being created by learners are taught with types of teaching of practical design by students (pp. 40ff). The gradation of teaching, or moving through the proficiency stages (<i>Stufung des Unterrichts</i>) is divided into gradation model of knowledge acquisition (two-fold), transmission of experience, expression composition, and proficiency training (pp. 93ff). The third dimension (<i>Sozialform</i>) is divided into: teaching in the same front, the class (entire group of students) as the carrier of instructional events, the (small) group as the carrier of instructional events, the single learner as the carrier of instructional events, and technical media as carrier of instructional events (pp. 112ff).	

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33	Sader et al.	Sader, M., Clemens-Lodde, B., Keil-Specht, H., & Weingarten, A. (1971). <i>Kleine Fibel zum Hochschulunterricht</i> . Überlegungen, Ratschläge, Modelle (2 ed.). München: Beck.	none	Sieben Modelle für den Hochschulunterricht	Beginner exercise (<i>Anfänger-Übung</i>) Fact catapult (<i>Faktenschleuder</i>) Small group exercises (<i>Kleingruppenzentrierte Sach-Übung</i>) Socratic dialog (<i>Sokrates</i>) Research seminar (<i>Forschungsseminar</i>) Grand old man (G.o.m.) Self-regulated/initiated learning networks (<i>Basisgruppe</i>)	The authors provide seven course types (<i>Lehrveranstaltungstypen</i>). The seven models are put together from the results of motivation and small group research, some reports from newer higher education research, own experiences of the authors and "a lot of imagination" (p. 127). The authors do not limit the number of possible models to seven, the elements are to be mixed and extended (p. 127). The examples used stem from the subject of psychology; the authors, however, see the potential to use the models/course types in different subjects (p. 127). The authors assume for all seven models that students participate in the planning, preparation and implementation of the models. The Appendix of the book includes a list featuring more methods and versions. The authors state, that those are not meant to be alternatives to the seven models but as variety enhancers (pp. 165ff).	
34	Saroyan & Snell	Saroyan, A., & Snell, L. S. (1997). Variations in lecturing styles. <i>Higher Education</i> , 33, 85-104.	none	Variations in lecturing styles	content-driven lecture context-driven lecture pedagogy-driven lecture	Authors state that "of all instructional methods, lecturing is the most widely used format in university classes" (p. 87). The authors establish a framework for discerning differences in lectures by applying the following measures to lectures (whether the instructors make use of): introduction, explicit explanation, periodic summaries, conclusion, signposts of what's ahead, cues when transitions occur, making links between new material and prior knowledge, placing new knowledge in the context of the discipline, and last but not least including interactivity (p. 88). The result of the study were three different types of lecturing styles (see Keywords column).	The authors set up the goal to describe lectures in more detail than Brown et al.'s schema was capable of (pp. 89f). They saw a need for having a theoretical framework for characterizing lectures and addressing the assertion that there is a lack of "an operational definition of the classical lecture" (Schonwetter 1993) (p. 87).
35	Schulmeister	Schulmeister, R. (2002). Virtuelles Lehren und Lernen: Didaktische Szenarien und virtuelle Seminare. In B. Lehmann & E. Bloh (Eds.), <i>Online-Pädagogik</i> (pp. 129-145). Baltmannsweiler: Schneider Verlag Hohengehren.	 <p>The diagram illustrates four scenarios of virtual learning based on two dimensions: 'Präsenzveranstaltung Vorlesung oder Seminar' (Face-to-face) and 'virtuelles Seminar' (Virtual). - Szenario I: plus WWW-Seite, Information (WWW und Datei-Download), Instruktion oder expositoryische Lehre. - Szenario II: plus Kommunikationstechnologien, beidseitiger Datenaustausch, graduell interaktive Unterrichtspraktik. - Szenario III: im Wechsel mit virtuellen Tutorium oder Seminar, asynchrone Kommunikation (Whiteboard, Message Board), tutoriell begleitetes Lernen. - Szenario IV: rein virtuelles Seminar, asynchrone Kommunikation (Chat und andere Methoden), synchrone Kooperation, moderierte problemorientierte Arbeitsgruppen, selbstorganisierte Lerngemeinschaften.</p>	Scenarios of virtual learning (<i>Szenarien virtuellen Lernens</i>)	form function method	Since the author means to classify "virtual seminars", he does not take into account face-to-face scenarios of learning (p. 130). The criterion for the first category "form" is how large the portion of virtual learning/teaching in comparison to the entire course is (p. 130). The author claims that the dimension "function" may be explained using known communication models and theories. However, he fails to mention which ones these are and how they fit his schema (p. 131). The dimension "method" is shortly explained as being on a scale from behavioristic, to cognitivist towards constructivist pedagogy (p. 131). The author does not explain how the theories fit with his setup of the dimension. The author then compares his own framework with all kinds of other frameworks that researchers have developed. The discourse does not seem to take place critically; he just observes who else has used factors (quite arbitrarily!) that could be interpreted into the author's own schema (pp. 131-135). The author distinguishes four scenarios that "cross" the three dimensions: face-to-face seminars that are accompanied by online components (scenario type I), equal ranks between face-to-face and online components (type II), integrated use of face-to-face and online components (type III), virtual seminars and learning communities (type IV) (p. 135).	

	Main Author(s)	Relevant References	Pictorial presentation of schema	Name of Schema	Keywords	Short Description and Theoretical Background of Schema	Purpose of the development/Problem addressed																																																																		
36	Squires	Squires, G. (2004). A Framework for Teaching. <i>British Journal of Educational Studies</i> , 52(4), 342-358.	<p>¹ <i>Class</i></p> <table border="1" data-bbox="562 411 920 563"> <thead> <tr> <th>FUNCTIONS</th> <th>VARIABLES</th> <th>PERFORMANCE</th> </tr> </thead> <tbody> <tr> <td>Audit</td> <td>Objectives</td> <td>Presentation</td> </tr> <tr> <td>Orient</td> <td>Subject-matter</td> <td>Demonstration</td> </tr> <tr> <td>Input</td> <td>Level</td> <td>Question and answer</td> </tr> <tr> <td>Explain</td> <td>Structure</td> <td>Discussion</td> </tr> <tr> <td>Task</td> <td>Individual</td> <td>Simulation</td> </tr> <tr> <td>Feed back</td> <td>Group</td> <td>Practical</td> </tr> <tr> <td>Motivate</td> <td>Stakeholders</td> <td>Supervision</td> </tr> <tr> <td>Resend</td> <td>Physical setting</td> <td>Placement</td> </tr> <tr> <td>Explore</td> <td>Organisational setting</td> <td>Assignment</td> </tr> <tr> <td>Reflect</td> <td>Cultural setting</td> <td>Project</td> </tr> </tbody> </table> <p>² <i>Course</i></p> <table border="1" data-bbox="562 600 920 751"> <thead> <tr> <th>FUNCTIONS</th> <th>VARIABLES</th> <th>PERFORMANCE</th> </tr> </thead> <tbody> <tr> <td>Select</td> <td>Aims</td> <td>Analysis</td> </tr> <tr> <td>Induct</td> <td>Subject-matter</td> <td>Proposal</td> </tr> <tr> <td>Resource</td> <td>Level</td> <td>Design</td> </tr> <tr> <td>Manage</td> <td>Structure</td> <td>Marketing</td> </tr> <tr> <td>Model</td> <td>Individual</td> <td>Organisation</td> </tr> <tr> <td>Interact</td> <td>Group</td> <td>Enrolment</td> </tr> <tr> <td>Environ</td> <td>Stakeholders</td> <td>Delivery</td> </tr> <tr> <td>Support</td> <td>Physical setting</td> <td>Assessment</td> </tr> <tr> <td>Counsel</td> <td>Organisational setting</td> <td>Evaluation</td> </tr> <tr> <td>Examine</td> <td>Cultural setting</td> <td>Development</td> </tr> </tbody> </table>	FUNCTIONS	VARIABLES	PERFORMANCE	Audit	Objectives	Presentation	Orient	Subject-matter	Demonstration	Input	Level	Question and answer	Explain	Structure	Discussion	Task	Individual	Simulation	Feed back	Group	Practical	Motivate	Stakeholders	Supervision	Resend	Physical setting	Placement	Explore	Organisational setting	Assignment	Reflect	Cultural setting	Project	FUNCTIONS	VARIABLES	PERFORMANCE	Select	Aims	Analysis	Induct	Subject-matter	Proposal	Resource	Level	Design	Manage	Structure	Marketing	Model	Individual	Organisation	Interact	Group	Enrolment	Environ	Stakeholders	Delivery	Support	Physical setting	Assessment	Counsel	Organisational setting	Evaluation	Examine	Cultural setting	Development	Framework for teaching	<p>Functions</p> <p>Variables</p> <p>Performance</p>	<p>Two decades of research led the author to develop his framework for teaching; the headings used in the framework were developed together with practitioners. The headings need further and more systematic evaluation (p. 349).</p> <p>The framework consists of a three-dimensional model: functions (cognitive, affective, executive), variables (content, students, settings), and performance (class, course, institution) (p. 349). The framework is analytic rather than prescriptive (p. 350).</p> <p>The three functions of teaching often run together in practice (p. 345); the functions of teaching are not always the functions of teachers, and may thus be shared with or devolved to the learner (p. 345). The author emphasizes that the framework is not teacher-centered.</p> <p>The author believes to consider teaching within the varying context of further, higher and continuing education as well as schools, since this helps to isolate what is essential rather than situational in the process [of teaching] (p. 347). Some questions were not addressed in the framework, e.g. the "when" of teaching, the "teacher-self", or historical location. The author meant not to rule these questions out but to provide a "manageable framework that allows us to get some initial purchase on complexity" (pp. 347f).</p> <p>For further studies on this topic, the author suggests to draw together rationalist and empiricist approaches, which currently seem rather disjointed (p. 352). The author proposes that the framework helps in identifying and formulating productive research questions, e.g. which kinds of performance in the context of which variables fulfil which functions? (p. 352).</p>	<p>To retrospectively evaluate courses or analyze teaching based on the functions dimension to identify problematic aspects of teachers' work (p. 350). Headings may be used by students to analyse and manage their own learning (p. 350). Headings of functions and variables provide a way into literature on teaching & structure for case-studies as well as personal experience (p. 350). The headings remind teachers of aspects of work that were relegated to the background & the framework subsumes the dualisms of pedagogy (subject-centred vs. student-centred; whole class vs. small group; didactic vs. facilitative). It shall help to see teaching as a whole (p. 350). The framework enables teachers to say "this is what I do" to deliver a sense of professional identity and think beyond the immediacies of current work (pp. 350f). The framework provides a language for group discussions on teaching practice among teachers (p. 351).</p>
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37	Visible Thinking	<p>Harvard Project Zero. (2008, August 14). Visible Thinking. Retrieved August 14, 2008 from http://www.pz.harvard.edu/vt/VisibleThinking1.html</p>	none	Thinking Routines	<p>Core routines (getting started)</p> <p>Understanding Routines</p> <p>Fairness Routines</p> <p>Truth Routines</p> <p>Creativity Routines</p>	<p>Visible Thinking has been created following a number of years of research in children's thinking and learning, along with a sustained research and development process in classrooms. It is a "broad and flexible" framework for enriching classroom learning and fostering students' intellectual development. Goals: deeper understanding of content, greater motivation for learning, development of learners' thinking and learning abilities, development of learners' attitudes toward thinking and learning and their alertness to opportunities for thinking and learning (the "dispositional" side of thinking), a shift in classroom culture toward a community of enthusiastically engaged thinkers and learners.</p> <p>Visible Thinking is designed to foster "really good thinking", which involves abilities, attitudes, and alertness.</p>																																																																			