

2. ADULT DIDACTICS

2.1 Teaching and Learning

Different concepts of learning are used in the current debate on personnel development. Terms such as informal, self-guided or emotional learning are employed. These concepts only have a loose relationship to the learning theories that are described below (behavioural, cognitive, constructivist and subject-based learning theories).

Learning Concepts

Learning can be defined as the competence-building acquisition of knowledge, capacities, and skills. It takes place not only intentionally (intentional learning) but also incidentally (functional or “*en passant*” learning), and not only in the institutional context of a school, training facility, university, etc. (formal learning), but also in real-life practice (informal learning) (see Dohmen 2001). Numerous international studies have estimated that informal learning makes up 60 to 80 percent of the overall competence acquisition (OECD 1977; Laur-Ernst 1988, among others). Therefore, learning is primarily not an institutionalised practice, but rather a “way of life” (Vaill 1998). Many of the learning theories described below fall short against this background. They disregard many of the learning efforts and processes that really develop competencies in young and adult learners – and the same happens with the learning culture practice, which is interpreted and conceptually guided by these theories in the educational institutions. The analysis and theoretical interpretation of learning still has to deal to a great extent with the “autodidactic” and the “facilitative turn” (Arnold 1999), i.e. the informal and self-guided learning processes in daily life, in the work environment and in real-life practice have to be addressed more intensively.

Learning Theories

A gross differentiation can be made between behavioural, cognitive, constructivist and subject-scientific learning theories. These theories are either strongly object-oriented (with respect to that which has to be acquired) or subject-oriented (with respect to competence development), and also account in different ways for the diverse stages of complexity of the learning process. Thus, for example, simple foreign language programmes (e.g. vocabulary training) can be planned and designed on the basis of behavioural learning theories; however these theories have only a limited application for explaining the development of complex problem-solving qualifications or key qualifications.

- a) *Behavioural learning theories* assume that human beings develop or modify their behaviour through stimulus-response conditioning: "Learning according to the principle of classical conditioning is based on the contiguity (time-pairing) of an unconditional and a neutral stimulus" (Zimbardo/Gerring 1996, p.212). This means that positive consequences (reinforcers, e.g. acknowledgement or praise) lead to the consolidation of acquired and displayed behaviour, whereas the absence of confirmation or negative feedback has the reverse consequence. Closer examination shows, however, that the behavioural learning theory has a very restricted explanatory value, and thus has only had very limited practical relevance to date (e.g. also in the new multimedia-based instructional design approaches). Robert Gagné already pointed out quite some time ago that stimulus-response learning is just one of the many ways of learning with which individuals acquire information and develop competencies. He identified a total of 8 ways of learning: 1. Signal learning, 2. Stimulus-response learning, 3. Motor chain learning, 4. Verbal chain learning, 5. Discrimination learning, 6. Concept learning, 7. Rule learning, 8. Problem solving (see Gagné 1969).

- b) *Cognitive learning theories* assume that learning (has to) "encompass the whole context of a series of behaviours" (Heinze 1986, p. 353). If "thought" can be considered as "the organisation of action" (Aebli 1980), then learning through which problem-solving oriented knowledge is acquired and the corresponding competencies are developed, can also be understood as a process which involves action throughout the sequence of planning, execution and monitoring. Cognitive learning theories highlight the problem-solving, insightful and deductive reasoning aspects of learning and are therefore especially suited to explain more complex learning processes, such as those that are likely to occur in vocational training (but also in secondary school or academic education) with the development of comprehensive key qualifications. Learning takes place during these learning processes not only through

the acquisition of new knowledge (assimilation), but also through the application, restructuring and further development of already existing cognitive structures (accommodation). A determining factor for the learning and action processes is that "(...) the relationship of the external stimulus to the response is no longer considered in isolation, but in addition to internal guidance mechanisms such as self-reflection, selective perception, cognitive strategies, ideas and wishes", as is described by the F. Baumgärtel's cognitive approach (1986, p. 470).

- c) *Constructivist learning theories* assume that the cognitive systems are closed autopoietic (self-organised) systems and are self-referential. That is why learning cannot be understood as a process in which information "can be transported from the outside to the inside", but rather represented as "a restructuring process within a closed system" (Luhmann 1987, p. 60). Accordingly, teaching cannot generate a stock of knowledge or develop competencies in others; it can only stimulate and facilitate restructuring or acquisition processes (see Arnold 1996 d). In this sense, H. Siebert states that: "It cannot be directed or determined from the outside but, at the most, stimulated and "perturbed" (disturbed). A person who listens to a lecture cannot reproduce what has been heard "like a tape recorder", but the lecture triggers personal thoughts, associations, emotions, as well as reflections that have only a loose connection to the lecture. (Siebert 2001, p. 195). Constructivist learning theories are the expression of a "change in the trends of educational psychology" (Reinmann-Rothmeier/Mandl 1997, p. 74): learning is no longer considered an individualised acquisition of information and behavioural change, but is bound to the complex mesh of biological factors, socio-cultural integration and emotional and motivational processes. Within the framework of such multi-perspective considerations, learning is presented as a "construction of knowledge": "Learning more means developing knowledge and competencies -on the basis of 'biological disposition', individual experiences and existing knowledge structures- which can be useful and usable in real-life situations. New information is connected to previous knowledge, it is interpreted against the background of one's own experience and thus "networks" are constructed that can train to act in concrete situations. (ibid.). This multi-perspective consideration also opens up the learning theory debate in regards to "knowledge management" in co-operative contexts. Sharing, developing and updating knowledge therefore presupposes the need to position learning in the sense of integrating it into an action and application context. At the same time, this can lead to lasting learning, where learners have an active-interactive role in the learning event and can incorporate their own experiences, questions and insight into the

problem-solving construction. Individual and organisational learning thus represent the two corresponding sides of knowledge management.

- d) *Subject-based learning theories* radicalise, in a certain sense, the constructivist view of learning, while simultaneously remaining bound to a strongly individualistic learning concept. They theorise learning from the perspective of the subject, while objective contexts (demands, stimuli, etc.) are completely excluded. In this context, Klaus Holzkamp presented a theory in 1993, which assigns a constitutive relevance to the “learning projects” of the learners. In his opinion, if the learners themselves do not have the “corresponding reasons” (Holzkamp 1996, p. 21), then intentional learning cannot take place. Holzkamp also distinguishes between “defensive learning” (learning to avoid disadvantages), which is typical of our educational institutions, and “expansive learning”. Both forms of learning follow different “thematic learning reasons”, that depend on “(...) the extent to which the understanding of objective and social contexts of meaning is related to *expanding/increasing my availability/quality of life through learning, or merely to avoid the drawback and threat thereof through learning*” (Holzkamp 1993, p. 190). Individuals learn in a truly lasting manner, in the sense of retaining and developing competencies, only through expansive learning, i.e. when learning “permits”, facilitates and promotes the development of the individual.

New Learning Requirements and Forms of Learning

The changing demands on people’s learning are also associated with new forms of learning. Some authors speak of transformative learning, which refers to a “second-order learning” (see Cranton 1994), and in the more recent discussions, organisational and emotional learning are also becoming crucially important (see Schreyögg/Sydow 2001). Common to these new learning forms is the debordering of their object as well as the fact that in addition to the psychological concepts, they draw on other concepts for their explanation as well. All these forms of learning also involve more complex processes, in which a fundamental reconceptualisation of the learning subject (e.g. as an organisation), the contents (including the emotional dimensions) and the learning process (not only the acquisition of new, but also the transformation of existing interpretation patterns or mental models; not only externally-guided but also self-guided learning) takes place.

- a) The concept of *organisational learning* which had been founded back in the early 1970s by C. Agyris et al. at MIT, has also been increasingly discussed in Germany since the early 1990s (Arnold/Weber 1995; Geißler 1994 1995;

Probst/Büchel 1994; Sattelberger 1991). In 1978, Agyris and Schön had already referred to the paradoxical interaction between individual and organisational learning and thus also marked the essential stimuli for the designing learning processes in organisations: "Organisations are not merely collections of individuals, yet there is no organisation without such collections. Similarly, organisational learning is not merely individual learning, yet organisations learn only through the experience and actions of individuals" (Agyris/Schön 1978, p. 9). From this definition it can be concluded that this does not imply "replacing" individual learning with organisational learning, but a more precise clarification and reciprocal fine-tuning of both learning levels. Further information for determining the contents and objectives of organisational learning are provided in the following definition: "Organisational learning occurs when members of the organisation act as learning agents for the organisation, responding to changes in the internal and external environments of the organisation by detecting and correcting errors in organisational theory-in-use, and embedding the results of their inquiry in private images and shared maps of organisation" (ibid., p. 29).

While individual learning is based on the acquisition of cross-organisational professional and specialised knowledge and the development of key qualifications, organisational learning is characterised by other contents. Organisational learning aims at theory-in-use in everyday practice by the members of the organisation, i.e. at their shared interpretations and visions about the routines and strategies in the organisation's everyday work. Consequently, organisational learning is related more to the transformation of explanatory and interpretative knowledge that is more or less typical of the organisation, and not as much to specialised technical knowledge or to the promotion of individual key qualifications. When enquiring about the interaction between individual and organisational learning at the level of contents, it is observed that on one hand, there is a need for a leadership style geared towards moderation and participation, so that the employees have the opportunity to participate in the development and modification of the interpretations of the enterprise's reality. On the other hand, for this kind of participation, employees require more than just technical or specialised competencies. Moderate leadership and expanded qualifications are thus intermeshed at the content level. This likewise applies at the level of objectives: the systematic development of a competence configuration on the side of the employees is a requirement for them to be able to participate in the joint development of the company cultures and in the expansion of the enterprise's collective knowledge base. In this sense, Probst and Büchel see in the modification of established "reference frameworks" the true core of organisational learning processes, whereby –since this always involves the

modification of values and standards that are “handed down”- “cultural development represents a fundamental path towards organisational learning” (Probst/Büchel 1994, p. 140).

- b) In the debate on personnel development, the improvement and further development of *emotional competencies* have been considered to be, for some time now, increasingly important prerequisites for the successful performance of individuals and enterprises (see Arnold 2001; Schreiögg/Sydow 2001). Thus, for example, the change-management competence, as a skill that aims at configuring change and overcoming crises, presupposes basic emotional skills for managing fear (of innovation, etc.). The development of this competence is necessarily linked to experiences acquired in the early stages of an individual’s development, of self-efficacy versus being exposed or feeling protected, versus feeling threatened. The patterns of fear or insecurity acquired at an early age require learning processes that reach deep into the personality structure; they cannot be simply modified with training or crash courses or by following certain moderate rules of “emotional management”.

Consequently, in recent years, an emotional turn has taken place in the competence debate, which placed “emotional intelligence” (Goleman), the “emotional brain” (LeDoux) and “emotional competence” at the forefront of considerations, thus taking into account the numerous references to the fact that emotions –according to the title of a book– are “our first reasoning”. The question whether and to what extent someone is in a position to release that which is known, to construct and design something new, accordingly has a greater relation to their basic emotional patterns than with any other cognitive knowledge base or competencies.

In this context, the “management of fear” (of losing, of the unknown, etc.) takes on significant importance. In her book “*Zäsuren und Krisen im Lebenslauf*”¹, Swiss psychologist Verena Kast –following Ulrich Beck– sees, in the capacity to manage fear and productively handle fear-causing situations, a “civilising key qualification”: “I would like to extend this key qualification to crisis management, because fear plays an important role in the development of crises, and fear management in crisis intervention. In this regard, one could say that the potential management of crises plays a key role in today’s society, and we should increasingly be taught and learn how to handle crises” (p. 16). Specialists in crisis intervention and monitoring have already developed the knowledge and the skills required to this effect:

| 1 (T.): Turning Points and Crises in the Course of Life

"This involves (...) the increased dissemination among people of this knowledge that specialists have, and that can be beneficial to people who are going through a crisis situation" (ibid., p. 17).

Nevertheless, guiding principles can help design the corresponding emotional learning processes. In this context, the approach of American Stephan R. Covey in "The Courage of Change" is helpful. In this book Covey describes, among other things, the need for clear priorities ("put first things first"), of imagining the outcome of actions ("begin with the end in mind"), of recognising the constructivity and therefore the modifiable nature of viewpoints and ways of evaluating things ("paradigm as the map not the territory") and of looking after the emotional support and tending relationships ("emotional bank Account"). These and other considerations can be understood as pragmatic elements of a curriculum to improve change management competencies (see Covey 2000).

c) These deep-reaching organisational or emotional learning processes cannot be formed through interventions or adequate "training", but instead presuppose a transformation of early-acquired emotional and interpretation patterns. In order to describe the required maturing processes, or rather the post-maturing processes, as well as the reflection processes, it is necessary to facilitate *transformative learning processes* in the sense of second-order learning. Second-order learning is not only restricted to the acquisition of new knowledge and the development of new competencies; its objects are rather the individual's epistemological and emotional patterns. One does not only acquire new knowledge, but along with these transforming learning processes, modifies one's habitual ways of perceiving and feeling things, and the latter should be a priority, since many reasons account for the fact that we see the world the way we feel it and the way we ourselves "feel".

2.2 Adult Learning

The notion that mainly young secondary school graduates aged between 15 and 18 years are trained in the German Dual System of Initial Vocational Training has long ceased to correspond to reality. If in 1970, the average age of the apprentices and students entering vocational training centres was 16.8 (males) and 16.4 (females), by the year 1992, this average had risen almost two and a half years reaching 19.0: "While in 1970 only about one-fifth (22%) was 18 years old and older, at present, almost three out of every four trainees are that age" (BMBW 1994, p. 67). Trainers and teaching staff at vocational training centres must therefore adjust themselves to a new clientele; these are no longer adolescents but

young adults". That is why it is also advisable in vocational training to reflect on the features and didactic "characteristics" of learning that is suited to the needs of adults.

The following section is dedicated to this subject from two perspectives:

1. What does modern research on adult education say about adult learning?, and
2. What conclusions can be drawn from these newer propositions to support vocational training measures from the perspective of adult education?

1. *What does modern research on adult education have to say about adult learning?*

If I am not mistaken, the modern adult education discussion has, to a large extent, ceased to determine the "characteristics" of adult learning by first and foremost contrasting them with how youth learn, although this need not lead to the understanding that this contrast has become obsolete nowadays. Nevertheless, during in recent years, there has been a consolidation in the idea that the characteristics of adult-oriented learning differ only by degrees from the requirements of modern and live training work with youth. Thus, at the beginning of the 1980s, O. Peters already stated that "self-determination", "self-organisation" and "communicative learning open to experience" are important didactic principles "for children and youngsters as well" and concluded: "If these principles are already valid for children and youngsters, so much more reason for applying them to adult learners" (Peters 1982, p. 144). This *shift in the approach from dissimilitude to parallelism in adult-oriented learning* is also "supported" by the extension of the youth phase of life in our post-modern age". The continuous *extension of the youth phase* in the context of social differentiation processes – as well as of biographical destandardisation and individualisation processes also favours the *erosion of the role of adults*, i.e. that adults "are no longer what they used to be".

Adults today are being increasingly confronted with social demands which used to be typical of a transient phase of youth: "Today, not only young people but also adults are faced with the task of finding their place in society and of developing a sustainable life project" (Arnold 1990, p. 342), a process that could be described as a juvenilisation of adults (ibid.). In this sense Aldo Legnaro also speaks of the "disappearance of the difference between youth and adults" and states:

"In fact adults also evidence phases of life that, traditionally, were only characteristic of youth, e.g. phases in education, phases in reorientation and self-discovery, phases for testing new life projects; conversely youth are taking on

roles that were traditionally only assigned to adults, such as consumers, participants in market developments, target groups for fashion and lifestyle advertisements (...).

Logically enough, ages are no longer defined on their own basis, but as variations of different degrees of "being young": The invention of "the young old person" as a new social category is a clear example of this trend. With these "juvenilisation" processes, "actually" everybody is young, although some are younger than others. (...) Youth is going through a development process: "from the status passage to the open-ended transitional biography" (...).

Now this outline equally applies to young people and adults, but leads me to a question that I consider quite crucial with regard to the issue of "displacement": How does one become an adult in a society whose adults increasingly have childlike attitudes? Or, in other words: How does one become an adult in a society that does not offer any true model of adulthood?" (Legnaro 1992, p. 14).

Thus, social modernisation favours important trends, which in the long run also lead to a *deconstruction of the adult*. In this context, Jochen Kade speaks about a "dynamisation of the concept of adults" (Kade 1989, p. 801) and also points out that when approaching adult learning, one has to detach oneself from the differential perspective of stage-specific considerations (i.e. the difference between youth and adults).

A further shift in the consideration of adult learning is characterised by the renunciation of the didactic illusion that people learn what is taught (see Holzkamp, p. 28). The teaching perspective is being increasingly displaced by a learning perspective, i.e. a perspective that also strives to explain what reasons could account for the fact that adult participants "(...) very often do not learn what has been taught, that they learn what has not been taught, or that they learn when teaching does not even take place" (Schäffter 1994, p. 6).

If one attempts to summarise the new contributions to adult learning didactics, which view adult learning from the learning perspective, it can be established that the characteristic feature of adult learning that has crystallised most over the past years is that of "*biographicity*" (Alheit 1990), or the biographical background and roots of the learning motivation, learning process and learning results. A further characteristic is the insight into the necessary *subjectivity of acquisition processes* whose success can only be indirectly promoted – by means of the "arrangement" or the "modelling of learning environments" (Kösel 1993).

What ultimately becomes significant to adults –according to the biographicity thesis– must arise from the adult’s context of significance, or it should be designed and presented as something that is capable of being linked to this context or inferable from it. This didactic perspective is clearly different from the fundamental, though in many cases implicit assumptions of the representation models of academic teaching according to which firstly, one learns what one has been taught, and secondly, that the mediation between subject and object in the learning context can somehow be professionally “enforced” (Meueler 1994, p. 616). On the other hand, in 1984, Enno Schmitz already argued in favour of the fact that adult learning should be conceptualised as a “knowledge process linked to the life world”, to the effect of which he also developed a clearly non-objectivist learning concept: Viewed this way, learning does not mean, as in the stimulus-response schema, that existing stimuli are replaced with new ones, but that it is subject to the logic of the knowledge process, which incorporates new experiences into existing interpretation schemata” (Schmitz 1984, p. 03).

This concept of adult learning is also supported by the newer constructivist didacticians (see Arnold/Siebert 19965), as well as by some cognitive learning theories. They explicitly point out that knowledge cannot be “transmitted”, but rather developed and constructed only on the basis of the individual’s own experience (Clancy 1986, p. 5). They also assume that only knowledge which has been constructed by the individuals themselves and integrated into their own cognitive interpretation structures is knowledge that has been truly understood and is meaningful. For the constructivist learning and didactic models the “sense-making” aspects and the subjective “management” of meaning are of vital importance (see Kuhl 1993; Krüssel 1993); learning is essentially conceived as the learning of interpretation and meaning: “Meaning is seen as rooted in, and indexed by, experience. (...)Therefore, that experience must be examined to understand the learning that occurs” (Duffy/Jonassen 1992, p. 4). For this reason, the analysis and evaluation of the learner’s point of view (Brooks/Brooks 1994, p. 60 et seq.) becomes a crucially important value for the informed understanding of adult learning which is based on the cognitive constructivist theory. *Adult learning ultimately does not have to do with “certainty” and the objective “adjustment” of interpretation patterns and knowledge, but only with initiating and promoting learning processes in the sense of a “transformation” of interpretations (Mezirow 1991) by means of search movements (Tietgens 1986) and meting out the experience of distance and difference. To this effect, adult educators also “intervene” by generating multiple and unfamiliar perspectives, i.e. by proposing other points of view that had been overlooked, that are provoking, productive and challenging.*

The learners’ didactic self-organisation is essential in this regard because in the end, it is they alone who can achieve the incorporation of new perceptions

and knowledge components into their cognitive structures. These processes of adult learning that are ultimately always self-organised, cannot be “generated” didactically but only “facilitated” by the providers of scientific further training or in the framework of distance learning. This therefore necessitates an extensive deregulation of the learning processes of scientific and academic further education. In the more recent discussion on adult education, the outlines of the concept of “facilitation didactics” are becoming clearer; this concept does not establish optimum didactic planning and the reduction of specialised knowledge to be transmitted as the sole focus of a teaching and educational theory, but also –in the sense of an elliptical approach– the learner’s acquisition activities. Expressed as a formula, the following could be stated: the fixation of traditional didactic planning is complemented with fixation in the didactic realisation, or with “situational lesson planning” (Mühlhausen 1994), in the framework of which the learning arrangement implementation of new learning forms gains relevance.

Modern adult education research has substantiated the biographicity thesis in many aspects, which, however, reconsiders the relevance of age with respect to the learning capacity. If research on learning had, for many years, placed age and adult learning capacity in a decreasing relation, according to the motto that “learning capacity decreases progressively as age increases” (= adolescence-maximum hypothesis) or “You can’t teach an old dog new tricks”, research on learning psychology over the past two decades has demonstrated that chronological age in itself is by no means an obstacle to learning: “Thus individual learning differences (...), within the same age group are often greater than intergenerational differences “ (Siebert/Seidel 1995).

The issue of the contents of the learning processes, on the other hand, is of decisive importance for the development of learning skills throughout the lifespan. Whereas American educational psychologist Thorndike had already detected a significant difference in retention between young people’s and adults’ learning capacity only in mechanical learning, i.e. in the mere mnemonic storage of figures and syllables (see *ibid.*, p. 22), educational psychologist H. Löwe, from the former German Democratic Republic, expanded and completed this finding, indicating that at adult age a “restructuring” of the learning capacity takes place, whereby the slower learning rate is compensated by a greater performance capacity:

“It has been demonstrated that the learning performance of adults cannot be approached exclusively from age-related biological aspects, but rather primarily in relation to social factors (previous school education, the profession and the different opportunities it provides for memory training, etc.)” (Löwe 1970, p. 195).

Löwe defends the argument of distinguishing between several factors of a “learning intelligence”, namely “the capacity to learn” (how much can be learned?), “ease of learning” (fast or slow grasp), “retention of what has been learnt” (depth or superficiality), “learning motivation” (the interest in learning) and the “learning intensity” (the overall disposition to learn) (quoted by Siebert/Seidel 1995, p. 31). It is evident that if such a differentiation is made of the learning concept, then age and learning capacity are by no means only connected in a degressive relationship: The decisive aspect is rather that the adult’s *activity* (activity theory), i.e. continuous activity throughout life favours (depending on the level of activity) the “learning success” at any age (Löwe 1970, p. 170).

If one assumes that there is no such thing as “*the adult (learning) age*” and “*the learning capacity*”, but that different aspects and dimensions of a “learning intelligence” can be expressed in very different ways, depending on the social origin and socialisation, depending on the level of demand in the profession, and depending on the activity or activation potential, then it is obvious that one can look for different types of adult learners, i.e. to ask how these different factors are expressed in the adult learners’ behaviour. In this context, a recent empirical study on courses in adult vocational training institutions, determined five types of adult learners:

Type 1: The Theoretician

Type 1 learners enjoy learning, are reliable, confident, and have concrete ideas as to what they want to learn. They are not only interested in the practical application but also in the theoretical basis. They like to learn and learn well from texts. When they acquire something new, they make an effort to understand the interrelationships (...)

Type 2: The Practical Application-oriented Type

Type 2 learners are always guided by the question regarding what they can do with the new contents (...). Theories and pure factual knowledge are not enough. Difficulties arise when there is a lack of illustrations and when the learning contents are presented in a theoretical manner (...).

Type 3: The Model Student

Type 3 learners are ambitious, hard-working and studious; they learn in order to get good marks, certificates and diplomas. Type 3 learners prefer guided learning to autonomous learning; they prefer to have contents explained to them rather than to have to figure out things on their own (...). They find it difficult to learn, particularly in situations in which there is no definite solution.

Type 4: The Indifferent Type

Type 4 learners only learn what is essential for life. They do not have any distinct likings or particular dislikings, everything seems equally right (or wrong) to them (...). They encounter difficulties, although these do not arouse their ambition nor are they a cause for agitation, nervousness or self-doubt (...).

Type 5: The Unconfident Type

Type 5 learners assume that they will encounter numerous difficulties in their learning process and that they probably will not understand many things. They therefore restrict themselves to retaining the major contents as best they can. They view difficulties as the result of their lack of capacity, they react with agitation and nervousness. (Schrader 1994, p. 110 et seq.)"

These results and considerations do not only cast a new light on learning in adult education, but also lead to a renewed view of the relationship between teaching and learning (see Müller 1995, p. 314 et seq.). Teaching loses its character of "generating" and "imposing" knowledge and learning objects and enquires about the corresponding learning types and thus also about the biographicity, i.e. about the individual reasons for learning and the learning projects of adult learners in order to provide advice and guide the learning processes in a manner that is "suited to adults", well as to "facilitate" the corresponding search movements and consolidation of perspectives. *The teacher presents or moderates an official topic, which is used by the learners –each according to their respective learning type– as a sort of "quarry", i.e. they extract from it, so to speak, the "building blocks" or components of meaning that they need to elaborate on their own learning topics and that serve to supplement their specialised knowledge, i.e. –to continue with the metaphor– to construct or reconstruct their own house of meanings.* During this process, the interaction between the learning subject and the object follows a non-deterministic rationale. Subject and object are only linked to each other by a kind of "structural coupling" (Maturana/Varela 1987, p. 85), i.e. one depends structurally on the other, although they interact and react as closed autonomous and operational systems.

2. Initial Conclusions on the Justification of Vocational Training from the Adult Education Perspective

What conclusions can be drawn from the considerations described above regarding the development and design of adult education and learning models in general, and vocational training in particular?

In the first place, and of vital importance in my opinion, is the standpoint that learning programmes for adult education should be basically structured from

the *exploration perspective* or from the *explorability perspective*. This standpoint is expressed through a *renewal or expansion of the technical or specialised contents or technical (specialised) didactic perspective in adult education* (see Müller 1996).

This expansion is particularly imperative for the technical didactic perspective of vocational, entrepreneurial or company training: since along with acquiring the bare contents of the required knowledge, capacities and skills, professional learning aimed at transmitting key qualifications also requires the promotion of broader, more general and personality-related elements. To this effect, a didactic concept is required, which not only involves a detailed examination of the necessary contents in terms of the selection, preparation and transmission of specialised/technical knowledge, but also systematically keeps in mind the necessary extradisciplinary contents, in a “stereophonic” conception of the learning process. Disconnected and detailed knowledge should be replaced by didactic knowledge. To this effect, it is crucial that didactisation should be action-oriented, i.e. that it systematically “inquires” about the learner’s potential self-action to explore and transfer the learning object. If technical (specialised) didactics – which is almost unknown in the adult education debate – had always been understood as the attempt to first reconstruct the “structure of a thing” or of a discipline, and then estimate and reduce its individual components on the basis of their specific learning relevance and on the basis of the “comprehensibility” (Grüner) for the learners, then action-oriented and acquisition-oriented didactisation is characterised by operational thought, i.e. thinking in terms of possible learner actions. For the purpose of this operational thought, the issue of the operationalisation didactics (“In which problems related to professional practice and action could the necessary disciplinary knowledge be “embedded”?) and the issue of the didactic arrangement (“What are the necessary systematic measures for achieving self-exploration?”) are of vital importance. Contents should be developed from action contexts; cues and problems should be used for working, which consciously pave the way for the individual acquisition and transfer of the learning contents, although their specific practical application and configuration is left to the learner himself. The design of vocational training processes “suited to adults” should, therefore, be “stereophonic”, i.e. it could take place, in this sense, if the following special didactic design tasks were systematically applied, namely:

- a) a clearly justified analysis and didactic reduction of the necessary disciplinary knowledge, and
- b) a preparation of the learning contents that should be geared both towards self-exploration (“didactic arrangement”) as well as at action (“didactic operationalisation”).

Figure 4
 THE DIDACTISATION PROBLEM:
 EXPANDING THE PERSPECTIVE OF SPECIAL DIDACTICS

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|--|---|---|
| <p>A. Necessary Disciplinary Knowledge</p> <p>Motto: "It is not necessary to teach and learn everything there is"</p> | <p>(1) Didactic Analysis</p> <p>Question: What contents or elements of the contents are "worthwhile" to learn?</p> | <p>(2) Didactic Reduction</p> <p>Question: What can/must be left out in order to increase "comprehensibility"?</p> |
| <p>B. Necessary Extradisciplinary Knowledge</p> <p>Motto: It is not knowledge in itself that is relevant, but rather the development of exploration and application patterns.</p> | <p>(3) Didactic Arrangement</p> <p>Question: What measures should be taken to achieve self-exploration?</p> | <p>(4) Didactic Operationalisation</p> <p>Question: In which problems related to professional practice and action can the necessary disciplinary knowledge be "embedded"? (Operational Thinking)</p> |

What could serve as a "conclusion" or a constructive application to the statements made on the issue of vocational training that is "suited to adults"? If one were to step aside –as was already described– from the traditional *differential perspective* on the issue of learning that is suited to adults (difference: young people versus adults), and also attempt to optimise or design adult learning that is more "suited to adults" from the perspective of the characteristics that were elaborated (key words: "biographicity", "interpretation of meaning", "acquisition learning" or "the quarry model", "types of learners" and "expanding the perspective of technical (specialised) didactics"), then one can, in my opinion –in a very provisional manner– use the following "10-from-5 grid", i.e. "10 criteria from 5 didactic aspects of learning that is suited to adults", as the basis for the attempt at optimisation:

Figure 5
 “10-FROM-5” DIDACTIC ASPECTS AND CRITERIA OF LEARNING
 SUITED TO ADULTS (Arnold 1996d, p. 199)

| 10-from-5 grid for “Learning Suited to Adults” | |
|--|--|
| Didactic aspects | Didactic Criteria |
| Personal didactic choice Didactic self-organisation Communicative learning that is open to experiences Justification of the technical/ specialised contents Extradisciplinary justification | <ol style="list-style-type: none"> 1. Learning objectives/contents/topics can be jointly defined. 2. Personal learning projects can be integrated and further developed. 3. Organisation of learning is flexible in terms of time and methodology, and is open to many ways of learning. 4. Targeted learner, activity and self-exploration methods are applied. 5. Consciously linked, as far as possible, to life situations and/or professional experiences. 6. The social and communicative aspects of the learning process are intentionally promoted. 7. The selection of contents is based on curricular, didactic and theoretical-pedagogical aspects. 8. The offered learning contents are reduced and rendered “comprehensible”. 9. The offered learning contents can be explored through self-activity (activity thesis). 10. Action-based presentations of problems are an explicit topic. |

2.3 On the Relationship between Didactics and Methodology in Adult Education

Didactics is the science of effective learning through teaching or instruction. Etymologically the concept comes from the Greek verb “*didaskhein*”, which means both “to teach, to give lessons” and also “learning, being taught”. That is why *didactic conceptions* describe the reciprocal effect of teaching and learning in the learning interaction process. “Adult didactics” (Tietgens 1992) refers to teaching and learning at the adult age, whereby the concept – which is not adult *education* didactics – already clearly states that adults to a large extent learn outside and independently from the institutionalised classroom setting (in daily life, at the workplace, in a self-guided manner and autodidactically). Following a more modern definition by Horst Siebert, “didactics” can be defined as “(...) the mediation between the *objective logic* of the contents and the *psychologic* of the learner/learners. Knowledge of the structures and interrelationships of the topics are part of the objective logic, and the consideration of the learning and motivational structures of the addressees are part of the psycho-logic (Siebert 1997, p. 2). The mediation between these two parts takes place through the “didactic action” (see Arnold 1996d; Siebert 1996) of the professionals responsible for the arranging and staging the teaching-learning processes.

The didactic models developed for school education presuppose a didactic concept of varying “amplitude” and also define for each case the relationship between didactics and methodology in a correspondingly specific manner. Whereas the didactic approaches of the educational theory derived from humanistic education has defined “didactics” in the narrow sense of the word as a theory of educational contents, and concentrates, therefore, on determining and legitimating the “what?” (e.g. Klafki), the conception that is closer to the didactics of educational theory, for example, presupposes a broad didactic concept of its structural model of the teaching-learning process. In this structural model, the contents are on “equal footing” with the other didactic “decision factors” (thus called because they can be “decided” upon), objectives, methods and means and, therefore – as in the case of educational theory didactics – a leading position (“primacy”) has not yet been assigned to them. And in this structural model, didactics have the function of analysing, describing and conceiving the interaction of these factors which are, in principle, “decidable”.

Whereas in the concept of educational theory didactics “methodology” fulfils a subordinate and auxiliary function as a “way” (from *methodos* in Greek = the way) towards the educational contents, in the didactic model of the learning theory, the methodology has a reciprocal (“interdependent”) relationship with the other didactic factors, and can also be conceived as a methodology-oriented

learning process that does not involve the acquisition of knowledge contents but rather the acquisition of methodological competencies (e.g. learning, exploration and problem-solving competencies). Precisely in connection with the call for the development of key qualifications, the concepts of stronger method-oriented adult didactics have been increasingly brought to the forefront.

The guiding questions developed by the didactics of educational theory (especially by Klafki), which are directed at the object, and with the aid of which contents can be examined and then determined whether it is “worthwhile” for them to play a part in the learning process of a given group of participants, are also relevant in the case of adult education. The corresponding reflections have found their expression in the *didactic principles* of *participant orientation*, *experience orientation*, *relation to the life world* and *applicability orientation*, which are the decisive for adult didactics. With the aid of these didactic principles, adult education has defined criteria, which also contribute to taking into account the interest of the educational theory in legitimating contents and clarifying issues such as: what relevance does the learning object already have at this stage of the learner’s life (experience orientation and relation to the life world); what relevance does it have for the learner’s future (applicability orientation); and what relevance is assigned to it for understanding further or more advanced content areas (exemplarity). The didactic principle of *participant orientation* plays a leading role here: it consolidates the assumption of adult didactics that adult education can only be achieved with measures where the participants:

- are, in effect, a corrective element of that which can be planned during the learning process because that provides participation opportunities,
- find that their subjective and socio-biographical conditions (identity referent) are taken into account in the learning process,
- are taken “seriously” with regard to competence and autonomy (elimination of the superfluous pedagogical gradient), and
- are activated in the learning situation (activity) (see Arnold 1986).

A special variant of the contents legitimisation is provided by curricular didactics, which has also gained importance in adult education (especially in continuing vocational training). It raises the didactic principle of applicability orientation (sometimes also called “practice orientation” or “demand orientation”) to the category of a guiding principle and “measures” the contents on the basis of their prospective contribution to the “mastery of future life situations” (Robinson). The problem of curricular didactics is, however, the prognosis, which is becoming dramatically aggravated, particularly in times of the rapid obsolescence rates in the area of job-related specialised knowledge. That is why there

have repeatedly been, and still are, voices that hold the view that the best form of demand orientation is the “non-orientation to any kind of demand”. At the same time, methodological-oriented learning in adult didactics is being revalued, and it is assumed thereby that adult learning –particularly with regard to the rapidly changing professional field– should no longer concentrate on the timely transmission of know-how, but rather on the transmission of methodological competencies (know-how-to-know). Adult learning oriented towards a job or profession thus acquires the function of training adults to adapt themselves to change.

For the relationship between didactics and methodology it is also essential that the decisions involving the contents of the teaching-learning processes are not made independently of the methodological considerations, because if something cannot be “staged” in the teaching-learning process, it cannot be transmitted or acquired. Conversely, there are certain subjects or topics that already strongly suggest certain methodological approaches. There are certain occupational skills, for example, that cannot be transmitted effectively if they are not practised and applied through self-action, and communication techniques cannot be transmitted and improved with frontal teaching. Didactic and methodological issues should therefore be considered and decided upon simultaneously, whereby it cannot be overlooked that, as the participants’ methodological competence increases, they take on the function of co-operating in the decision-making and design processes. The greater relevance of methodology with respect to didactics, up to the offers of strict methodologically-oriented adult education (learning techniques, problem-solving, co-operation and communication, etc.), is also becoming more and more important in regards to the aspiration of a broad competence development on the part of the adult learner. Adult learning –and this is how the aspiration is articulated– should “facilitate” self-guided learning by helping the subject set the conditions for the respective learning process (methodological competence), while at the same time providing the learning arrangements that guarantee self-guided learning. The conditions, opportunities and boundaries of the corresponding “facilitation didactics” of adult learning also assign to the course instructors, teachers, lecturers and teaching assistants new functions such as coaches, counsellors, arrangers or facilitators of a largely self-guided learning process.

Apart from the *microdidactic* issues which directly involve the teaching-learning situation, since the 1970s, the adult learning debate has also considered *macrodidactics* to be an autonomous field in the decision-making and design of adult didactics action. *Macrodidactics* refers to the field pertaining to curricular planning and the development of educational programmes. In order for an educational institution to “meet” the demands of a region or target groups, and at the same time be in a position to respond to the institution’s own aspirations

(ideal) and the corresponding economic expectations, decisions should be made that are also didactically relevant. The development of curricula and the planning of educational programmes require decision-making with respect to: “1. The institution’s objectives and thematic focal points, 2. the allocation, differentiation and stratification of the courses (e.g. basic, advanced and specialised courses, link between political and vocational training), 3. the learning requirements of the target group and recruitment of participants, 4. the selection and counselling of the teaching staff, 5. the teaching modalities and venues, 6. the selection from guidelines, certification courses and curricular recommendations available at regional level” (Siebert 1982, p. 101). These *macrodidactic decisions* are generally made by the full-time educational staff or course advisors, whose responsibility is often characterised by the concept of ‘managing’ and comprises the planning and organisational tasks related to the implementation of the educational programmes. The actual *microdidactic decisions* are made by the course instructors, advisors or teachers, who generally have relative “freedom of action”; it is only relatively seldom that the macro (“managing”) decision-makers also provide them with guidance in regards to adult didactics, continuing education and training or even in the implementation of a given adult education approach (e.g. that is “committed” to the expected ideal). Along with *macro-* and *microdidactics*, *mesodidactics* is also sometimes mentioned: this concept involves the planning, development and design of individual learning fields or specialised areas (e.g. foreign languages or educational leave programmes) and has a strong link to the features and principles of special didactics.

2.4 Changes in the Learning Culture of Further Education

The introduction and application of a new concept –such as “learning culture”– in the adult education discourse should be legitimated on a two-fold level: on one hand, based on the history of its origin, it can be stated that it is a “necessary” concept and not merely a *zeitgeist*² induced fashion, and on the other hand, it can be justified in regards to the way in which this concept is related to the established conceptions of adult education. This double conceptual justification has to be ultimately based on Immanuel Kant’s constructivist theory which, as is well-known, describes the reciprocal relationship between concept and intuition with the following words: “Thoughts without content are empty; intuitions without concepts, blind” (Kant). And thus, the theoretical-conceptual clarification that follows can be based on two questions: 1. What “intuition”, i.e. what “new” vision of the object can be assumed with the concept of “learning culture”? and 2. What adult education types of “blindness” could be overcome with a view

| 2 Translated as “spirit of the times”

toward the learning culture? In a third –and concluding– section, the implications on adult education and the consequences of the learning culture orientation will be outlined.

The “Intuition” of the Learning Culture

The notion of culture inherent to the concept of “learning culture” is not that of “fine arts”, but that of the culture of everyday life, as it also entered adult education through ethnomethodology, phenomenological sociology of knowledge and symbolic interactionism in the 1970s. However, it was not until the advent of the organisation and management theories of the 1980s, with their explanations on the “soft factors” of organisational and entrepreneurial success, that the aspect of everyday culture was placed at the core of social science analysis. In this context we should recall, e.g., the concept of corporate culture put forth by Holleis’ et al. (1987), who defined this as the “bottom part of the iceberg”, i.e. as the “really” substantial and weighty side of the whole event. This means that everyday culture describes the world of plausibilities, customs and certainties that result from routines. It also comprises the basic normative orientations, role models and behaviour patterns with which one has been brought up or “socialised”, which have, to a certain extent, become part of one’s own flesh and blood and enable an unquestionable orientation “in the network of one’s life world” (Waldenfels) as well as in the social environment.

If we associate this view of everyday culture with the field of education and learning, then traditional plausibilities, certainties and patterns of action can also be identified here which are not at all “questionable”, or only so after reflexive analysis. These implicit familiarities or “matters-of-course” constitute the learning culture, whereby, in my opinion, the following points are of fundamental importance:

- *The separation of teaching and learning*, which is associated with two far-reaching connotations: on one side, that who learns does not teach, and on the other, that teaching is an inevitable prerequisite of learning. These are the differentiations regarding the interaction of teaching and learning that account for the fact that in the education systems of modern society, we encounter more teaching than learning cultures.
- *Learning in lock step (or learning synchronicity)*, i.e. the assumption that as a rule, institutionalised adult learning, can or “must” take place in the form of a parallel co-ordination of the individual learning processes. That is the reason why the “classroom conversation” could be devel-

oped at all levels as a dialogue that is supposed to take place with the learner. However, as we are already aware from teaching-learning research and classroom research, with this dialogue, the learner can often only participate in a very “monosyllabic” manner, so that in fact this is more frontal classroom teaching than a dialogue.

- The *unilateral method ownership* in the teaching-learning process: this refers to the fact that, in general, it is the teachers, professors and course instructors who decide on the implementation of the learning method. However, this *unilateral* method ownership is becoming a growing problem, that “requires” its citizens to make use of their self-guided and lifelong learning capacities, i.e. that they demonstrate self-learning competencies.
- *Fixation on learning objectives or contents*: all the levels of our education system are, to a greater or lesser degree, still marked by the idea that there is a stock of contents to be “attained” (e.g. cultural contents) that are “worthwhile” of being transmitted to future generations. Thus considered, our learning cultures are cultures of transmission. The “technical and specialised training crisis” (see Arnold 1996b) is only gradually being recognised, and it is understood that a society with an exasperating rate of obsolescence of knowledge should base education on a different and novel approach.

With the concept of the “learning culture”, the comprehensive relationship with the distinctive features of learning and its social organisation are first taken into consideration. This enables us to take distance. Insofar as it is “clear” to us that our way of reflecting on teaching and learning is the result and expression of our own imprinted learning biographies, and provided it is clear to us that our intuition is contaminated with the idea of a separation of teaching and learning, of learning in lock step, of a unilateral method ownership, as well as of a fixation on the contents of the teaching-learning processes, we then relativise these concepts and thus open up to the possibility of “imagining” or “intuiting” alternative learning cultures. This becomes apparent initially in the reformist pedagogical counterconcepts as an alternative to the traditional models. In becoming “aware” of the structures of the learning culture which we are familiar with, we are in a position to transcend these, and the concept of the learning culture in fact enables new intuitions or new perspectives on the object.

Overcoming Adult Education “Blindness”

Not everything that is subject to consideration is spectacularly new; much was originated directly in the adult education tradition. In this context we should particularly recall the lay educational approaches to adult learning as well as the “working communities” of the 1920s as a form of dialogical self-help learning, which was borne by a basic scepticism with respect to all forms of learning tutored by experts. At the same time, there already was a strong belief at that time that adult learning basically had something to do with the transformation of the “personal viewpoint” (Mann), that it always involves learning from experience in the sense of a “methodologically guided exchange of experiences” (Gieseke/Siebert 1996, p. 208) and therefore always requires a fundamental self-action on the part of the subject.

However, it was the indications of the constructivist learning theory –that “teaching” does not automatically lead to learning, that in principle it is only through self-guidance that learning can be achieved as a lasting competence development or as the “self-regulation of a cognitive system” (Siebert 1999, p. 21), and that teaching can also “hinder” learning – which first led to the radical challenge of the largely *learning-oriented thinking in didactics*. A *new learning culture* is also sought after, particularly in adult education, which –as is expressed by the name itself– is a *learning* and not a *teaching* culture (see Arnold/Schüßler 1998). The questionable nature of the exclusive *transmission of ideas* (transmission of knowledge, transmission of qualifications, etc.) is increasingly being recognised in this search and there is a real relentless disclosure of the technocratic illusions on which these ideas of *didactic generation* are unmistakably based, and from which the fundamental idea is surely that education, qualification or competence are *feasible and controllable*. In contrast, work is being carried out towards an *integration of intentional and experience-oriented learning*, following the motto: If human beings can learn solely through self-acquisition and knowledge cannot be “given” to them, because they have to recreate it in their own cognition –and teaching-learning constructivist research leaves no room for doubt in this regard!– then our further education and training approaches should also enable this. The design of the learning cultures proves to be the real issue for the future of our education systems, as was already stated in 1995 by the “Rau Commission” of North Rhine-Westphalia in their memorandum “*Zukunft der Bildung – Schule der Zukunft*”³. The following is stated:

“Schools should concentrate on learning, although not in the sense of a learning school which has been historically overcome. What schools rather need is the

| 3 Translator’s note: “The Future of Education. Schools of the Future”.

development and design of a learning culture that can become the focus of the educational and social tasks that are associated with it.

The traditional concept of learning is based on a fixed and closed knowledge canon and on an organised teaching plan for transmitting it. It is geared towards learning results in the sense of the verifiable reproduction of knowledge.

The concept of learning and learning culture that is supported by the Commission, on the other hand, places its stress on other core issues. It aims at facilitating the identity search and social experience in the learning contexts. This requires differently designed learning situations. There has to be an interrelation between disciplinary and extradisciplinary learning, between individual and social experiences, between practical orientation and the inclusion of the social environment" (Bildungskommission, 1995, p. XIV et seq.).

These considerations are also of major importance for designing adult learning. They contribute to overcoming some of the didactic "blindness", which includes among others, the presupposition of the certainty of the success or effect of didactic action. Didactic action does not "guarantee any effects". Equal inputs with different learning subjects and in different contexts can result in very different effects, although this does not mean that there are not specific empirical values for didactic action in regards to promoting learning – but these are precisely only empirical values, and not inherent laws (see Arnold/Krämer-Stürzl/Siebert 1999). That is also why, when designing adult learning, only prerequisites for self-active learning in a broader sense can be provided. At the same time, greater attention should be paid to implicit learning, because it often occurs that the 'how' of the learning process entails a longer lasting competence development or impediment than that of explicitly planned learning. In view of the rate at which knowledge becomes outdated, which of course does not refer to knowledge in its full extent, but rather its respective current versions, it is often more relevant in terms of sustainability to see *how* the learning process was didacticised, i.e. what methodological and social activities were demanded on the part of the learner, than *what* was relevant in terms of its contents. In other words, from the perspective of comprehensive competence development (see Arnold/Müller 1999)

"(...) the method, or rather the methodological setting of the learning process, gains in importance, i.e. the way in which the class is organised with respect to the teachers, learners and contents. This organisational component has an impact dimension that is largely independent from the results of the learning contents. (...) From the standpoint of the learning culture, implicit learning is

particularly important. This refers to the acquisition of attitudes, insights, customs and competencies that are transmitted in an implicit, incidental and subliminal manner. It is this implicit learning which appears to become centrally important for acquiring or not acquiring key qualifications, attitudes towards learning, problem-solving skills and autonomy. With this "concealed curriculum" pupils, students or apprentices learn, precisely within the scope of the guard rails of an overloaded curriculum, not only the declared contents, but also, in many cases, that learning is guided learning, and often has hardly anything to do with their questions or learning objects. On the other hand, in the reformist pedagogical approach of an alternative and open learning, in which learners can develop projects independently or acquire contents on their own, experiences are also gathered that demonstrate that in these alternative learning cultures, the individual's own initiative and confidence in his or her own skills and competencies can also be developed" (Arnold/Schüßler 1998, p. 8 et seq.).

The currently emerging didactic discussion on the teaching-learning arrangements, virtual learning environments and multimedia based learning infrastructures are the expression of this *turn towards facilitation didactics* in further education and training (see Arnold 1996d). However, this turn does not imply that teaching becomes a complete taboo; its aim is rather to make more "intelligent" utilisation of the teaching resources. The role of teaching should no longer become exhausted in a –frequently also merely verbal– presentation of contents; its function is rather characterised by the presentation of cues, by providing "preserved knowledge" (reference books, textbooks, files, databases, etc.). The facilitating "teachers", "professors" and "trainers" no longer administer contents, they "administer" or open up the access to these, they manage task and problem-processing activities, they systematically and continuously encourage the learners' methodological and self-learning competencies and are at their disposal as a coach for the individual acquisition and cognitive incorporation of that which is new. Only when it is possible to return the *learning responsibility* to the learning subject in this way, will it become possible to develop learning organisations; these are lifelong learning organisations where individuals independently plan their work and learning processes and –using helpful support systems– design them with considerable autonomy.

