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Developing Key Competences in Higher Education

Key competences are part of today's curricula in higher education. They are explicit learning objectives of specific modules, but also implicitly contained in studying: In order to actively participate in courses as well as to succeed in doing their autonomous work, students need strategies of self directed learning – from focusing attention, communication and teamwork to time management. Key competences concern self-regulation and include knowledge, self reflection and action.

In addition to subject-specific competences and besides generic cognitive competences, they are an important pre-condition for effective studies. Furthermore they are needed to deal with challenges of everyday life as well as of professional life. Therefore they have to be seen as a crucial component of today's general education.

The present article provides an assessment of the concept of key competences in view of changing social conditions and qualification requirement in the working world. It sketches out the various settings for acquiring key competences in higher education and illustrates an integrated concept of education by drawing from the Heidelberg Model of Educational Quality in Studies (HMEQS). Four learning objectives for the enhancement of key competences in higher education are described. To reach these objectives, a combination of two organizational settings is recommended. First, the integrative setting activates key competences more indirectly within regular academic courses and motivates students to acquire them. Second, the additive setting, which fosters key competences through specialized courses, provides a framework suitable for self-reflection and for a systematic acquisition of skills and strategies for acting and thus may help to even out differences between individuals. Additive courses should be part of the curriculum and

build on learning environments and tasks that correspond to the respective subject area.

1. Key Competences as the Objective of a Contemporary Education

The term key competences can be traced back to Mertens.¹ As part of the research on flexibility he described 'key qualifications' as abilities not tied to a specific activity. By the 1970s, structural changes in the working world of post-war Germany – especially continually changing demands for specialization and flexibility in career changes – had led to an insufficient fit between educational degrees and professional qualification required by the working domain. This discrepancy was to be overcome by key competences. The training of overarching key competences was conceived to close this gap.

The debate over education policy in the 1980s and '90s broached the issue of efficiency of teaching and learning in the face of increasing duration of study cycles and high dropout and changeover rates.² Consequently, the term 'key competences' appears in the guidelines of the Bologna Process, the European frame of reference for the reform of higher education. It is connected with employability as an important goal of studies and designates a strategy to monitor the outcomes of teaching and learning in a process- and goal-oriented setting – by means of the competences that are to be acquired.

Höhne describes this as a strategy for rationalisation under political and economic criteria.³ In order to create comparable and predictable qualifications for a European job market, curricula and teaching-learning processes will be aimed at competence aims. Additionally, trans-disciplinary key competences are to be acquired. In response to this, critics feared that such a standardisation might jeopardize education as a free development of the person in the Humboldtian sense. Conversely and quite clearly, a re-orientation of the curricula towards outcome and competence also opens up considerable potential for the emancipation of students as autonomous subjects in the teaching-learning process. For this emancipation three points are important, which will be discussed in greater detail in the following: the distinction between competence

and qualification, the shift of perspective from teaching to learning, and the openness of learning processes within prescribed structures.

While *qualification for* refers to an adaptation to given demands the term *competence of* aims at the identity of the person and their deliberate action while dealing with complex tasks and challenges. Erpenbeck & Rosenstiel emphasize the distinction between the person-related term of competences in the sense of self-regulated action and the demand-related term of qualification as "Wissens- und Fertigkeitsdispositionen [...] eines gleichsam mechanisch abgeforderten Prüfungshandelns".⁴

If curricula are designed with regard to what the students are able to do at the end, the learning activities gain pivotal importance. This *shift of perspective "from teaching to learning"* focuses especially on three aspects: first of all on 'who', i.e. the students as responsible subjects of their educational process, second on 'how', i.e. the quality of teaching and learning, and thirdly on the mutual agreement about aims and contributions in a shared responsibility, or the 'learning contract'.⁵ Hence, in teaching it is not sufficient to present content which is somehow taken in by the students and later reproduced for examinations upon the teacher's request. Instead, teaching and learning have to go beyond declarative knowledge and lead to procedural competences of problem solving. This necessitates the commitment and accountability for results by both teachers and students in a sustainable learning process. This means that both sides face each other in new roles: the teachers as demanding and encouraging 'facilitators', the students as active partners who purposefully follow their educational objectives. Studying therefore means to apply individually appropriate strategies of self-regulation and information processing.

Standardisations are introduced to studies not only with the formulation of competence aims. In fact, in institutionalised education contexts there have always been *standardising structures* such as curricula and examination rules which set expectations about a defined outcome. In view of the changed demands and conditions of the Bologna Process, such criteria may become more precise and therefore more transparent. It is important to note here that this shift from teaching to learning provides for a frame of orientation and development, that it brings to the fore the freedom of the individual learner that is inherent in the studying process. In fact, competence-based objectives hold a larger moment of freedom

compared to knowledge-based goals: As an ability of handling knowledge, competences can be seen as an open integral of various possible learning contents.

2. Key Competences as Components of a Holistic Understanding of Education

The customary use of the term of (key) competences in the political debate is closely tied to the concepts of employability and qualification. This may lead to an underestimation of the value of key competences for a holistic education. Their meaning, however, reaches beyond vocational training and qualification to finding one's way and participating in social processes. Therefore, in the Heidelberg Model of Educational Quality in Studies, key competences are considered to be a main objective of general education.⁶ As an important component of a current educational quality assessment at universities they facilitate handling the challenges of three different spheres, the learning world, the everyday world and the working world:

The Sustainability of Knowledge – The Learning World

A central constituent of sustainable education is the self-regulated use of learning strategies. In order to fulfil this demand, students must have at their disposal the key competence of self-controlled learning. Teaching then takes on the role of an important "situational condition" in which the teachers, through their appearance and their didactic approach, activate self-regulated learning in the students.⁷

The Education Responsible Citizens – The Everyday World

Key competences represent a reaction to changing social structures and working conditions that have been described with the overarching term 'individualisation'.⁸ The alteration and dissolution of traditional structures is accelerated in all areas of everyday life, and new freedoms and new uncertainties emerge. In order to compensate for this loss of external stability, the individuals must develop a reliable internal stability by integrating the experienced discontinuity through their identity and capacity to act. In this context "ein aktives Handlungsmodell des Alltags"⁹ becomes

indispensable. It rests on the abilities to handle such open situations, on key competences of access to and participation in social processes.

The Preparation for a Subsequent Occupation –The Working world
Key competences are an important part of specialists' and executives' job profile.¹⁰ This also applies to the occupational field of 'university', in which managerial responsibilities are gaining ground.

The continual change of functions and demands nowadays feature prominently in employment, when conventionally hierarchical management structures are replaced by more complex job profiles, the delegation of responsibilities, internationalisation, and interdisciplinary project work. Key competences, such as an understanding of business contexts, analytical thinking, entrepreneurial initiative, work-life balance, social competence and the willingness for lifelong learning, are seen as essential when handling such changes.¹¹

3. An Integrated Educational Concept

The HMEQS emphasizes the importance of an education of the personality through key competences alongside academic training. It builds on an integrated educational concept, which refers back to the central educational principles of German university founder Alexander von Humboldt: first, education is conditioned by the development of one's personal potential in solitude and freedom; second, it is framed by the interaction between the emergent person and the revealed world, and third, it is effected by scientific inquiry through language.¹²

Within the Heidelberg Model, Humboldt's principles are updated in the light of the changed social condition, so that four fundamental aspects of an integrated educational concept can be derived – openness, functionality, multidimensionality, and an orientation towards competences.

Education is an open-ended involvement of personality which is unpredictable, neither in general nor in its particulars. It requires a specific freedom that facilitates emergent development processes and that can be guaranteed by structures. As for learning objectives,

they should not – and cannot – establish an external control over the learner; they are just proposals that have to be agreed upon. Thus they provide an orientating framework for autonomous decisions of the students (openness).

At the same time, education refers to the relationship between the person and the world. It enables the fulfilment of complex demands without being limited to mere knowledge and canonised skills. It is motivated and manifests itself in the challenges that a society presents to its members (functionality).

Education concerns and touches different levels of a person – their thoughts, actions, feelings and values. Apart from its narrow sense in knowledge and skill, it also encompasses the development of personality through key competences (multidimensionality).

The central component and focal point of such an integrated educational concept is the term competence. By referring to the identity of the person and their capability to act, it is embedded in their personality. It is applied as *competence-in-something*, including both cognitive and non-cognitive dimensions (orientation towards competences).

4. Defining Key Competences – Elements of a Map

4.1. Types of Competences in University Studies

The term *competence* has multiple layers. Often a distinction is made between its cognitive and its action-based meaning: where the former designates subject-related and general cognitive abilities up to comprehension and problem-solving, the latter describes an action competence which contains not only cognitive but also motivational, emotional, social and value-related components. Correspondingly, *key competences* are defined as generative, context-independent abilities and are closely related to action competences. They encompass a wide band of human attitudes and activities in the interaction of the person and the world: "Key competences are always complex systems of knowledge, beliefs, and action tendencies."¹³

In the context of studies one can differentiate between three categories of competences:

Subject-Specific Competences

They are based on specialised declarative and procedural knowledge – so on a body of knowledge and on procedures for problem solving and for inferring new questions. The sustainability of this knowledge is related to a "deep-level processing" with more demanding operations, such as understanding, analysing, transferring to other contexts and synthesising new knowledge.¹⁴

Trans-Disciplinary (Generic) Cognitive Competences

Cognitive competences that are useful beyond the disciplines can be seen as a transient area between subject-specific competences and key competences. A list of these might include the critical reflection of knowledge and academic research, of the various disciplines and their scientific paradigms, and the fostering of an inter- and trans-disciplinary view on complex questions. With regard to the generic cognitive competences, the "Grundbildungen" or "Literacies" are of importance, i. e. a basic general knowledge in the field of study, a specific approach from the perspective of a discipline, for instance a humanities-based and philosophical, economic, or sociological understanding of facts and systems.¹⁵ This serves as an orientational knowledge and facilitates access to complex problems. Welbers describes a similar concept for German studies with the "fachlich fundierte Schlüsselkompetenzen", such as writing, orality and literary-cultural competence.¹⁶ In addition to this, trans-disciplinary skills such as foreign languages, handling of IT or media can be counted as generic cognitive competences.

Key Competences in the Sense of Self-regulation and Action Competences

Based on a model from pedagogical anthropology of Heinrich Roth, the most widely disseminated classification of key competences distinguishes between cognitive, methodical, self-, and social competences.¹⁷ In this vein, cognitive and methodological competences correspond mostly to the subject-specific competences, self- and social competences to the key competences. A similar distinction can be found in the design of a German qualifications framework (Arbeitskreis Deutscher Qualifikationsrahmen 2010), which separates subject specific competence (with the subcategories knowledge and skills) from

personal competence (with the subcategories social competence and autonomy/self-competence).

TA similar distinction forms the basis of the European Commission concept of the project 'Tuning Educational Structures in Europe' of the European Commission, which substantiates the political guidelines of the Bologna-Process for the universities and their faculties.¹⁸ It marks subject-related and generic competences, the latter of which are described in a list of thirty 'instrumental', 'interpersonal' and 'systemic' competences.

In addition to these formal classifications, content-related taxonomies of key competences have been developed, such as PISA (Deutsches PISA-Konsortium 2001) with its differentiation of cognitive basic competences (reading literacy, mathematics and science literacy), self-regulated learning, and cooperation / communication. The model of the OECD-Project DeSeCo describes three categories of key competences that are essential to the personal and social development of people in modern societies: interacting in social heterogenic groups, independent action and interactive use of instruments and resources.¹⁹

4.2 The Heidelberg Model of Key Competences

In close affiliation to the abovementioned concepts, the Heidelberg Model presents a consistently personality-related concept of key competences. It is integrated into a comprehensive understanding of education and focuses on personal competence, i.e. the self-ascertainment and action regulation of the person in their social context. It encompasses three levels (see also Fig. 1):

On a macro-level, as already mentioned, key competences are described as the objective of a general education of the personality. They can be seen as central factors of identity and of the ability to act in a rapidly changing world that is open to decision-making. On a meso-level, four key competences are named as basic abilities for the participation in and contribution to social processes. As elemental conditions for self-determination and action they each refer to each other: the positioning 'Active Orientation' is the initial point of a 'Purposeful Action'. Both of these in turn are connected to 'Lifelong Learning' and 'Social Competence'.²⁰ Finally, on a micro-level these key competences can be substantiated for specific

contexts, e.g. studies, everyday life, working life. Here concrete individual capabilities such as teamwork, time management, scientific writing, presenting or project work can be derived and described as educational objectives.

Active Orientation ('Positioning')

The central moment of this key competence is self-positioning which allows for making adequate decisions pertaining to the challenges of a present or upcoming situation. This should be understood as a process with various steps in which the motivation to act arises. First, a reflected perception of the prerequisites takes place: on the one hand an internal assessment of oneself, one's possibilities and limits, values, aims and needs, and on the other hand of the external situation with its contextual conditions, requirements, chances and risks. A comparison between the internal and the external conditions leads to decide for a specific course of action. This can be directed not only towards the external situation – through a formative activity – but also towards the internal conditions – through learning. Hence, 'Active Orientation' and 'Purposeful Action' are merged.

Purposeful Action ('Direction')

Purposeful Action implements the decision taken – with the setting of a goal, the determining and following of suitable paths as well as the evaluating of experiences whilst approaching the goal. As the conditions of the external situation and the personal affinities change during approaching the aim, one must continuously adjust both. In this respect, Active Orientation and Purposeful Action interlock as components of self-regulated action.²¹ Purposeful Action can refer to different levels: to a single action, to the integration of actions to one process, or to long term life planning.

Lifelong Learning ('Development')

Lifelong initiative learning requires a dynamic life concept – the fundamental readiness and ability to change and to develop experiences and challenges. This key competence is given enormous significance against the background of a constantly changing life world. On the operative level it is a matter of constantly acquiring new knowledge and skills. On a regulative level, it entails the cultivation and further development of the

learning ability itself, and on an existential-biographic level it addresses a view of life as ongoing process of personal development. For the operative and regulative levels of this key competence, we distinguish three components: cognitive strategies for taking in and processing information, meta-cognitive strategies of the learning process through planning, monitoring and evaluating, and strategies of resource management and motivation.²²

Social Competence ('Involvement')

The ability to communicate and to coordinate actions with others is a prerequisite for the co-existence of humans.²³ Hence, viewpoints, objectives and paths of collaboration have to be matched in a pluralistic world, in which the generally accepted crumbles into a multitude of individual and situational views, projects and life plans. Central aspects of this Social Competence are the ability to relate one's own perspective to someone else's and the ability to tolerate ambiguity and difference. This includes complementary abilities such as self-presentation and assertion, empathic understanding, and changing perspectives, accompanied by the ability to deal with conflict and the willingness to participate in social interaction. Apart from this, various communicative abilities are important, such as the capability of dialogue and discourse, of conversation steering, of negotiation and of intercultural communication. In fact, social orientation and trust result not least from value-related personal attitudes like commitment, a sense of responsibility, congruence and transparency, respect, loyalty or the embodying of authority.

MACRO-LEVEL		
Handling change and situations open to decision-making: Identity and the ability to act in the modern world		
MESO-LEVEL Four fundamental factors of action and self-management	MICRO-LEVEL Specific abilities for the respective domain derived from the factors	
	<i>Importance in studies</i>	<i>Importance in working life</i>
Active Orientation Positioning oneself in the face of challenges	Motivation, interests, concentration	Decision-making ability, initiative, entrepreneurial thinking
Purposeful Action	Target-oriented and	Delegated responsibility for

Heading for project- und life objectives flexibly	autonomous studies, performance, time-management, scientific writing	objectives, work in project structures
Lifelong Learning Constantly extending knowledge and abilities	Working autonomously, self-regulated learning	Willingness to develop and change, taking over of new tasks
Social Competence Acting responsibly, communicating, cooperating	Participation, discourse, presentation, teamwork	Acting ethically, agreements, teamwork, intercultural communication

Figure 1: Three-level-model of key competences

4.3. Objectives in the Development of Key Competences

Key competences are anchored in personal values and attitudes; they encompass experience, knowledge and action. Due to the closeness to personality traits we may ask to what extent and by what means they can be changed within the framework of educational processes.²⁴ So the objectives for developing key competences should be realistic. At the same time the personal dimension must not be revealed by a "surface-level processing", an acquisition of mere behavioural techniques.²⁵ Even though a short-term change of personality due to courses of key competences is not to be expected, personal attitudes can be reflected and a personality development in the sense of 'establishing a long-term habit' may be stimulated.²⁶ The following four learning objectives correspond to this:

1. *Generating motivation for the acquiring of key competences:* the importance of key competences for personal development becomes clear; the own educational objectives are extended accordingly.
2. *Reflecting oneself:* a valid perception of personal strengths and needs for development is achieved.
3. *Initiating and monitoring the personal development process:* realistic objectives for one's own development are determined; these are continuously reviewed.
4. *Extending the spectrum of action:* new options are explored and rehearsed.

5. Training and Acquisition of Key Competences

5.1 Subject-Related Competences

In the sense of the ability to solve problems, subject-related competence is based on an anchored declarative and procedural knowledge which can be transferred flexibly onto new connections and questions. This requires to go beyond "surface-level processing" to "deep-level processing".²⁷ For this, various learning strategies are employed: *meta-cognitive strategies* for planning, monitoring and regulation of learning activities, *cognitive strategies* for organising (forming structures), elaborating (creating connections) and repeating (imprinting), as well as the *management of resources* such as exertion, attention and time management, cooperative learning, shaping the learning environment, using literature.²⁸ How can deep-level processing be encouraged in teaching? It is supported by teaching that motivates active engagement and a flexible handling of the subject matter, encourages the application of learning strategies and also allows a meaningful reference to the learning topics, for instance through multiple perspectives and links, positive emotions, social interaction and feedback.

This corresponds to the model of problem-oriented teaching and learning which, following Reinmann-Rothmeier & Mandl, takes five didactic principles as its basis: processing realistic problems in authentic situations, supporting learning through instructions, defining joint responsibility for the achieving of learning objectives, enabling multiple perspectives on learning topics, stimulating cooperative learning and problem-solving.²⁹ Strikingly, this concept connects two different learning strategies. The cognitivist concept of conveying knowledge describes rather closed teaching-learning forms. Here selected learning materials are presented and accepted according to the principle of instruction in the sense of a 'transport of knowledge'.³⁰ Furthermore, the constructivist concept of creating knowledge pleads for dealing actively with authentic problems in more open teaching-learning forms.

Research-based learning can also be seen as a form of problem-oriented learning, which can be encouraged for example through the

assumption of sub-tasks for the current research, through specially assigned mini-projects with complete research cycles, through journal clubs, in which topical publications are discussed, or through research courses for students (Research Summer Schools).

In order to enable and regulate sustainable teaching-learning processes which lead to the acquiring of cognitive competences, teachers need didactic expertise in addition to the subject-specific knowledge. Four basic qualifications have been formulated for this within the Heidelberg Model.³¹

1. *Knowing teaching-learning concepts*: surface-level and deep-level processing, problem-oriented learning, teaching as a favourable condition for self-regulated learning;
2. *Embodying the leadership role as a 'facilitator'*: inducing teaching-learning activities, making knowledge available in a subsidiary way, moderating the structure and process of the work group, delegating responsibility by learning agreements;
3. *Providing structures which promote learning*: creating favourable context conditions, developing curricula, deriving examinations and teaching-learning activities from learning objectives ('alignment');³²
4. *Communicating systematically*: moderating work groups, instructing tasks, presenting contents, conducting conversations appropriately.

5.2 Transdisciplinary Cognitive Competences

Critical reflection, logical and analytical thinking, basic general and trans-disciplinary knowledge, are all generic cognitive abilities which can be acquired through education in one's own department and also through a supplementary education in other disciplines. This can occur both within regular courses and in special formats – such as in a 'Studium Generale'. Courses that are team-taught by academics from different subject areas are suitable for an interdisciplinary processing of topics. After all, through a pool of courses from different disciplines, basic knowledge from one field of study can be made available to students of other departments.

5.3 Self-regulation and Action Competences

In principle, three complementary organisation forms can be differentiated for the acquiring of key competences.³³ They correspond to three basic formats of personnel development – "on the job", "near the job" and "off the job".³⁴

Key competences and subject-specific competences, which also mesh together in the actual learning process, can be directly synchronized through the *integrative* promotion within subject-related courses. This organisational form offers the most direct connection between both types of competences, but only a limited possibility to handle key competences explicitly and systematically.

The *additive-decentralised* variant conveys key competences in separate courses, but as a part of the curriculum, e.g. in workshops for presentations, in courses for learning strategies or in writing workshops in the field of study itself. In doing so, they refer back to subject-specific peculiarities with examples and tasks. This form offers both a certain proximity to the discipline and the possibility for students to systematically focus on key competences.

In the *additive-centralised* organisational form, key competence courses for mixed student groups from different departments are offered by a central authority at the university (centre for key competences, career-service, etc). While a connection to subject-specific aspects is barely given, a specific framework for the systematic processing is provided.

Integrated Acquisition

In subject-specific courses with a problem-oriented didactic methodology, certain key competences are required and can be developed on a second level of learning objectives. For this purpose learning strategies are exceptionally important. *Cognitive strategies* of information processing can be addressed through the form of the imparted knowledge and the presented tasks. *Meta-cognitive strategies* can be encouraged by learning agreements, by feedback and by rehearsing peer- and self-assessment. To activate *resource-related strategies* (such as work organisation, information procurement, time management and teamwork) or other key competences (discourse, presentation, scientific writing), specific handouts, cooperative work and tasks with relevant feedback are useful. Courses in the form of simulated or real projects combine

the processing of a subject-specific problem with the organisational dimension of a project structure. They offer a high incentive for teamwork, presentation, time management or project management.³⁵ However, for fostering key competences in subject-specific courses learning objectives must be formulated and agreed upon on levels both theme- and person-related.

With an integrative facilitation the meaning and value of key competences for studies can be made very clear to the students. This is why this organisational form plays an important role in motivating the acquisition of key competences. However, because key competences can only be treated in a flanking manner, self-reflection and systematic experimenting cannot find the appropriate space. That is why existing inter-individual differences in the area of key competences cannot be adequately processed and balanced.³⁶ There is in fact a certain risk that these differences are not compensated but instead increased. A further disadvantage of this setting is that the academic teacher has to put more effort in.

Additive Acquisition

In an additive format key competences are the central theme for the courses. A temporal and methodical frame is available, which matches their systematic acquisition.

The decentralised organisation of key competence courses within the respective curricula allows for an orientation towards the specific demands and tasks of the field of study. This means that writing tasks or presentations, the preparation and revision of lectures, the handling of tests or time management can be adjusted to the particularities of the subject. Embedding the key competence courses in a disciplinary context makes for an authentic learning situation, which is so essential for sustainable learning processes. The students obtain a direct benefit from this supporting effect for their own studies. The responsibility for the entire educational process – comprising the subject-specific and the key competences – remains with the academic discipline. By employing external teachers or trained tutors in close coordination with the department the effort for the faculty can be reduced.

The central format is the most general and least elaborate organisational form of teaching key competences. Normally a course programme for students from all departments is provided

and run by specially commissioned trainers. The focus lies on the handled key competences beyond different subject cultures. This form opens up the possibility for a dialogue between the participants across all disciplines. The advantage of this form is that the burden on the faculties is eased and the required effort is limited due to central organisation of a large variety of possible courses. Also by removing the field of study, the participants will be less biased when discussing personal topics. The disadvantage here is the distance from the department. As a result, the teaching is split in a subject-related part under the responsibility of the faculties and an additional trans-disciplinary part in a central place.

Complementary Relation of the Formats

Proximity to the discipline and systematic acquisition are two aspects which should be brought into a sensible balance when teaching key competences. On the one hand, the sustainability of what has been learned depends on practical application and on subject-specific competences. Synergies between both levels are possible due to the educational process of subject-related and key competences being a unit. On the other hand, key competences are also seen as prerequisites for learning which must be acquired systematically and not just incidentally. For this, separate courses are suitable with specific teaching-learning forms which encourage self-reflection and open up new options to act.

Consequently, a combination of explicit (additive) and implicit (integrated) support of key competences is recommended. Based on empirical evidence and referring to direct and indirect support of learning strategies, Friedrich & Mandl explain:³⁷

Die spezifischen Vor- und Nachteile beider Ansätze legen nahe, beide zu kombinieren: Die durch Lernstrategietraining (direkte Förderung) erworbene Kompetenz verkümmert, wenn sie nicht auf Lernumgebungen trifft, in denen sie herausgefordert wird [...] (indirekte Förderung). Umgekehrt gilt aber auch, dass Lernumgebungen, die auf die Aktivierung von Lernstrategien angelegt sind, dies nicht bei allen Lernenden tun, sofern diesen die individuellen Voraussetzungen hierfür fehlen. In diesem Fall liegt es nahe, die individuelle lernstrategische Kompetenz durch remediale Trainingsmaßnahmen aufzubauen.

6. A Combined Learning Environment for the Acquisition of Key Competences

Teaching-learning processes for key competences should try to achieve the four described learning objectives – motivation, self-reflection, initiating and monitoring the personal development, and opening up of new options to act. For this a combination of integrative and additive support should lead the students to a connection with subject-specific competences and furthermore to a personal processing and anchoring of attitudes and action dispositions. In order to be effective, this combined learning environment must aim at two further domains beyond knowledge:

1. *Self-exploring and self-reflecting*: for this the perception and evaluation of personal experience should be enabled and opened up for communication and feedback.
2. *Acting in a trusting atmosphere*: this provides the possibility to reveal oneself in front of the other thereby experimenting with various options of action.

Suitable for the connection of key competences with subject-related competences are lectures and seminars which incorporate the practical dimension of action regulation through extended learning environments. However, the format of a workshop or training normally as a block seminar, **but not that of an academic seminar**, is suited for the systematic development of key competences. Here the trainer appears in a special role. As moderator she steers the work group and creates an atmosphere of trust for the testing of new options. She enables an open exchange and encourages reflection of individual possibilities and limits. As trainer and coach she gives specific suggestions for further development of personal competences. Together with the students, she finds out what their needs for development, objectives for action and individual appropriate learning steps are, and he leads the feedback thereof.

7. Course Programs for the Advancement of Key Competences

The present section illustrates a coordinated offer for teaching key competences and for strengthening the teaching with reference to the service-centre 'department of key competences' at the University of Heidelberg. They are embedded in a service-concept for the quality assurance of higher education which rests on three pillars: further development of the curricula structures, personnel development for academic staff, as well as key competences for students in all three cycles (bachelor, master, doctorate).

The service for developing the curricula supports the departments in the construction of competence-oriented curricula with workshops and advice. The academic staff development center supports the teachers in their endeavour to promote subject-related and general cognitive competences as well as key competences by the integrative format. This is achieved with a modular program for teaching training which culminates in the 'Baden-Württemberg-Zertifikat für Hochschuldidaktik'.³⁸ It includes courses, supervision of difficult teaching-learning-situations, sitting in on classes with feedback, coaching of teaching projects, and writing reflections with an entire workload of 200 training hours. The offer for teaching staff is supplemented by individual consultancy and coaching.

The emphasis of the service is on the additive-decentralised approach for fostering key competences. The university's departments receive modular programme schedules and didactic materials which are jointly adapted to the specific discipline. The didactic training of the student tutors who lead the courses as well as the evaluation of the outcome are also a part of the service. A basic module 'strategies for sustainable studies' is offered with multiple thematic blocks: personal profile of competence, active start of studies, time management and work-life balance, scientific writing, strategies for learning and for preparing exams, discourse and active participation in courses as well as presentation and teamwork. Further advanced modules include 'Teaching and mentoring', a structured didactic training for student tutors and mentors, 'reflected practical experience', purposeful preparation and evaluation of internships, as well as 'project work competence' for the participation in project-related courses. Aside from this, key competence courses for participants of various departments are offered in a centralised format on the mentioned topics.

For PhD students there is also a modular course programme in cooperation with the Graduate Academy of the university. The basic course 'strategies for a successful doctorate' deals with project management, time management, work-life balance and social competences. The area 'work techniques' offers courses on scientific writing and on the presentation of research results, while career planning, moderation and didactics, teamwork and conflict management are offered as 'additional personal competences'.

8. Outlook

The orientation of teaching and learning towards competence-based objectives presents a challenge of "educating the university" itself to the academic culture.³⁹ Subject-related and key competences – such as problem-solving, transfer of knowledge or self-management and action abilities – contain a dynamic moment. They mark the point where academic study approaches practice. In order to rise to this challenge, universities need to extend their traditional understanding of an education solely through science. Apart from academic excellence, non-scientific factors, like curricular structures and learning environments as well as the didactic action of teachers, should be recognised as important components of the quality of education. This would also mean extending the qualification profile of the teachers and providing a further education beyond the scientific career. It also requires the willingness to open one's classroom to trainers and consultants from the area of didactics, organisation and personnel development who are not necessarily part of the genuine academic personnel.

Universities do not always find it easy to accept these action-related aspects. When dealing with these topics and tasks, a trend emerges to stay as close as possible to what is subject-related and scientific. This frequently leads to the interdisciplinary cognitive competences being favoured above the self-regulation and action competences. Furthermore one can observe a certain scepticism towards additive formats which – due to their main focus on the acting person – are furthest from the academic tradition. Also academics sometimes show a certain reserve towards curriculum developers and academic staff developers when they are not members of the faculty, but external experts. Here universities

differentiate substantially from other organisations, in which the cooperation with external experts in personnel and organisation development is more common.

Transfer, implementation and application of knowledge, action competence, self-management, self-perception beyond cognitive concepts, awareness of personal values and experience – this does not truly correspond to the scientific attitude of distance and objectivity. It will be interesting to observe whether and how an opening and evolution of university culture takes place with the discussion about competence-based curricula and the development of personalities through key competences.

Notes

- 1 Cf. Mertens (1974).
- 2 Cf. Wissenschaftsrat (1986).
- 3 Cf. Höhne (2010).
- 4 Erpenbeck & Rosenstiel (2003: XI).
- 5 Cf. Barr & Tagg (1995).
- 6 Cf. HMEQS, Chur (2006).
- 7 Friedrich & Mandl (1997). **Seitenzahl?**
- 8 Cf. Beck (1986).
- 9 Ibid.127.
- 10 Cf. Sonntag (2006).
- 11 The Business-Focused Inventory of Personality (BIP, Hossiep & Paschen 2008), a propagated scientific questionnaire for the selection of personnel and the analysis of potential, lists four trans-disciplinary dimensions for acting in professional situations: Occupational Orientation (Achievement Motivation, Power Motivation, Leadership Motivation), Occupational Behaviour (Conscientiousness, Flexibility, Action Orientation), Social Competences (Social Sensitivity, Openness to Contact, Sociability, Team Orientation, Assertiveness), Psychological Constitution (Emotional Stability, Working under Pressure, Self-Confidence).
- 12 Cf. Koller (2005).
- 13 Weinert (2001: 51 ff).
- 14 Marton & Säljö (1976) **Seitenzahl anfragen**, cf. also Biggs (2003).
- 15 Deutsches PISA-Konsortium (2001: 19 ff).
- 16 Welbers (2004). **Seitenzahl?**
- 17 Roth (1971: 446ff).
- 18 Cf. González & Wagenaar (2008).
- 19 Cf. Rychen & Salganik (2003).
- 20 Cf. Chur (2006).
- 21 Cf. models of self-regulation, e.g. Gollwitzer (1996).
- 22 Cf. Friedrich & Mandl (2006).
- 23 Cf. Rosenstiel (2006).
- 24 Cf. Brandstätter (2006).
- 25 Marton & Säljö (1976:). **Seitenzahl?**

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- 26 Friedrich and Mandl (2006: 17) call this "langfristige Gewohnheitsbildung", my translation.
- 27 Marton & Säljö (1976:) **Seitenzahl?**
- 28 Cf. Streblov & Schiefele (2006).
- 29 Cf. Reinmann-Rothmeier & Mandl (2001: 627 f.).
- 30 "Wissenstransport" (ibid. 606)
- 31 Cf. Chur (2005: 187ff.)
- 32 Cf. Biggs (2003).
- 33 Cf. Fehr (2004).
- 34 Rosenstiel (2006: 110).
- 35 Cf. Krause & Eyerer (2004).
- 36 Cf. Friedrich & Mandl (2006).
- 37 Friedrich & Mandl (2006: 16 f.)
- 38 Cf. Macke (2005).
- 39 Koller (2005:). **Seitenzahl?**