

## Blended learning design matrix

A matrix for the design of blended learning environments

The “blended learning design matrix” has been developed within the eL3-project as a scheme for collecting practical experiences and “collective wisdom” of the network partners, and it shall be used as a device for analyzing and planning of blended learning environments.

The matrix was developed to support blended learning designers to consider important facts and influencing factors of their learning offer concerning:

- Setting of the course/seminar
- Existing knowledge of their learners
- Existing and aspired competencies of their learners
- Learning processes
- Transfer and
- Controls

How is the matrix to be read?

Column 1 is the thematic didactic area of the teaching/learning situations, here fundamental parameters of didactics can be found, like the question of time in different forms. Some categories of this column representing the second dimension in the matrix situation, were developed from the expert system which was further developed in connexion with the “Goettingen Catalogue of Didactic Models” for the selection of didactic models for given teaching and learning requirements.

In column 2 one can find important aspects of organising instructional environments in different approaches, mostly they are formulated as questions; these suggest a first impression advantages or disadvantages of the approaches.

In column 3 every designer can describe the situation within which he/she plans, the given parameters what has to be developed.

In column 4 remarkable features concerning course situations with face-to-face learning can be inserted by the designer

In column 5 remarkable features concerning course situations with e-learning can be inserted by the designer

Column 6 remarkable features concerning course situations with learning in practise/on the job can be inserted by the designer

In column 8 you find acting recommendations.

The matrix is free for your adoption and usage if this source is quoted.

If there are further developments of the matrix or parts of it, we would be glad to get copies and reports on your experiences. Please contact us via <http://www.blinc-eu.org/>

		Relevant notes to be inserted by designer				
Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	Acting recommendations <sup>7</sup>
		<b>1. Setting:</b>				
time - active learning time (ALT) - biological time (BT) - calendar time (CT) - developing time (DT)	<p><b>Congruence between the 4 modes of time?</b>  <b>Clustering is possible?</b>  <b>Will there be a fixed time schedule (one hour daily, for ex.)</b>  <b>How are they measured?</b>  <b>Which is variable?</b>  <b>What will enhance getting more ALT?</b>  <b>How can we diminish DT?</b></p>					<p>As active learning time is one of the most important process variables in learning and teaching it should be regarded as a key question in blended learning design. Be aware that it is clear how the components of BL synchronize the different time needs. There could be a mutual compensation, mostly in the mode of EL, because there is often much variety and there are lower costs: if a learner is studying one or three hours in the EL environment is not so important for the delivery system (only much costs concerning his working time, if he/she does it during that).  Learning time has at least 4 components:  - active learning time is the time a learner actively deals with the subject of learning; normally, learners differ very much in need for learning time  - biological time is the passing lifetime of the learner;  - calendar time where a relationship to e. g. work can be established;  - developing time for the establishment of the learning environment and its elements like course material etc.  If active learning time is high and there are many learners and there is few teaching personnel, then there are good reasons for EL, because many learners can be involved, provided that there are good learning devices (material) and possibilities for learners' self-control.  Propose a specific 1-2 and a less specific 2-3-year vision.</p> <ol style="list-style-type: none"> <li>Ensure tight integration between business, human resources, and knowledge and performance management.</li> <li>Focus on the learner, learning, and improved performance, not the tools and technology.</li> <li>Provide evolving policies, systems, strategies, processes, and prototyping that implement products over incremental improvement cycles.</li> <li>Transition analysis into comprehensive, long-term, evolving problem-solving objectives and strategies (i.e., identify the gaps, fulfill requirements for today, and plan for tomorrow)</li> <li>Provide strategies for developing on and offline "blended" solutions that support enterprise-wide infrastructure, individualized environments, supportive</li> </ol>

<sup>1</sup> This matrix further on is a planning device for instructional designers.

<sup>2</sup> In this column one can find important aspects of organising instructional environments in different approaches, mostly they are formulated as questions; these suggest a first impression advantages or disadvantages of the approaches.

<sup>3</sup> In this column every designer can describe the situation within which he/she plans, the given parameters what has to be developed.

<sup>4</sup> Special features can be inserted if the design contains situations with face-to-face learning.

<sup>5</sup> Special features to be done if the design contains situations e-learning.

<sup>6</sup> Special features to be done if the design contains situations with learning in practise/on the job.

<sup>7</sup> Here you find acting recommendations.

Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
						<p>online learning relationships, collaboration, communication, and e-learning culture.</p> <p>f. Provide strategies (design and technology) for sharing or repurposing resources (e.g., interweave transition between instruction, performance, and knowledge management).</p> <p>g. Provide realistic learning and performance objectives and solutions. Measure not only improved business and performance, but also improved online learning ability (more self-motivated, self-directed, and self-assessed learning).</p> <p>h. Benchmark today's solution and provide evaluation criteria for today's and tomorrow's evolving solutions.</p> <p>i. Consider scalability, security, global standards, global communication and infrastructure, and evolving requirements.</p> <p>quoted from: <a href="http://www.trainingplace.com/building.htm">http://www.trainingplace.com/building.htm</a></p>
reference system responsible body sponsors clients beneficiaries interest groups	<p>Is there "one vote" (unanimity)?</p> <p>How is the decision process settled?</p> <p>Are there interests with conflict to each other?</p> <p>Which groups will profit from better work of trainees?</p>					<p>Comparative Analysis of the CLIENT's Business Goals, Objectives, and Strategies and Learning and Performance Requirements. Include:</p> <p>a. Learner Analysis of existing and new learners. Identify psychological, cultural, organizational, and sociological needs and readiness and provide direction for individualized, self-motivating, and collaborative learning environments, culture, and community.</p> <p>b. Performance Management and Measurement Analysis. Identify business and individualized learner needs. Establish measures to assess and report increasing levels of expertise and improved performance aligned with business objectives. Identify domains of expertise not just for learning and job performance objectives but also for improved online learning ability.</p> <p>c. Training Analysis. Integrate legacy and new e-learning programs with on and offline solutions.</p> <p>d. Content Analysis. Provide direction for production of content library and assessment (usability, development, administration, management, sharing) for knowledge, performance and instruction.</p> <p>e. Usability Analysis. Determine usability of learning solutions (including curriculum management, user registration and administration, content delivery, etc.).</p> <p>f. Technology Analysis. Determine what technology and tools are available, ready, and useful, and meet learner needs and performance objectives.</p> <p>g. Cost Benefit Analysis. Determine costs based on 1-3 viable solutions. Explore high, medium, and low approaches).</p> <p>h. Human Resource and Environmental Analysis. Determine impact of supporting learning systems, client relationships, collaboration, and organizational development.</p> <p>i. Additional Analysis. Consider additional analysis, including diagnostics, implementation, marketing, help, customer and technical support. Evaluate extent of resources needed to accomplish key business initiatives/goals.</p> <p>Make provisions for an insight into situation, needs, interests of all participating groups and institutions and the matching between these:</p> <p>quoted from: <a href="http://www.trainingplace.com/building.htm">http://www.trainingplace.com/building.htm</a></p>

Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
resources - finances - building/rooms - electronic equipment - natural environment - practise/production	How is the unit cost determined for each approach to learning? How can human resources be identified and assessed? Is there a special budget for training? How can we avoid negative effects on practise/production by trainee? How can we reach positive effects on practise/production by trainee? Will traditional learning rooms be unnecessary? How is the training embedded into the enterprise (or outside)?					The more learners you have, the lower are costs per persona. The more cycles (repetitions) you plan, the lower are costs per cycle. e-learning as well as blended learning have to be seen as investments. You clearly should avoid a situation of doubling, i.e. having two parallel systems. Better would be a gradual innovation and shifting from traditional ways step-by-step. There have been given numerous reports on success in reducing training costs by starting an e-learning environment, if the number of learners is large enough. But in normal practice it is a very tricky thing to calculate training costs exactly. With the concept of a blended learning environment it is not possible to divide in an instructor-led situation vs. a technology-led one; with blended learning you need some amount of both, for ex. in addition to media the tutors who overtake the pedagogical functions (motivating, correcting etc.) which are of more importance when you have inexperienced learners. Under <a href="http://www.e-learningguru.com/articles/art5_1.htm">http://www.e-learningguru.com/articles/art5_1.htm</a> you can get further general information. and under <a href="http://www.e-learningguru.com/articles/art5_2.htm">http://www.e-learningguru.com/articles/art5_2.htm</a> even a very concrete calculation.
personnel - authors - teachers (instructors) - tutors - supporters (technical, administrative) - experts	Instructors and learners: What is/should be their - qualification? - motivation? - independence? - "loyalty" to the programme? - special requirements by the programme? - preparation and training for the programme? - participation in developing the programme? How can we get the necessary people or qualify them?					Pay much attention to a conscientious allocation of responsibilities on the one side, and good matching between these persons on the other side. There is much danger that work might be done repeated or that one group impedes the intentions of another one; for ex. instructors and tutors should convert the products of the authors into practise and should not invent new conceptions.
demands aims results products guidelines institutional needs criteria for evaluation	How can we identify aims and criteria? How can we measure results/effects? Are repetitions of the programme planned?					There is much probability that demands are conflicting, before concretisation of the programme come to a matching.
context order of magnitude comparable institutions deficits and strength in education	Is the institution able to organize a programme of its own or should there be a cooperation? How can the strength be used as catalyst? Could the programme even be offered/sold to other institutions? How long will the programme be					In presence learning you will have more possibilities to consider in a flexible way certain groups that are used to work in cooperation, if these groups are large enough to build an organizational cluster. In e-learning the different groups would need different leaning programs, assignments etc., and this should be prepared before the start of a course, where in presence learning rearrangements are more easy.  Highly decentralized institutions may give an advantage to e-learning or Blended Learning if learners might better be reached by electronic contacts.

Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
traditions and habits orientation to the future	running?					
target group (learners) - demographic characteristics - cultural background - motivation - availability - preknowledge - needs - learning experience - learning styles and strategies - homogeneity	- How are target audiences identified? - How are learning needs assessed and regarded? - How do you identify deficits? - What choices are given to the learners? - Are the learners more homogeneous or heterogeneous? - How are learning styles analysed and combined? How can different learning styles be considered?					<p>What is the background of motivation for learning? Perhaps learners like the environment of a training institution more than the content of learning, or they like to discuss and not reading long texts. Which are the incentives of the traditional learning situation, and in which way are they kept within the innovation?</p> <p>If (most) learners have low motivation and the level of required competencies is high, then decide for presence teaching, because there will be better conditions for control of learning processes, provided the teachers are capable to enhance motivation and for monitoring of learning progress.</p> <p>If learners prefer systematic, guided, "secure" learning ("serialistic learners"), they will better learn with well prepared and structured programmes, may be with an instructor in presence may be with e-learning (then give them the impression, that they are not alone and can have much help). If they are open minded to the methods how to learn and have much independency ("holistic learners" try to build up their own structure) you must give them an alternative to narrow guidance. In a BL-situation you can offer opportunities for both types (for ex. open material (background information) for discovery learning for holistic learners and CBT-type programmed material for serialistic learners.</p> <p>Is the motivation of the learners low and the expected competencies high, then PR, because a better control of the learners is possible; but only if the instructors try to find something for the motivation.</p> <p>Learners play the most important role in education programmes; there habits, motivation, intention, capability is more deciding upon the success of a programme than technical devices. So let them take part in planning and decision-making whenever possible and give them a realistic feeling that the programme is made for them and their convenience..</p> <p>Blended learning and especially e-learning require a certain self-directedness of the learners; if this is not given, it might be improved by more parts with tutors and/or presence learning.</p>

		Relevant notes to be inserted by designer				
Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	Acting recommendations <sup>7</sup>
		<b>2. Knowledge:</b>				
kinds of knowledge -	Which kind of knowledge will be dominant? Can the different kinds of knowledge be clustered?					Seite: 6 Knowledge is always existing per se. But in education programmes it has to be vitalized in such a form that it is useful for developing competencies. The differentiation between the various kinds of knowledge also helps you to decide whether a real profound theoretical knowledge will be necessary and perhaps an orientation might be enough, or whether acting knowledge might be more important than a theoretical one One can differentiate: - orientation knowledge - action-based knowledge - theory-based knowledge - sources for knowledge - meta (strategic) knowledge
Knowledge Dimensions - cognitive - affective - motoric/pragmatic	How is the relationship between these functions? Are there stages of development?					If there are mostly cognitive functions to be trained, EL will have an advantage, provided there are good materials and designs; a high amount of affective and motoric/pragmatic functions at least requires BL with special persons (tutors) and training parts (exercises)
Expert Knowledge - key qualifications (soft skills) - professional expertise - domain specific qualifications						This differentiation helps you to decide upon the level of attaining certain competencies and to see whether there might be transfer effects.  German: The term competence determines theoretical associations of didactic designers, which * refer to general abilities and knowledge of learners, * form culturally valuable units, * are related to demands, operational levels and knowledge elements * and which are or should be situatively available, and namely independent from the fact if they are the consequence of external requirements or of inner developments. In the context of didactic design the term competence is central insofar, as it bridges the gap between - demands (formulated by managements or administrations), - ideas of learning targets, (generally formulated by teachers, trainers or instructors), - abilities and skills (generally formulated by learning and test psychologists) and - Areas of knowledge (generally formulated by "expert" persons or specialists). A description of the competencies that should be developed should contain information about, * which class of competencies we are talking about, * which requirements the competencies refer to, * on which operational levels the competencies can be found and * which knowledge elements they integrated. In contrast to this the actual activities which can be observed and which refer to abilities or the acquisition of knowledge are called "performances".
<b>3. Competencies:</b>						
Social competences - public						One of the first results of empirical research on e-learning was that many learners missed the social environment of training courses, mainly when these had been arranged

		Relevant notes to be inserted by designer					
Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	Acting recommendations <sup>7</sup>	
	- team - partner						in an environment with high value in terms of leisure. This interest can be an argument for blended learning if one sees the positive aspects of it and is trying to develop learning situations with a good atmosphere.
	Self referring competences						Learners with a low IT competence may have a lower self-reliance when studying in an IT environment. In this case it is important to secure better IT competencies at first. <ul style="list-style-type: none"> <li>- self regulation</li> <li>- self motivation</li> <li>- self-reliance</li> <li>- self-reflection</li> <li>- self control</li> <li>-</li> </ul>
	Intensity, level of professionalism	- Are there minimum levels (break down) and optimum levels (ceiling) or consecutive levels? - Are transfer effects expected? - developmental potentials					Which level do you expect your learners: <ul style="list-style-type: none"> <li>- improvisation</li> <li>- capability under guidance</li> <li>- capability after preparation</li> <li>- routine</li> <li>- mastery</li> </ul>
<b>4. Processes:</b>							
Didactical model expository I.	Are there opportunities for new knowledge to be developed? Are there opportunities for learners					These topics are helpful for deciding on the selection of various of these models and whether they should be implemented in PL, EL or BL (for more details have a look at <a href="http://www.gkdm.de">www.gkdm.de</a> and consult the design tool-kit	

Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
task oriented l. discovery l.	to explore new experiences?					the average preknowledge of the learners, the average experiences of the learners with different forms of instruction, the capability of the learners for self-directed learning, the dispensability of the learners from their place of work, the conformity between learning environment and aspirated practice, the instructional qualification of available helpers for learning (teaching persons), the availability of media and other resources, the possibility to subdivide the time of learning in larger sections, the limitations through certification demands, the amount of orientational knowledge, the amount of practical knowledge,
patterns of interlacing - consecutive - ping-pong-model - parallel (optional) - functional splitting - sequential clusters	Is there a decision for one pattern or should there be a development?					There should be an interlinkage between the different modalities. Self-study phases could be closed with certain tasks that could be discussed in the following f2f-phase. Dependent of the content also project phases could be "accompanied" or supported by relevant eLearning offers for deepening knowledge or supporting documents. Learners should be able to see the state of development of their learning mates, therefore results should be shown to the course mates. Even better if learners offer their materials themselves in thematic blogs, WIKI etc. ("web 2.0")
didactical essentials						See the self-evaluation inventory which has been developed with the eL3-project. On: <a href="http://www.blinc-eu.org/1182/">http://www.blinc-eu.org/1182/</a> (authors' questionnaire) - clarity - structure - relevance - representation - application - feedback - stimulus - utility
cooperation between learners						Up to now this is a point to be more developed with e-learning and for which better tools have to be constructed (a chat is not very comfortable for more than 2 or 3 persons). But there can be built up learner groups when these are in neighbourhood. Sometimes, when there are complex electronic devices, e.g. it even might be helpful to let two learners work together with one computer.
important didactical principles						<b>Consider :</b> learning by doing learning by simulation anticipatory learning learning by playing self-directed learning individualized learning holistic learning learning by arguing learning by experience mastery learning

Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
						learning by discussion learning by discovery incidental learning informal learning learning by teaching dialogue-based learning mutual learning interdisciplinary learning
<b>5. Transfer:</b>						
lateral turnover in the job continuation						There should be clear agreements for improvement of salary and other benefits after successful completion of a training programmes, and a follow-up supervision.
vertical						job career self-organized learning imparting to others new fields of education
sustainability	How long will the training effects be sufficient?					For good sustainability e-learning programmes should be updated regularly concerning software, format, documentation, hardware devices.
<b>6. Controls:</b>						
Incidental, informal formal:	By whom? Can peers participate in a mutual learners control?					<b>If EL is established, it gives the chance to build a profound system of learning control and feedback. This even could be installed step-by-step</b> Seite: 9

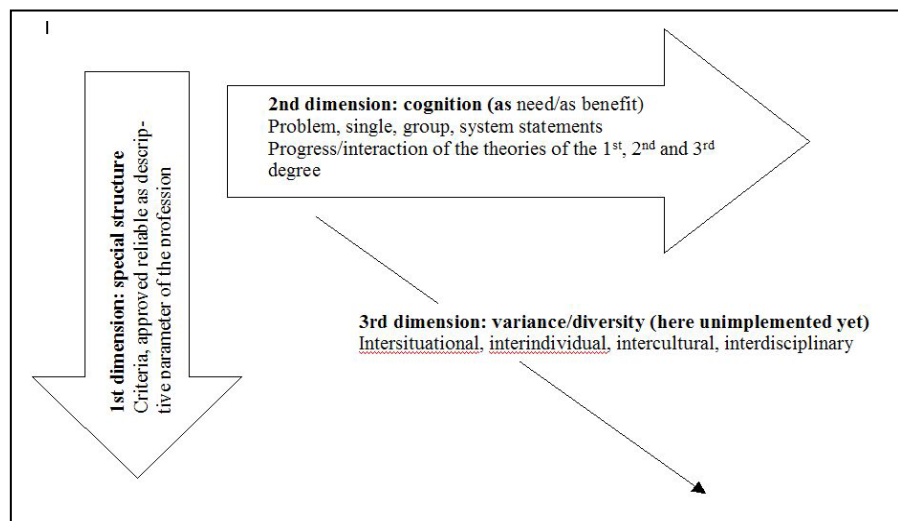
Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
	<p>How can records be kept and analyzed?</p> <p>How comparable are the records?</p>					<p><b>Seite: 10</b></p> <p><b>Learning controls in blended learning environments</b></p> <p><b>A. Functions:</b>  Feedback for learners, teachers/tutors, producers/authors/designers  Feedback for various partners or the "system"  Feedback for clients, feedback for the public</p> <p><b>B. Forms:</b></p> <ol style="list-style-type: none"> <li>1. Right/wrong, "special" wrong  direct input, multiple choice, positioning, selection from list, fill out blanks  right solutions prepared in a database  speeded, sequential, collection, direct solution, active/passive</li> <li>2. short text  keywords to be proved, tutor feedback, peer feedback, self feedback: "best" answer is given for comparison</li> <li>3. arrangements/diagrams, pictures  (needs special device)</li> <li>4. dialog  oral examination, online?, disputation</li> <li>5. essay  correction with remarks (special tools?)</li> <li>6. report</li> <li>7. demonstration  e.g. with video documentation</li> <li>8. presentation</li> <li>9. special software type  e.g. solution in a CAD software</li> <li>10. "teachback"</li> <li>11. practise</li> </ol> <p><b>C. Components of BL:</b></p> <ol style="list-style-type: none"> <li>1. e-Learning  -automatic presentation, registration and analysis  -comparable data for  -control of person</li> <li>2. presence-learning  -control of person  -greater variety  -more effort for correcting, but normally better feedback for learners</li> <li>3. practise-learning  -"real" feed-back  -control of person</li> </ol> <p><b>D. Parameters (statistical analysis)</b>  Average (mean, median, modal)  Variance  Relation index upper/lower  Positive/negative correlations with single items, factor, sum</p>

Blended - Learning Design Matrix <sup>1</sup>	Questions <sup>2</sup>	Relevant notes to be inserted by designer				Acting recommendations <sup>7</sup>
		Description of the given case <sup>3</sup>	F2f <sup>4</sup>	eLearning EL <sup>5</sup>	project PP <sup>6</sup>	
						Omitted Summed score: percentile, homogeneity level of difficulty Take as much advantage of peer evaluating as possible, namely let learners who are in near institutions build up partnerships ("tandems"). These are unofficial examinations during the learning process, so there must not be a personal control.
essay	Who will mark the essays?					Start with much essay-type controls which are corrected by teachers or tutors; from these experiences one can gradually build up a more automated system. Be aware that correctors give a quick feed-back to learners and have a good administration (by software?) of learners' products and results.
enacting	Who can observe the practitioners and evaluate them?					This might lead you to a solution with reference persons in institutions of practise.
tests - informal tests - standardized tests	Are there already regular tests? Who can develop tests? How standardized should the tests be?					Formal tests can easily be done with eLearning, control of knowledge. Consequently, exams can be well prepared by eLearning (repititorium etc.)
system evaluation - Internal - external	Who has competence for an internal evaluation?					Quality development should be viewed as a key aspect, occurring in every single development and delivery process of eLearning courses and programmes, U.Ehlers, <a href="http://www.eqo.info/">http://www.eqo.info/</a>
certification	Who has rights for certification? Who will pay attention to certificates?					As certifications are a matter of legality, take provisions objective controls, for ex. by official examinations.
clients' control						Clients should be persistently contacted for feed-back on their interaction and experiences with the learners.

## Background Knowledge: Using matrices for instructional analysis and design:

There are copious systems for the classification of the illustration (as "model of") and planning (as "model for") of scientific, administrative, social and technological subjects matters, like the systematics for the classification of animals introduced in 1735 by Carl von Linné or the periodic table of the elements. In education the taxonomies have to be mentioned particularly: Since the sixties the classifications of learning targets (e. g. the taxonomy of learning objectives according to Bloom and others) play a significant role as part of the overall process of the curriculum development and the development of teaching. Such taxonomies of learning objectives are a means to describe in classifications the thinking, feeling and acting of the pupils as it is intended by the educational process. Taxonomies of learning objectives can be constructed as nominal scales or as hierarchical organising schemata.

The taxonomy developed by Bloom and others is an example for a hierarchic taxonomy which initially referred to the cognitive behaviour, it was later extended by the affective and psycho-motoric behaviour. In all three cases the learning objectives are structured from simple to complex which can represent a helpful basis for the planning and analyse of curricula.



For the planning and elaboration of curricula such taxonomies were designed two-dimensionally or three-dimensionally in order to systematise categories of content and behaviour for example (or intensity of behaviour as third).

Then, in the seventies in Muenster, the group around Herwig Blankertz developed the so-called didactic structural patterns ("didaktische Strukturgitter") as an approach of the two-dimensional systematics. This approach was spread and further developed in different universities and commissions dealing with curricula in the Federal Republic of Germany. By means of didactic structural patterns "the leading pedagogical and political intentions in the medium of technical issues are transferred to regulative criteria" (Blankertz 1975, p.206), which contribute to the development of curricula but which don't offer ready curricula yet. The latter was not desired because the freedom of decision and personal responsibility of the teachers were not supposed to be constricted too much but teachers (people from the practice) and theorists were supposed to communicate on an equal footing, in order to reflect on the lessons and its methods.

Structural patterns were supposed to help those involved in the learning process to express their own interest for changes and to contribute to changes themselves. In the framework of research models for causality considerations the so-called path analysis is to be recalled. This method allows to identify indirect influences. This does not mean that such a path analysis<sup>8</sup> would allow causality explanations<sup>8</sup> but it provides hypotheses of a new kind. The precon-

Structural patterns were supposed to help those involved in the learning process to express their own interest for changes and to contribute to changes themselves. In the framework of research models for causality considerations the so-called path analysis is to be recalled. This method allows to identify indirect influences. This does not mean that such a path analysis<sup>8</sup> would allow causality explanations<sup>8</sup> but it provides hypotheses of a new kind. The precon-

<sup>8</sup> „The path analysis is a statistic method for the verification of linear causality models. The strength of the causal relation between variables each is expressed by path coefficients. Path coefficients can be deducted from correlation coefficients or can be calculated from standardised input information as partial regression coefficients. (...)

dition for such a path analysis is a preferably comprehensive in the first place, secondly a presentation of variables and their relations that preferably correspond to the quality factors of the empirical social research to a great extent, which presupposed a high degree of elaboration. The findings (and practices) of blended learning haven't reached this point for a long time yet. With this the thought of networking is addressed at least, i. e. coherences are examined in terms of multiple possibilities for interconnections; a variable can be examined in many ways within a network model.

For the design of learning environments for blended learning such a model is particularly suitable to activate the elements that can play a role in blended learning: face-to-face learning, e-learning and learning in practice.

The BL-matrix was originally at the same time evaluation and planning tool.

The original BL-Matrix was split up in 2 parts:

BL-evaluation matrix and  
BL-design matrix

The first part serves as a grid to assign the findings from case studies, and questionnaires in to the relevant blended learning categories such as setting, target groups, competencies, demands and learning processes.

The second part serves as self-reflection and planning instrument for designers to check relevant parameters of their existing or future learning offer. The matrix is an inventory, not every parameter might be crucial for each learning offer – but it is always a value in itself to reflect about aspects that one might have not considered before and that could have an impact on quality and performance of the learning offer.

Haller, Hans-Dieter: Determinanten des Unterrichts. In: K. Frey u. a. (Hrsg.), Curriculum-Handbuch, München (Piper) 1975, volume 2, p. 539-564.

Weniger, E.: Theorie und Praxis in der Erziehung. In: ders.: Die Eigenständigkeit der Erziehung in Theorie und Praxis. Weinheim 1952.

---

The strength of the influence of all non-standardised variables is represented by residual path coefficients; their square results in the percentage of the unexplained variance. „ (Seibel 1972, p. 5)