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Higher Education with Competence

A Handbook on the Qualifications
Framework for German Higher
Education Degrees
(Framework for Higher Education: HQF)

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Ulrich Bartosch

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1. Higher education with competence – objectives of this handbook

A comprehensively revised version of a separate qualifications framework for the German higher education sector (HQF) has been available since 16 February 2017. It was developed by the HRK¹ and formally adopted by the KMK² with the consent of the BMBF³. It replaces the previous version from 2005.

The modifications had become necessary because the development of competence-oriented education and training had progressed further in the meantime. The original QF DH⁴, as the pioneering act, had now become outdated. In particular, the introduction of the German qualifications framework (GQF)⁵ on 1 May 2013 had established a politically supported, powerful instrument at a very central level within the German educational system. Since then, it has become necessary and possible to present the internal differentiation of the German education sectors in a more prominent way.

For universities the task of making the specifications of their educational mission and self-image more visible arose. In order to reach the goal of a permeability between educational pathways, a useful description of similarities and differences between the respective actors involved is a vital prerequisite. The differentiation, particularly between vocational and higher education, has gained new importance since the declared political objective of increasing the permeability between higher education and vocational training. In its Levels 6, 7 and 8, the GQF refers to this differentiation between higher education and vocational education and training by using a hybrid description (see Fig. 1). However, the specific nature of higher education must be explained by the universities themselves. The original QF DH had not dealt with this aspect in any depth as it was the first and only qualifications framework at the time, without any need to compare higher education to other areas of education.

¹ HRK: German Rectors' Conference

² KMK: Standing Conference of the Ministers of Education and Cultural Affairs

³ BMBF: Federal Ministry of Education and Research

⁴ HRK und KMK 2005 (https://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2005/2005_04_21-Qualifikationsrahmen-HS-Abschluesse.pdf).

⁵ Bund-Länder-Koordinierungsstelle für den Deutschen Qualifikationsrahmen für lebenslanges Lernen 2013 (http://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2013/130823_Handbuch_mit_nicht-barrierefreier_Anlage_MAM.pdf).

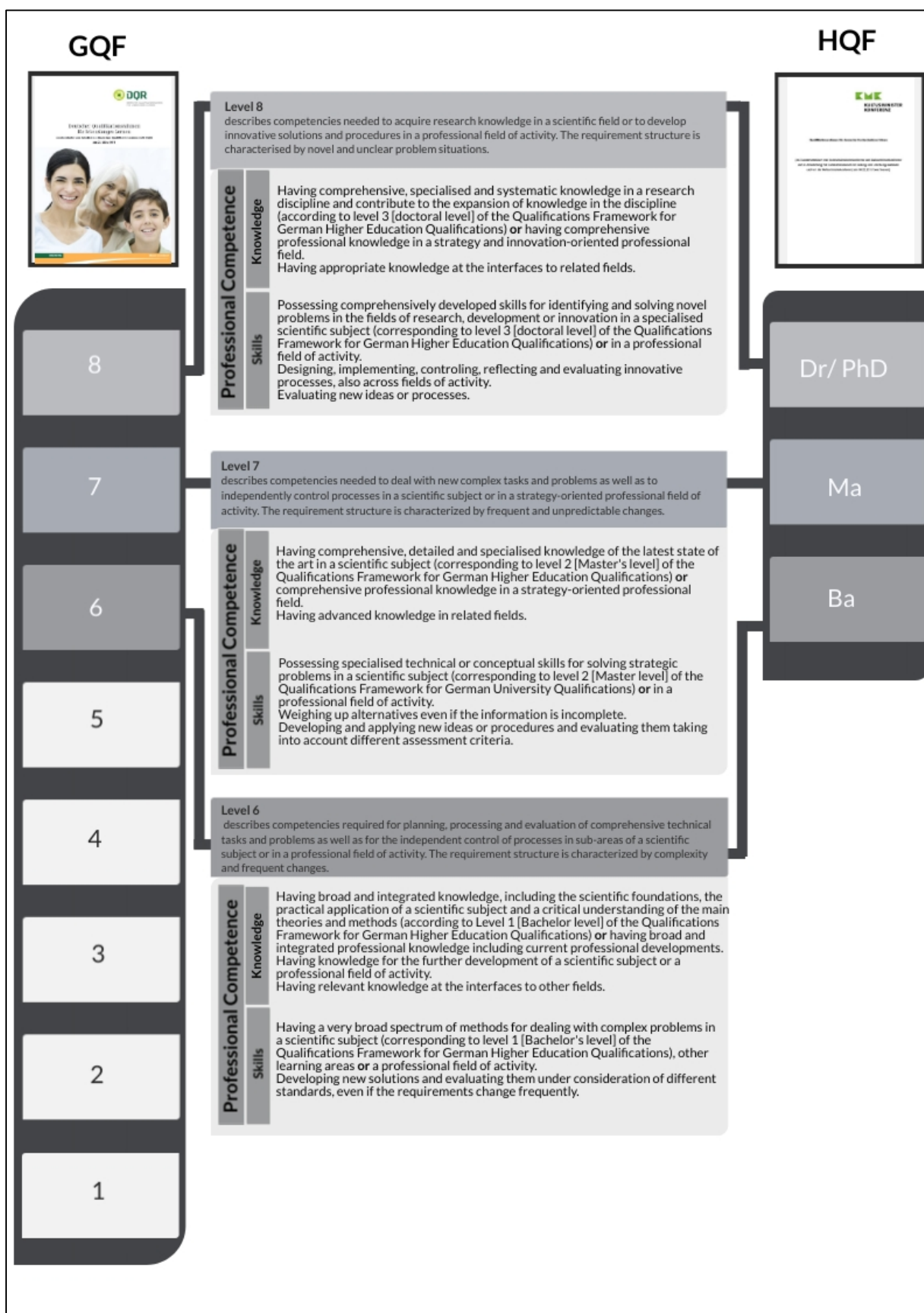


Figure 1: Attribution of the GQF-levels (left) to the HQF (right)

The present handbook is intended to provide assistance in using the HQF as a support instrument for organising teaching and learning in a higher education context. Indeed, the HQF can facilitate the completion of tasks arising in higher education if it is accepted as a common orientation framework for the self-image, objectives, design, examination system and comparability of higher education in Germany.

It is in the nature of things that educational issues - especially in higher education - are always controversial and subject to change. In this respect, it would be as inappropriate as it would be misunderstood if the HQF were used to dissolve the different positions in favour of a one-dimensional control logic. The opposite is the case. The HQF aims precisely at corresponding to the openness of academic discourses on education. This may seem rather strange for other areas of education with concrete qualification requirements. However, science must represent an open-ended, methodologically guided, responsible quest for knowledge as the core of the university's understanding of education.

"There is a theory of the university, and this theory is closely linked to a theory of science. In a nutshell: universities are places of education, of education through science."

(Jürgen Mittelstraß 1982, p. 119, translated by the author)

The - still relatively young - discussion on the meaning of competence in education provides the necessary openness to academic education. The concept of competence refers to individual aptitudes for successfully mastering (as yet) unknown tasks. Setting out into the unknown is the normal case for science and remains associated with the risk of failure. Scientific research cannot guarantee successful production of reliable results. Science also requires constant reflection on its own preconditions and cannot rely on cumulative knowledge generation. Breaks, regressions and leaps characterise scientific research and the history of research. A higher education qualifications framework must take all this into account and must use the strength of competence concepts: by modelling competence, descriptions of observable skills are made possible. They can be measured or rather assessed. The dimension of knowledge is also considered – within the critical function of knowledge.

This handbook is intended to assist in the reflection process. It should not be read - despite all efforts to find concrete implementation possibilities - as an instruction manual. In this sense, the HQF competence model is explained below.

(1) As a first step, the modelling of competence is an unavoidable prerequisite of any competence-oriented approach. It is necessary to determine what is to be considered as competence. Observable actions or achievements of a person are identified as evidence of an existing competence. The improved action/performance then indicates a further development of the underlying competence. (2) The next step is to determine the location within the system of existing qualification frameworks. Their function as instruments of comparison and transparency can only be used if they are recognised and differentiated in their mutual relation. (3) This is followed by a reflection on the logic of QF within the study programmes. The specific objectives or educational promises of the study programmes exemplify the framework at a more concrete level. (4) This operationalisation creates a sufficiently transparent basis for the comparison or recognition of individually acquired qualifications. Academic recognition and recognition of prior learning can be justified more easily with the disclosed structure of the individual study programmes. (5) Finally, an outlook on current trends to which the HQF should prove to be compatible is given.

All remarks remain concise and are intended to provide an easy and quick insight, also using integrated graphics. Thus many (self-)critical thoughts and questions remain unspoken. They will find their place in a more comprehensive publication.

This handout aims at carefully providing support. It is committed to the mutual understanding of higher education as a special social mandate with great responsibility for the future development. Naturally, it can and should provoke critical suggestions on how to improve the profile of higher education.

2. Research and reflection at the centre - the HQF competence model

The HQF follows a widely used concept of competence to act, which was formulated by Weinert in 2001. According to this concept, competences are understood

"...as cognitive abilities and skills available to individuals or learnable through them to solve specific problems, as well as the associated motivational, volitional and social willingness and ability to use problem solving in variable situations successfully and responsibly."

(Weinert 2001, p. 27f., translated by the author)

Hereby the origins of the potential of a person (and possibly also of an organisation) are identified from two different perspectives. Cognitive and affective aspects are intertwined. Successful action is based on a multidimensional set of skills that can be effective in concrete situations. Our competence allows us to approach uncertain challenges with confidence and others expect successful action from us when they attribute competence to us. The many critical questions regarding the competence concept will not be addressed here. Its acceptance in the current educational discourse is considered the starting point for its concrete implementation and application in higher education.

Competence describes a potential for the presumed ability of a person to act intentionally, purposefully and successfully. Competence is a construct that - differentiated into plausible and observable elements - appears as a multidimensional structure. Only the definition of competence within the framework of a competence model makes it possible to develop criteria for the observation and measurement of competence. Put simply, what constitutes the competence of a university graduate can only be described and observed if it is defined beforehand with regards to what this competence is supposed to constitute. The operationalisation of the competence construct within the framework of a model thus determines what is generally understood as the competence of this group of people. It is therefore crucial for all processes of comparison with other groups of people that the specific aspects of higher education be expressed in the competence model for graduates.

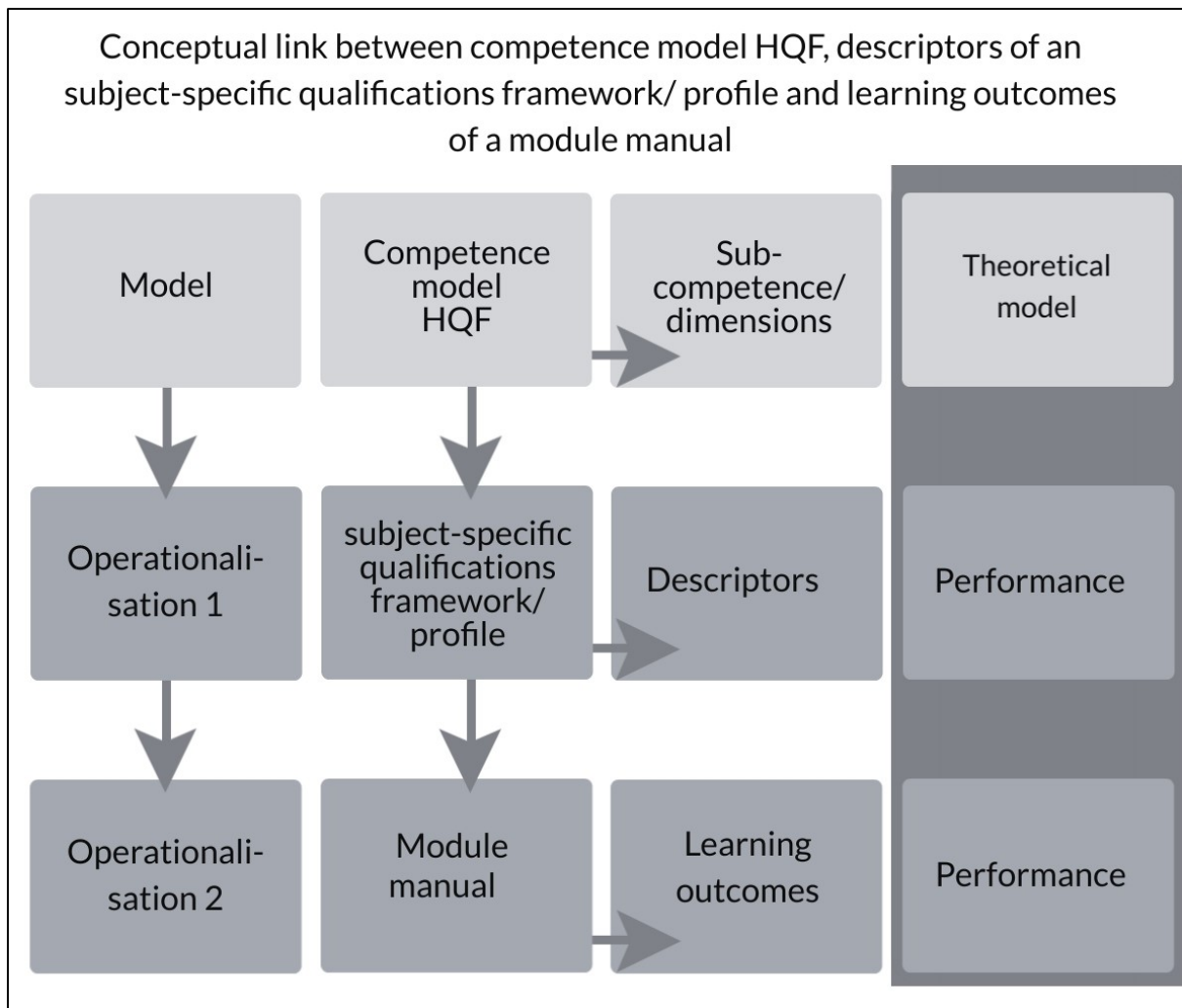


Figure 2: Conceptual link between competence model HQF, descriptors of a subject-specific qualifications framework or subject-specific qualifications profile and learning outcomes of a module manual

The HQF considers the ability to methodically generate scientific knowledge and the critical reflection of existing knowledge and applied methods to be characteristic for the acquisition of competence through higher education. This does not yet address all dimensions of the specific competence model. However, the proven ability to apply scientific methods is disclosed as an indispensable linchpin. Scientific work is not determined solely by the meticulous application of methods and technical procedures. Science is also characterised by conscientiousness and responsibility. It sees itself as a public activity and is committed to the search for truth. This obligation must be placed before any interests of exploitation. The scientific statement thus differs from a political statement or an economic recommendation in that it is limited to the scientific facts and credibly distinguishes between these and the further interests of the researcher(s). The HQF pursues this assumption without denying that many deviations from the ideal type of science have an impact on the reality of the scientific community. The primacy of the commitment to truth cannot be abandoned.

"Scientific, which means: to know what you know and what you do not know; dogmatic knowledge is unscientific. Being scientific means to know the reasons as well; acceptance of set opinions is unscientific. Scientific is being aware of respective boundaries of knowledge; everything that is considered complete knowledge, as if one knew about something in full, is unscientific. Unlimited criticism and self-criticism, the propellent questioning is scientific; the concern that doubts could paralyse is unscientific. The methodical advancement that gradually leads to a decision on the basis of experience is scientific; the play of multiple opinions and possibilities and rumour is unscientific."

(Karl Jaspers 1947, p. 23, translated by the author)

As a further development of the QF DH (2005), the HQF (2017) formulates its competence model in four dimensions: (1) Knowledge and understanding, (2) Use, application and generation of knowledge, (3) Communication and cooperation, (4) Scientific self-understanding, professionalism.

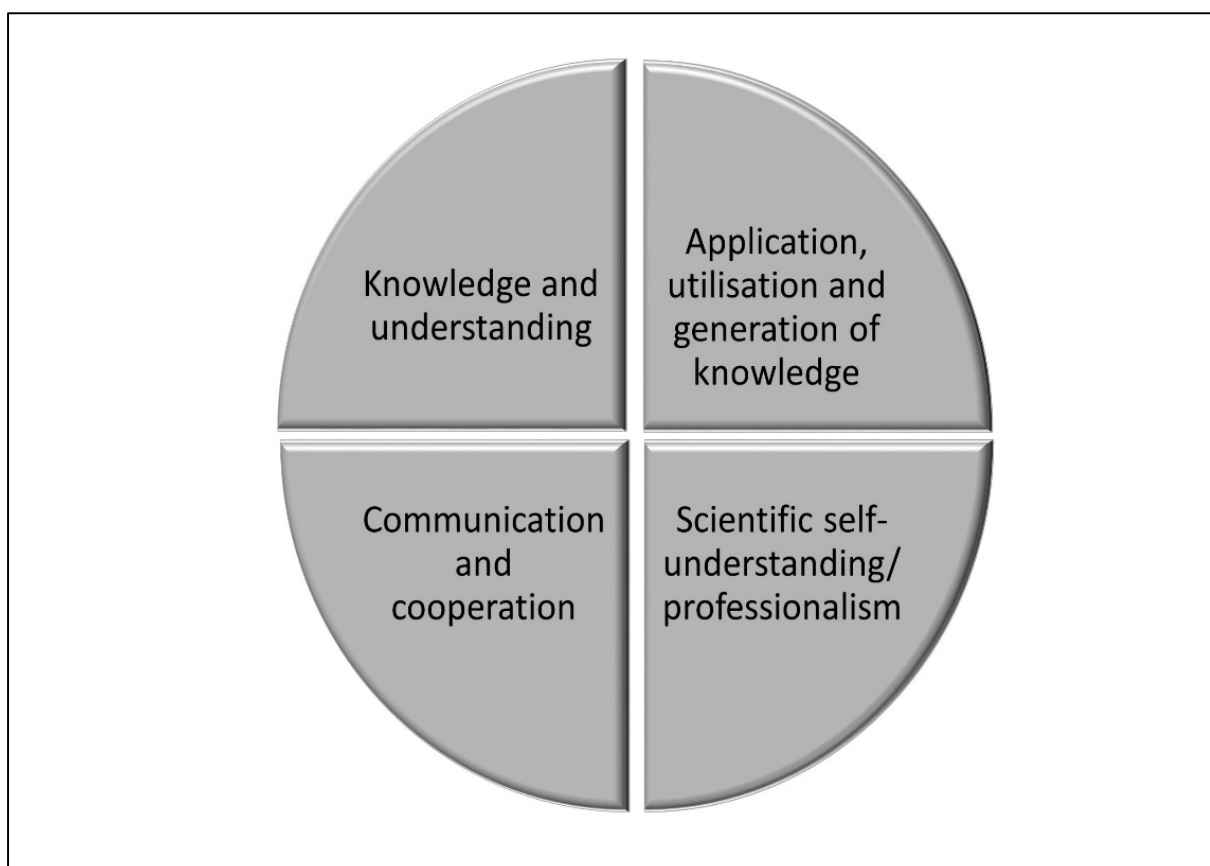


Figure 3: Competence model HQF

It is about the description of the expected, presumed qualification of an academically educated person, which develops in the following four questions:

What distinguishes their cognitive operations? What approach to problem solving can be expected? How are their interaction and participation in social contexts structured? Which attitude forms the framework for professional action?

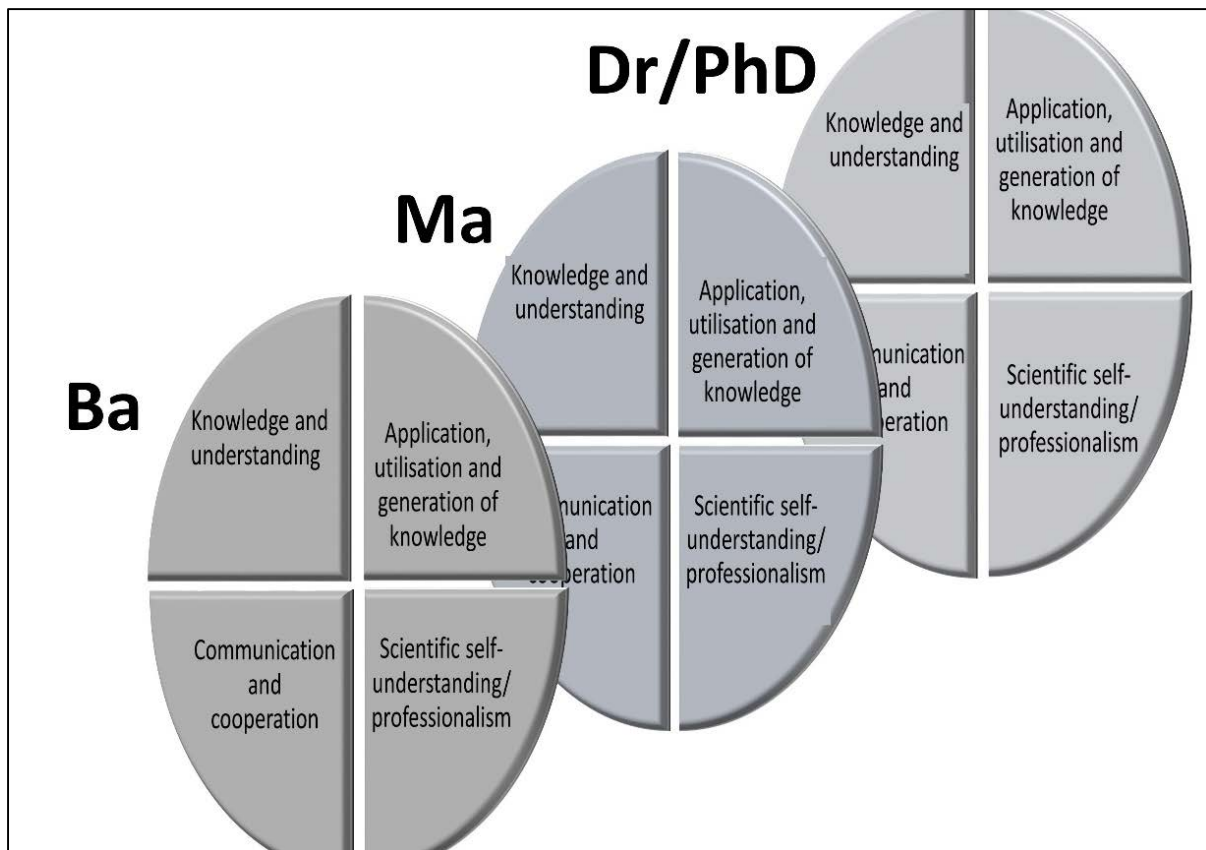


Figure 4: Competence model and academic levels

(1) Knowledge and understanding: What characterises the cognitive operations of university graduates?

The dimension *knowledge and understanding* is divided into three sub-dimensions to describe the relevant aspects of cognitive operations. Knowledge is understood as an available stock of (technical) competences, expanded in cumulative and qualitative terms (knowledge expansion), specialised, qualitatively deepened (knowledge deepening) and questioned in critical and reflective ways (knowledge understanding). A list of descriptors operationalises this dimension more precisely for the academic levels Bachelors, Masters and PhD/Doctorate. In this way, graduates are assigned a professional knowledge that is specifically expanded and differentiated. At the same time, the reflected understanding of one's own knowledge

becomes more complex and ideally moves from the position of naive belief or proto-scientific conviction towards a critical dependence on defined prerequisites.

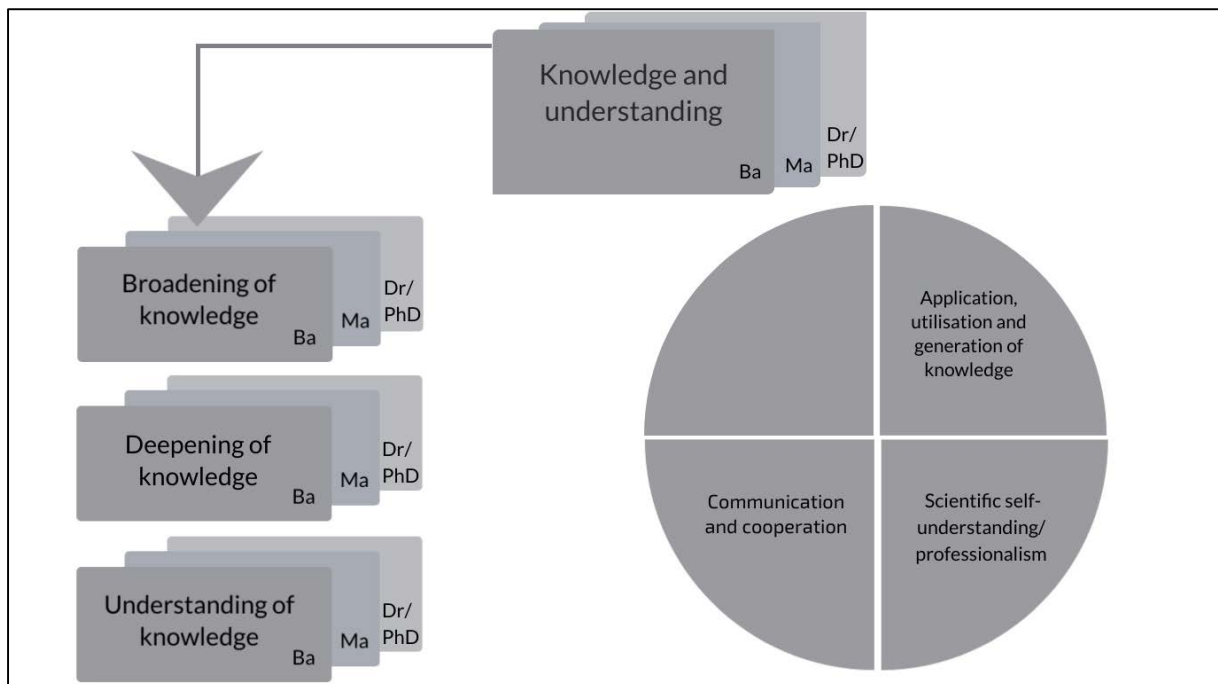


Figure 5: Partial dimension 'knowledge and understanding' of the competence model

The knowledge and understanding of the academically educated person thus is characterised by a generally critical understanding of knowledge. This means that the commonly accepted classification of the ability to reflect, as a characteristic qualification of academics, is accorded a practicable position in the HRK's competence model.

(2) Use, application and generation of knowledge

The second dimension is divided vertically. This is a special feature by which the HQF aims to do justice to the realities of the working environment. In fact, the requirements in professional practice are not generally to be seen as research tasks.

Rather, a person with higher education must often prove his or her worth in the same tasks as skilled workers, who have undergone vocational training. The HQF therefore does not claim that only academics can be innovative in professional practice. Rather, it expresses that they must also possess the ability to work under the requirements of the labour market ("employability"). This ability is also described by descriptors for the three academic levels.

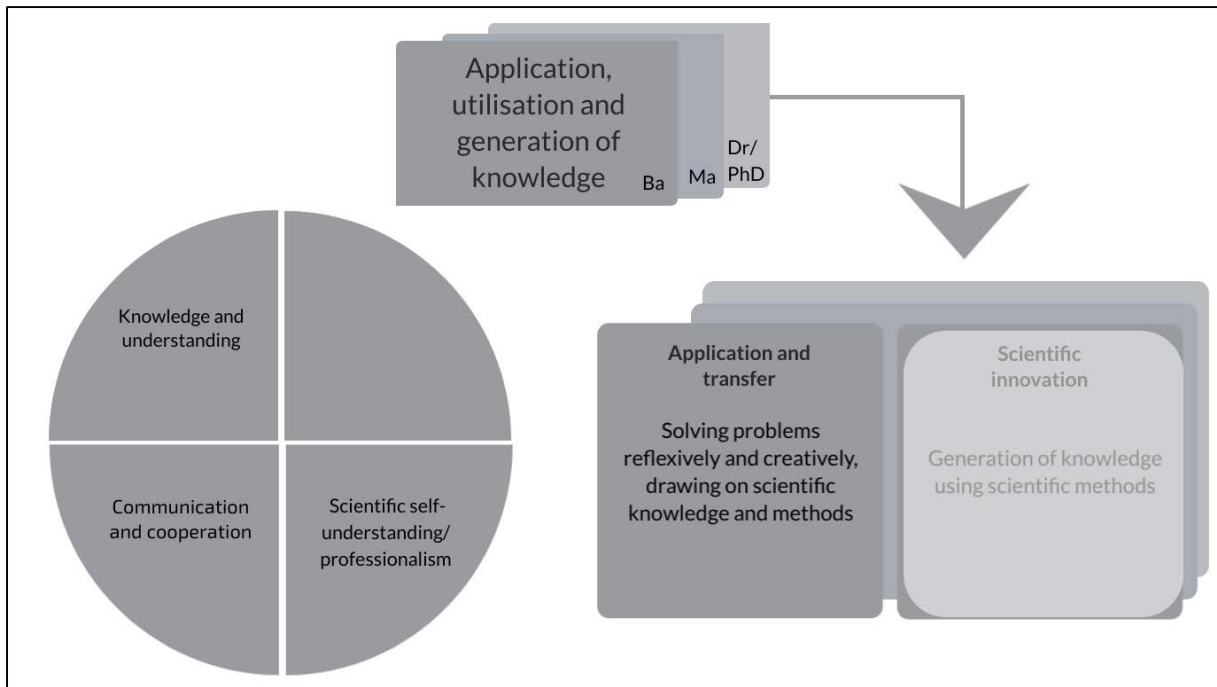


Figure 6: Partial dimension 'application and generation of knowledge' (1) of the competence model

The ability to conduct research is specific to higher education. It is declined in the second sub-dimension. It forms the core of the objectives of academic education and is to be seen differently for the numerous different scientific disciplines. Within the basic agreement in principle, each sub-dimension then vertically distinguishes the three levels Bachelors, Masters, PhD/Doctorate.

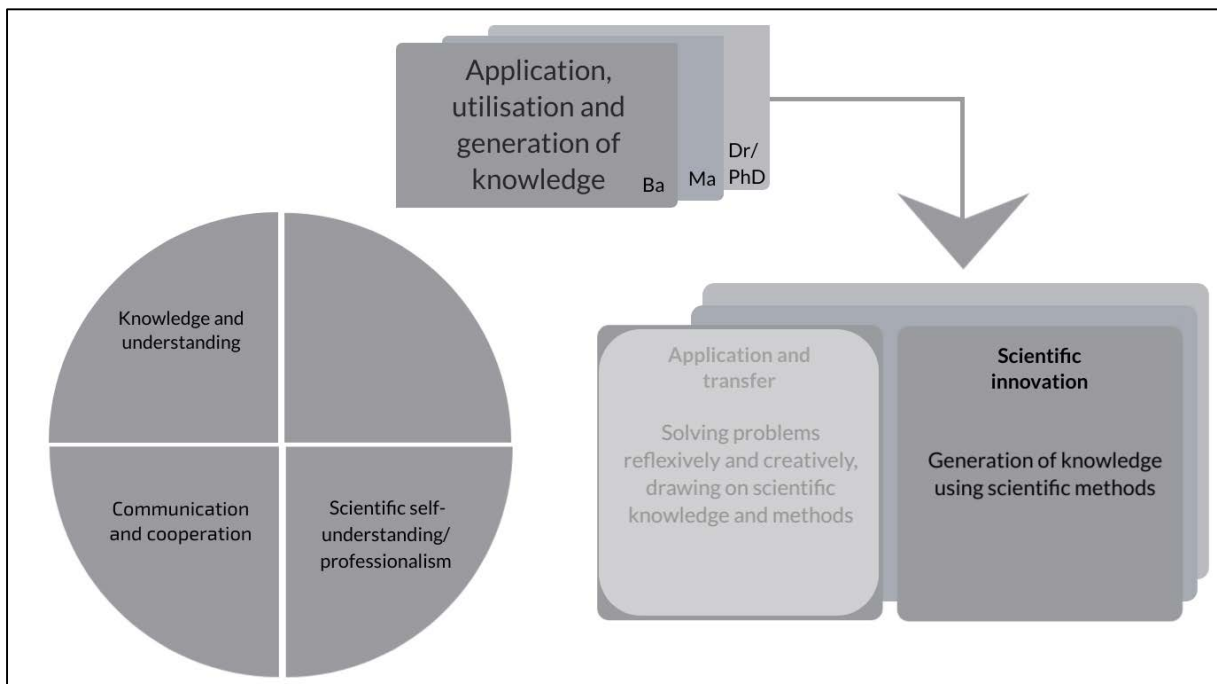


Figure 7: Partial dimension 'application and generation of knowledge' (2) of the competence model

The application of knowledge in the academics' competent action is therefore to be described

on the one hand, on the basis of a critical understanding of knowledge, as scientific methodical knowledge production and/or on the other hand, as innovative professional problem solving.

(3) Communication and cooperation: How are university graduates involved in social contexts?

The third dimension is again divided into three sub-dimensions. It is dedicated to the specific characteristics and inner differentiation of communication and cooperation of university graduates. The interaction of professional actors in the general field of work must meet common demands that prepare them for both professional and academic activities. The HQF therefore emphasises those forms of communication and cooperation as a special expression of social competence that are specifically associated with academic activity. The focus is on communication and cooperation in the context of research activities and on communication from the narrower field to a broader public. This bridging of specialist language and understanding into everyday language for communication and perception is a genuine task of scientists.

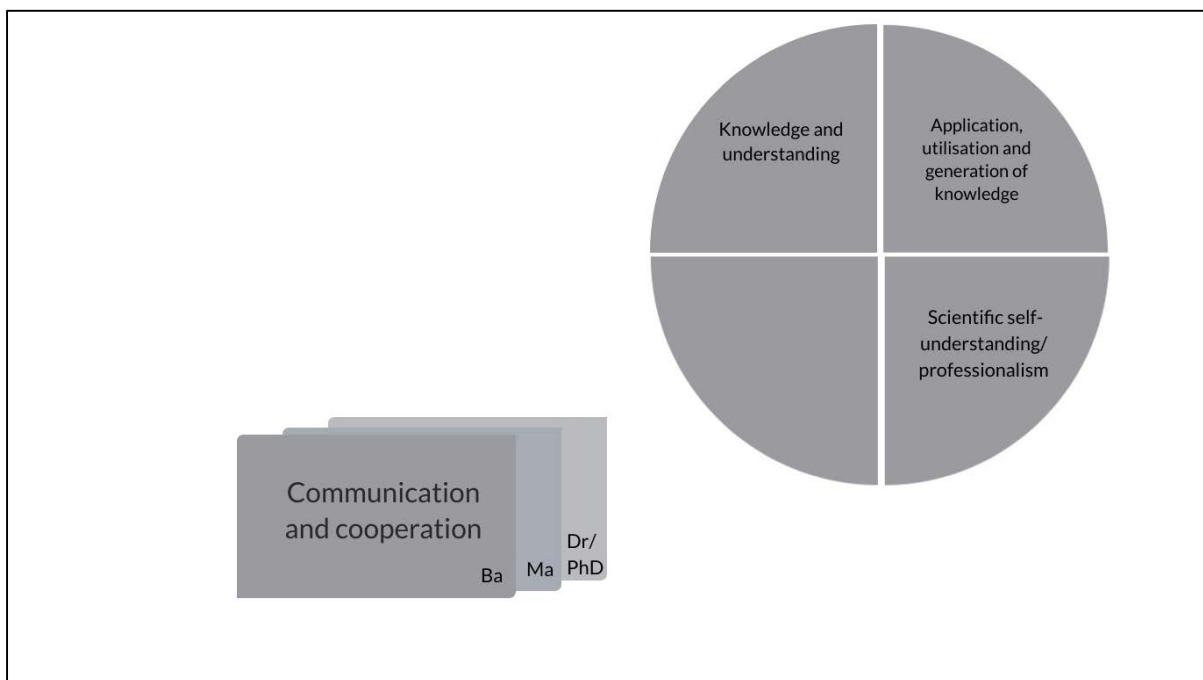


Figure 8: Partial dimension 'communication and cooperation' of the competence model

(4) Scientific self-understanding, professionalism: Which attitude forms the framework for the professional action of university graduates?

The fourth dimension describes the complex "scientific personality". It takes up a concept that is characterised by a certain openness, but which is nevertheless - or precisely because of this - of particular importance. Here, mainly those aspects of competence are operationalised which constitute the affective part of the overall concept of competence by Weinert. The cognitive and motor potentials of a person are only brought to successful action through the existing drive (motivation), will (volition) and social behaviour (communication and cooperation). In the HQF, scientific self-understanding and professionalism serve to describe the self-competence and autonomy of graduates.

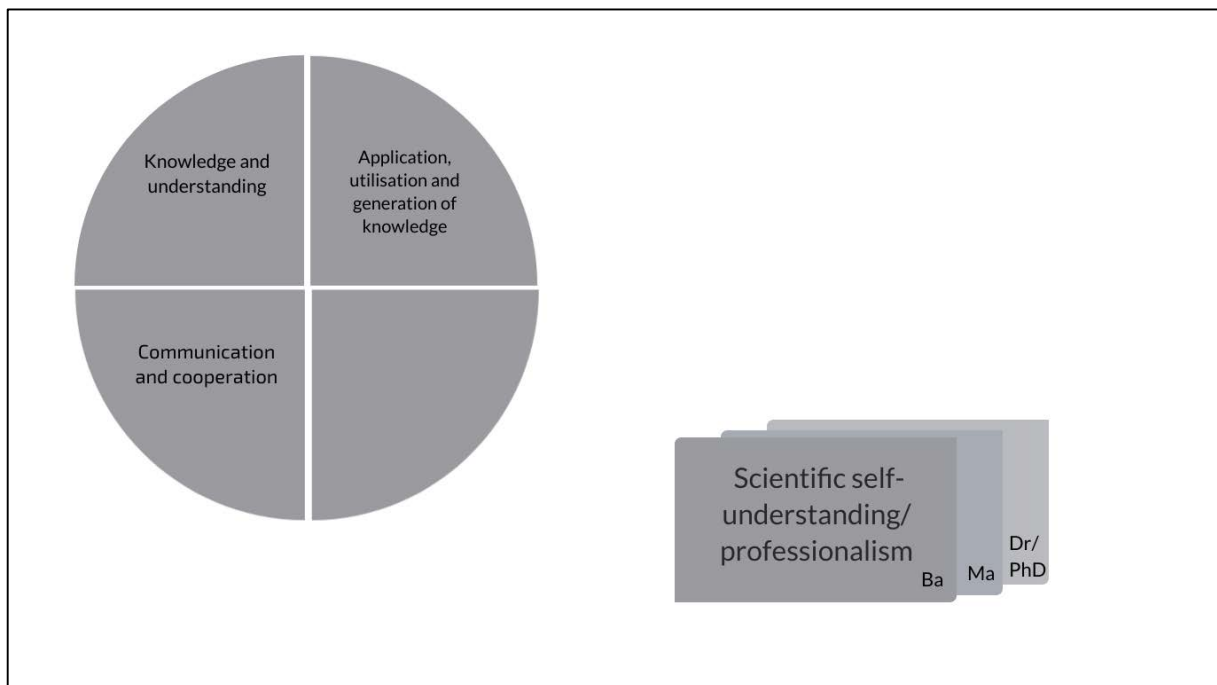


Figure 9: Partial dimension 'scientific self-understanding/ professionalism' of the competence model

The dynamic understanding of the HQF can be seen in the overview of dimensions. The competence model is not trying to conceal the simplifying character of modelling. What remains is a rough approximation to an understanding of highly complex interrelationships and a plausible proposal for the improved visualisation of learned/learnable prerequisites for successful, intentional action by people with higher education.

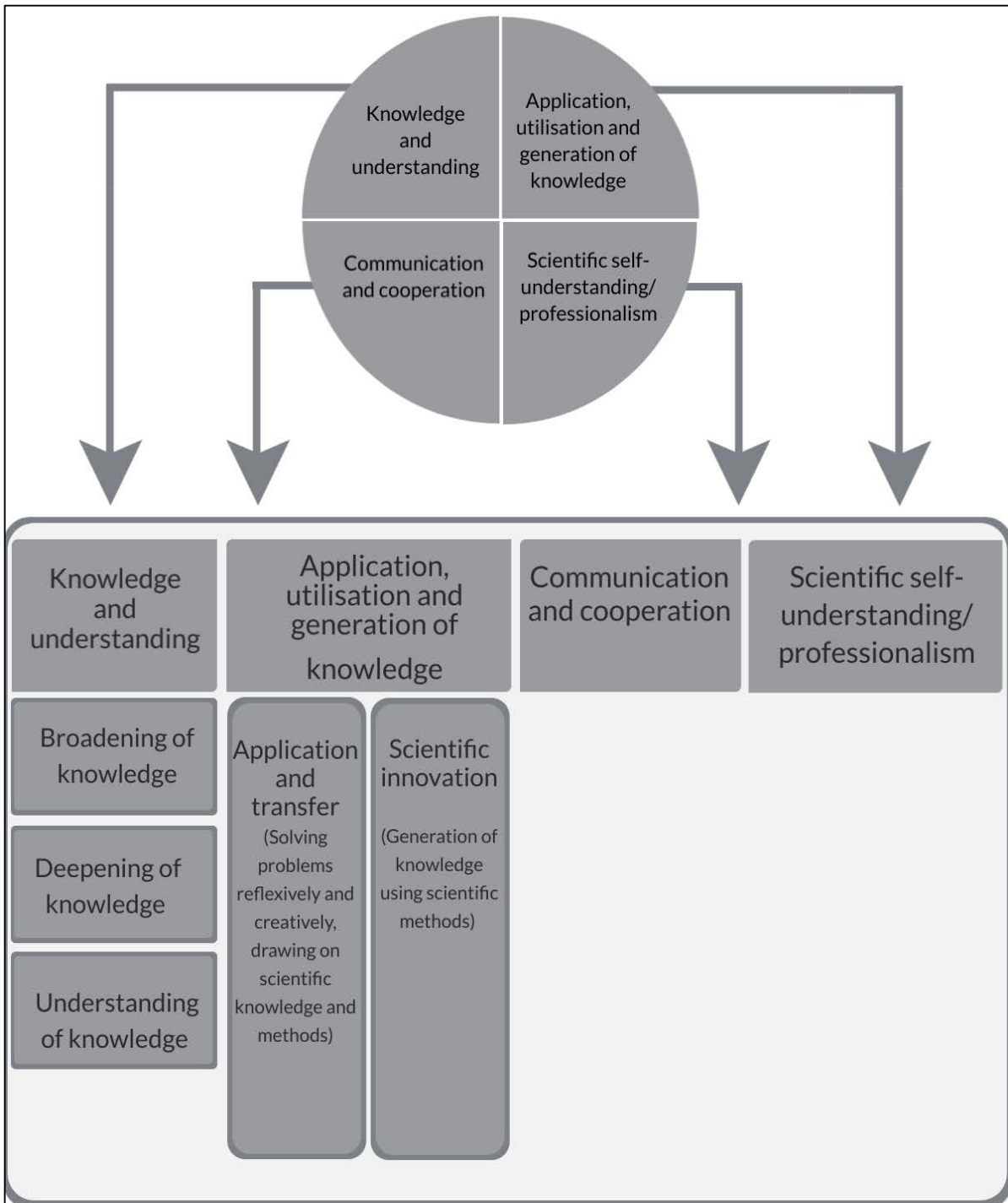


Figure 10: Competence model

What, in short, is it that distinguishes the academically educated person in the HQF competence model? Based on the ability to expand and reflect on their own knowledge base, they solve given (or self-imposed) tasks by methodical scientific knowledge generation. They do this in social interaction with appropriate professional and generally understandable forms of communication and cooperation and are conscientiously committed to the standards of scientific work in a reliable, methodical and ethical manner.

3. Designing common educational areas - qualifications frameworks as the key to permeability

The development of the HQF followed the guideline to position a higher education-specific instrument for Germany in an existing international system of qualification frameworks. It forms a necessary interface for participation in a permanent process of comparison and exchange of qualifications within Europe and also worldwide. As an interface, a QF has two directions of action: one outward and one inward.

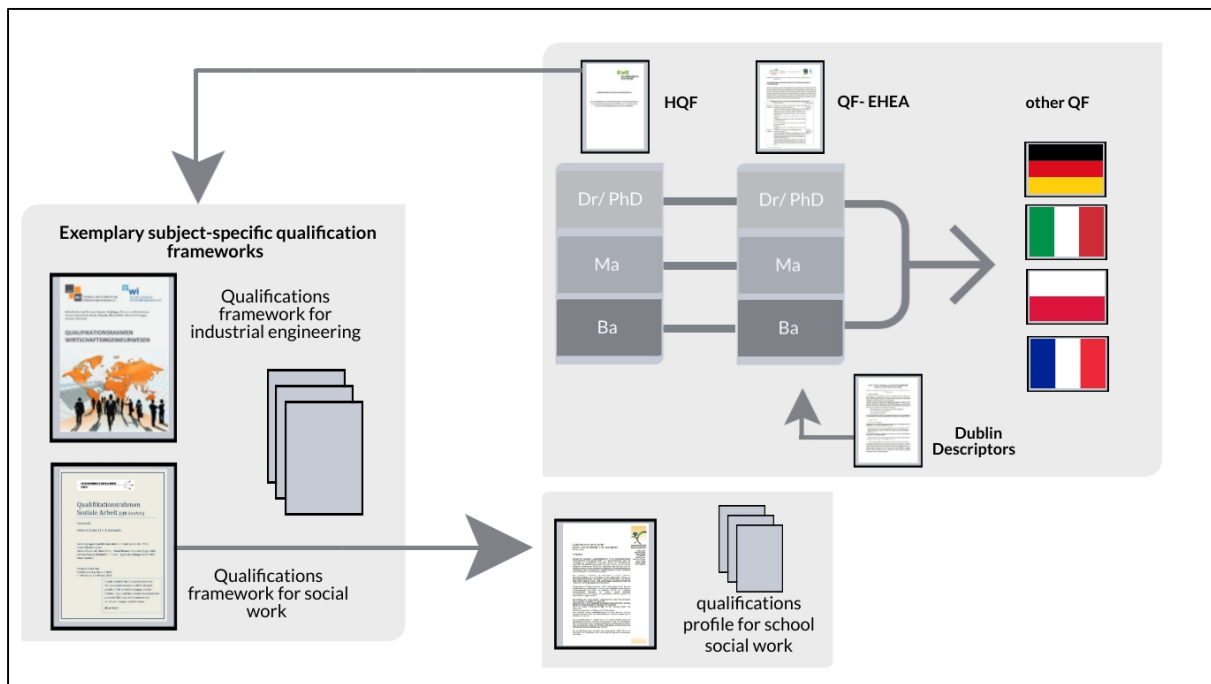


Figure 11: National and international allocation of higher education QF and QP in the higher education area

Externally, the HQF establishes the compatibility of its own education sector with other education sectors. At the same time, it enables the comparison of one's own qualification goals and results with the requirements or expectations of existing fields of work. The logic and language of the QF underscore the question: What can a person with a particular degree and qualifications profile do? Thus, the origin/source of the qualification moves into the background (where, with whom, how long and what has the person learned?). Learning outcomes should take the place of the listing of learning contents. If a comparable language is used by the different QFs, the comparison of qualifications (and thus the mobility of the qualified person) should be made much easier.

Internally, the QF has a structuring effect. It draws attention to the formulation of learning outcomes and thus to the substantiation of learning content, teaching/learning processes and

examination forms. Teachers are encouraged to reflect on their teaching. Roughly speaking, the question: Have I said everything? is replaced by the question: Can learners now do what they are supposed to be able to do? Since the qualification framework provides the general answer to this question, its rather broad descriptors must be operationalised in more concrete descriptions. Finally, it can be described at the module-level which contribution to the overall acquisition of competence, over the course of the study programme, was aimed for or made possible. The appropriate form of examination gives the opportunity to examine individual success.

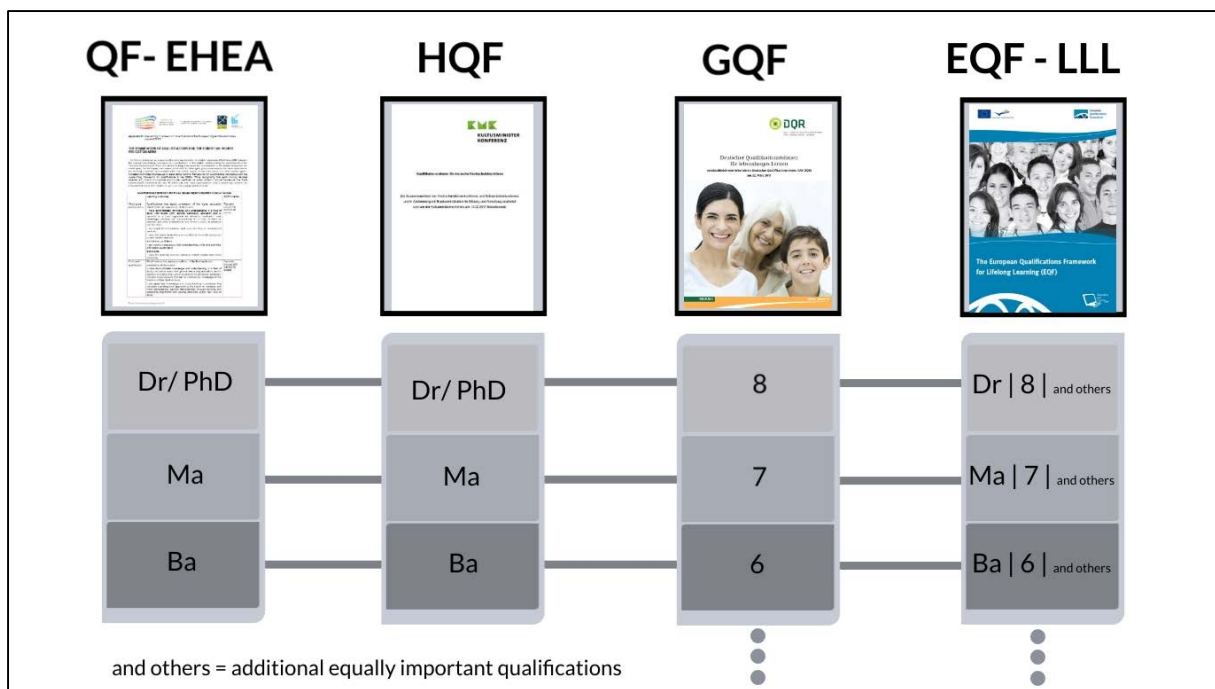


Figure 12: National and international allocation of the HQF in the field of lifelong training

The HQF occupies a specific position in the QF system. It is a national version of the European Higher Education Framework (QF-EHEA) and sets the frame for subject-specific, sectoral QF in the German higher education system (e.g. QF SARb⁶). The latter in turn can be used as a framework qualification profiles in sub-areas (QP SchulSarb⁷) and/or on the degree programme level. In relation to each other, these QFs enable the comparison and exchange (recognition) of higher education (sub-) qualifications by their subject-specific determination and by their assignment to the levels Bachelors, Masters, PhD/Doctorate.

The higher education QFs form a separate area (domain) within the overall system. The European qualification framework for lifelong learning (EQF-LLL) is designed as an overarching

⁶ QF SARb: qualifications framework for social work

⁷ QP SchulSarb: qualifications profile for school social work

QF across all educational areas. It is intended to serve as an orientation instrument for all described (and yet to be described) educational pathways in Europe and therefore does not differentiate between higher education and vocational education or training.

Input vs. outcome orientation Shift from teaching to learning

The German qualification framework (GQF) was established as the national version of this approach. Within its development process, however, it has been used extensively as a comparative instrument for higher education and vocational training pathways in Germany. Since vocational education and training has not yet formulated its own qualification framework, it is primarily through this instrument that it is involved in exchange and comparison. The occupation-specific training regulations are used as descriptions and identified for a level of the GQF via an allocation procedure. As a result, no description is given of what makes vocational education and training specific (and distinguishable from higher education). The need for a higher education self-description with a high degree of differentiation arises directly from this.

The HQF supports the efforts of the universities to make their range of studies transparent in the specific characteristics of research-based, scientific learning. Exchange and permeability between educational pathways are thus made possible. A process-based structure is proposed to facilitate the step from the abstraction of the competence model as a potential determination to the concretisation of the description of qualifications. It aims to build a bridge between the assumption of an ability (competence) and the observable effect as an ability in successful action (performance).

THE HQF COMPETENCE MODEL AND ITS PERFORMATIVE OPERATIONALISATION

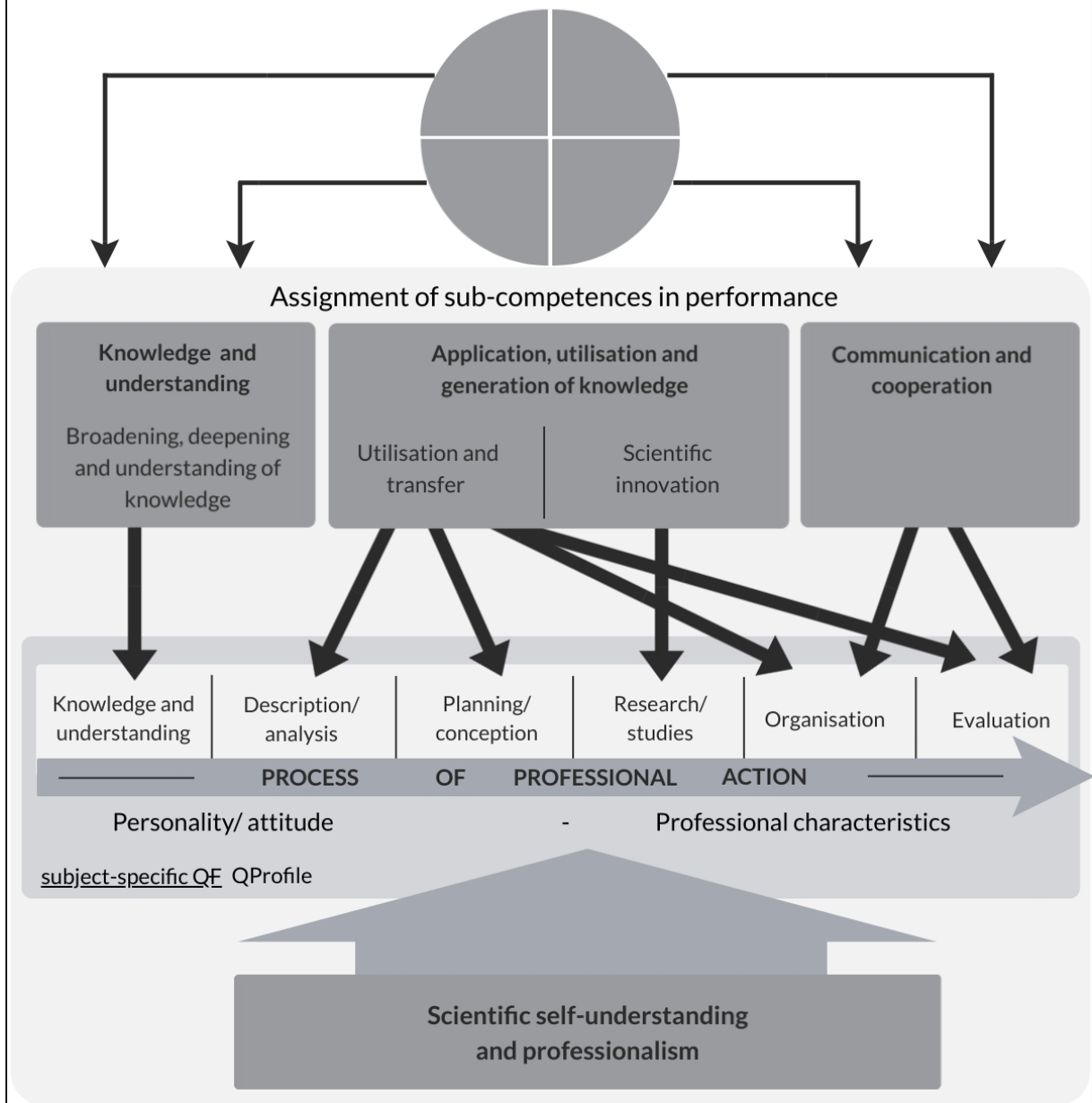


Figure 13: Competence model and its performative operationalisation

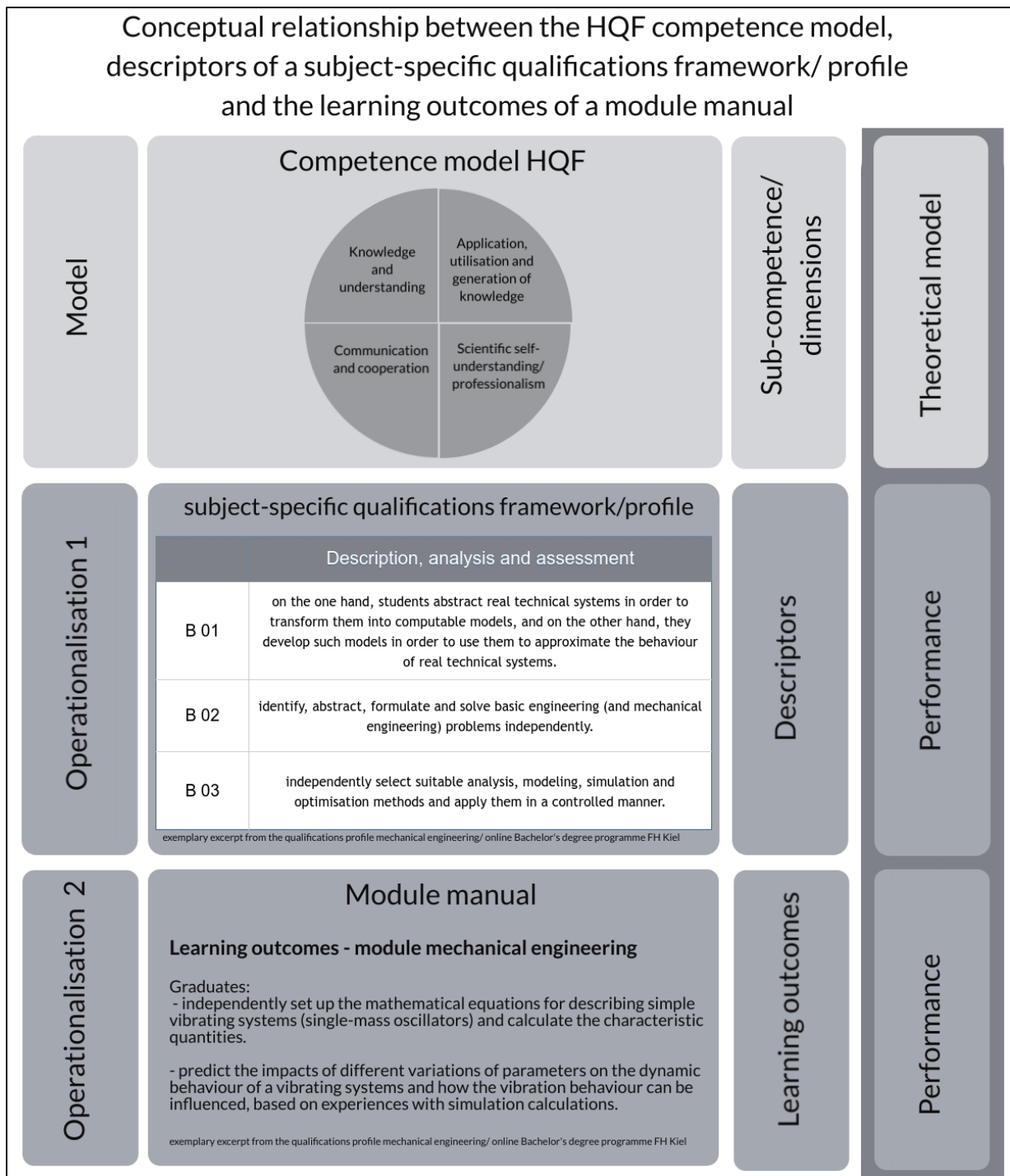


Figure 14: Conceptual relation between competence model HQF, descriptors of a subject-specific qualifications framework or subject-specific qualifications profile and the learning outcomes of a module manual

To this end, the competence dimensions are based on steps of planned action and described as visible, observable aspects of successful action. These are understood as the results of higher education programmes. The background is formed by the assumption that professional action begins with the problem analysis on the basis of specialist knowledge. Conceptually and methodologically guided problem solving can also include scientific research activities. It is concluded with the securing of results and is added to the own knowledge base for new tasks.

In this way, a quality circle of professional work is adapted.

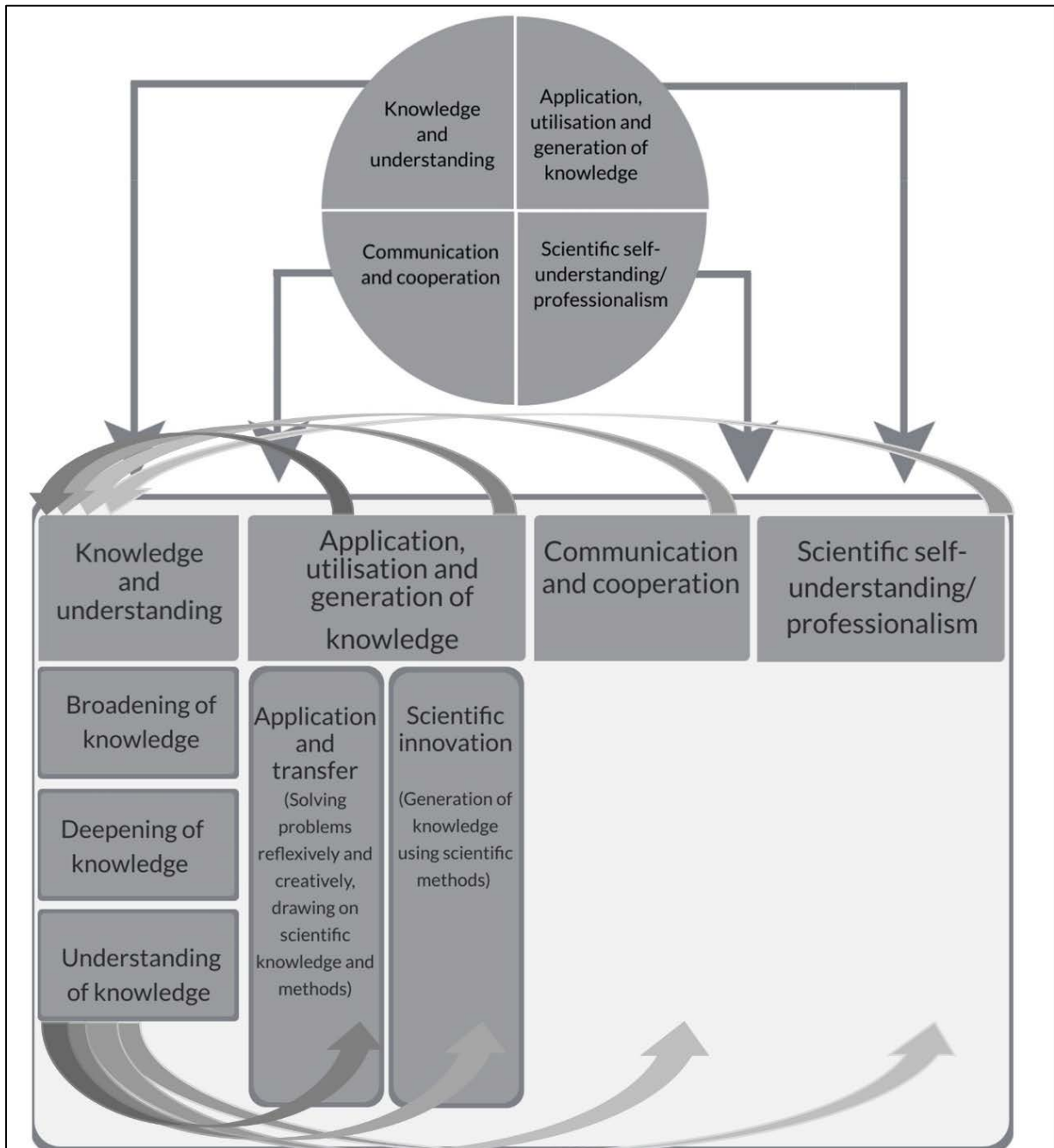


Figure 15: Processualism of the competence model. The dimensions generate a dynamic of reciprocal influence.

4. Transparency of educational opportunities - the construction of study programmes on the basis of qualification profiles

A study programme can be understood as a concrete, exemplary learning/teaching space for realising the qualification promises made in the qualifications framework. The university interprets and designs the descriptors of the HQF in a specific way and describes this

through learning outcomes in its own documents (e.g. module manual).

This does not, of course, express in an exhaustive manner what needs to be considered for education in and by the university. In the sense of this handbook, the application of the QF should help to clarify the respective understanding of the common higher education mandate and the specific teaching and learning culture of the university. Thus, the characteristic link between research and teaching will have to be considered everywhere but will have different specifications. The university's participation in social processes will also have to be reflected appropriately.

The referential application of the QF for the qualification description of study programmes helps ensure the transparent presentation of the range of courses offered. The integration into the system of compatible, exchangeable qualifications should be made possible. The transparency thus created can also support the verification within an accreditation procedure by measuring the desired qualification goals against the HQF.

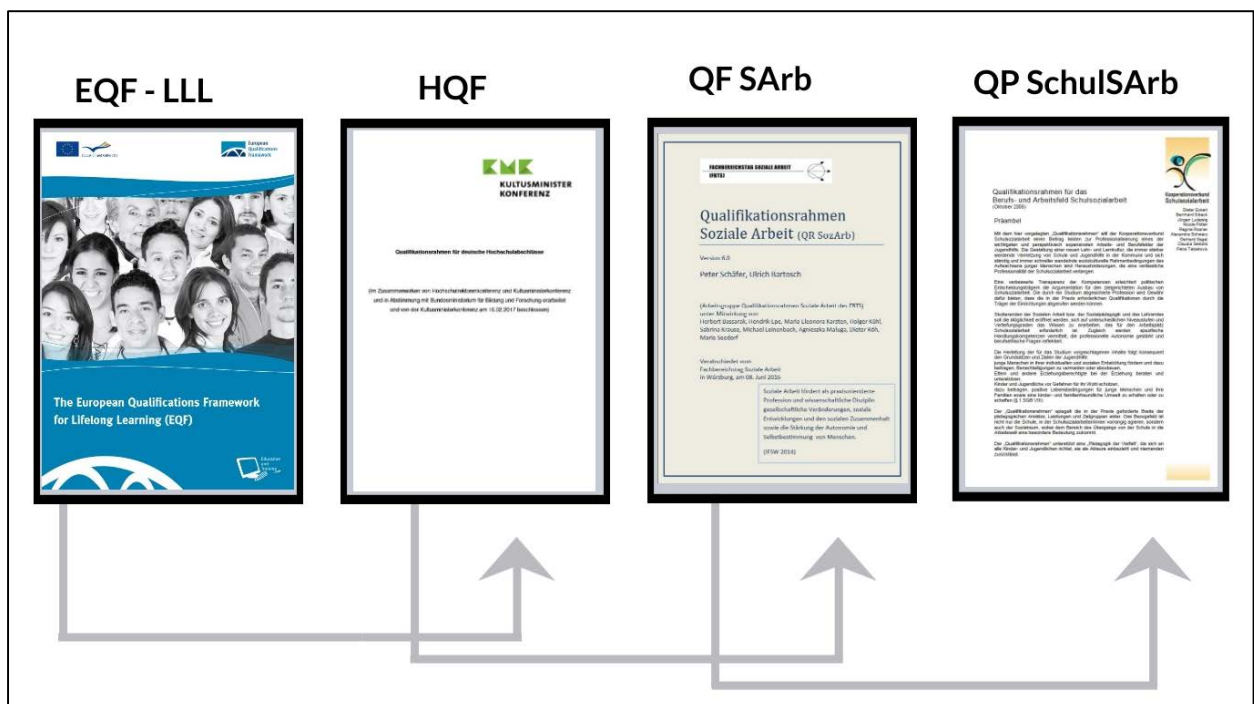


Figure 16: Rank order of the frameworks with regards to the increase of their specialisation

In concrete implementation, the HQF can be more precisely defined by a subject-specific qualifications framework in the internal discourse of a discipline. In the process, the dimensions of the HQF competence model are transferred from the description of a potential to the description of a performance. Existing core curricula or given labour market requirements as well as supplementary subject-specific information should or can be

incorporated. A consensus of the academic community on core curricula or requirements of regulated professions (e.g. "state recognition") should be considered.

This description, too, necessarily remains very general, as it is intended to represent the specialised, professional competence of an entire group of graduates from a particular discipline. It must remain open to the diversity of the characteristics of study programmes at the different study locations. The description must ensure that the graduates of e.g. electrical engineering are recognisable in their similarities and can be distinguished from the group of computer scientists, for example. The distinction is to be formulated in such a way that it captures the different competences and does not refer to the different teaching/learning contents. In any case, it must be possible, e.g. for electrical engineering and computer science, to make the university origin of qualification clearly visible compared to professional qualifications in their specialist areas (master craftsman's certificates, advanced training, other certificates). The selected broad learning outcomes in turn represent bundles of more precise learning outcomes at degree programme and module level. They also have the function of differentiating the levels of higher education qualifications. As core examples, they determine the differences between Bachelor's, Masters' and PhD/doctoral degree by indicating the qualification's affiliation to a particular level (descriptors).

The following questions are incorporated into the design of the programme:

- What are the prerequisites for successful study? (Based on descriptors of access qualifications, possibly provable professional experience, e.g. by means of GQF, HQF)
- Which level should be reached? (Orientation towards descriptors of the HQF and subject-specific qualifications framework)
- Which subject-specific qualifications are to be achieved? (Orientation towards the descriptors of the subject-specific qualifications framework)
- Which issues are covered by the qualifications? (Orientation to fields of work, sub-disciplines, specialisations)
- Which teaching/learning processes enable/support the different learning outcomes? (Differentiation of learning locations university/practice/abroad, differentiation of teaching/learning methods)
- How are learning outcomes observed/assessed? (Differentiation of self-/external observation and examination)
- How is the learning process as an educational process developed over time? (Planning

of the study programme)

- Which teachers are suitable for the accompaniment of sections of the learning process? (university, professional practice, civil society)
- Which sections/modules of the course can be replaced by proven previous experience, if applicable? (recognition or recognition of prior learning)

As a starting point, a qualification profile (QP) should be written for the study programme, which expresses the common goal perspective of the university and the teachers involved. It can be designed as a concretisation of an existing model for teaching and learning. In the QP, the specific qualification promises of this study programme are described and made transparent by allocation to the individual modules. Further questions are dealt with by the allocation:

- Which elements of the QP are concretised in this module? Which forms of teaching/learning serve this goal?
- At what point in the study programme, in terms of time and content, is this learning opportunity appropriate?
- What constitutes the university character of this module? How can the learning outcomes be observed/checked?
- What previous experience may have made equivalent learning outcomes possible?

The differentiated overall presentation of the study programme enables a transparent insight into its inner logic. Nevertheless, qualification descriptions remain approximations that are expressed based on a coordinated plausibility check. The coordination must be carried out between the various actors involved. They cannot and must not be read in the sense of technical or psychometric quantities. Just as a map only makes it easier to determine a specific hike in connection with the hiker's constitution, equipment, decisions, weather conditions, season and unforeseeable events, the transparent presentation of the study programme provides a wide range of possibilities for support for all those involved, but does not offer any technical instruction.

The assignment of the QP to the individual modules results in distribution of the achieved learning outcomes over the time line of the study programme and, derived from this, a representation of the gradual accumulation of the QP. The complete QP is used as a target matrix.

Excerpt from Bartosch, Kirchhof, Maluga & Maile-Pflughaupt (2015): Das (Lern)Ergebnis von Beginn an im Blick!, Arbeitsheft LINA VO, p. 9-14 – (Learn)results in the spot light from the start! Arbeitsheft LINA VO

“In the LINA VO joint project we are guided by the process logic of the qualification framework for social work, which was adopted by the Fachbereichstag Soziale Arbeit⁸ as the first subject-specific qualifications framework in 2008.⁹ The process logic of our qualification framework describes the qualification requirements of students in detail at the levels of knowledge and understanding, analysis and assessment, research and inquiry, planning and conception, organisation and implementation as well as evaluation in relation to the respective subject-specific requirements of the study programmes to be developed.

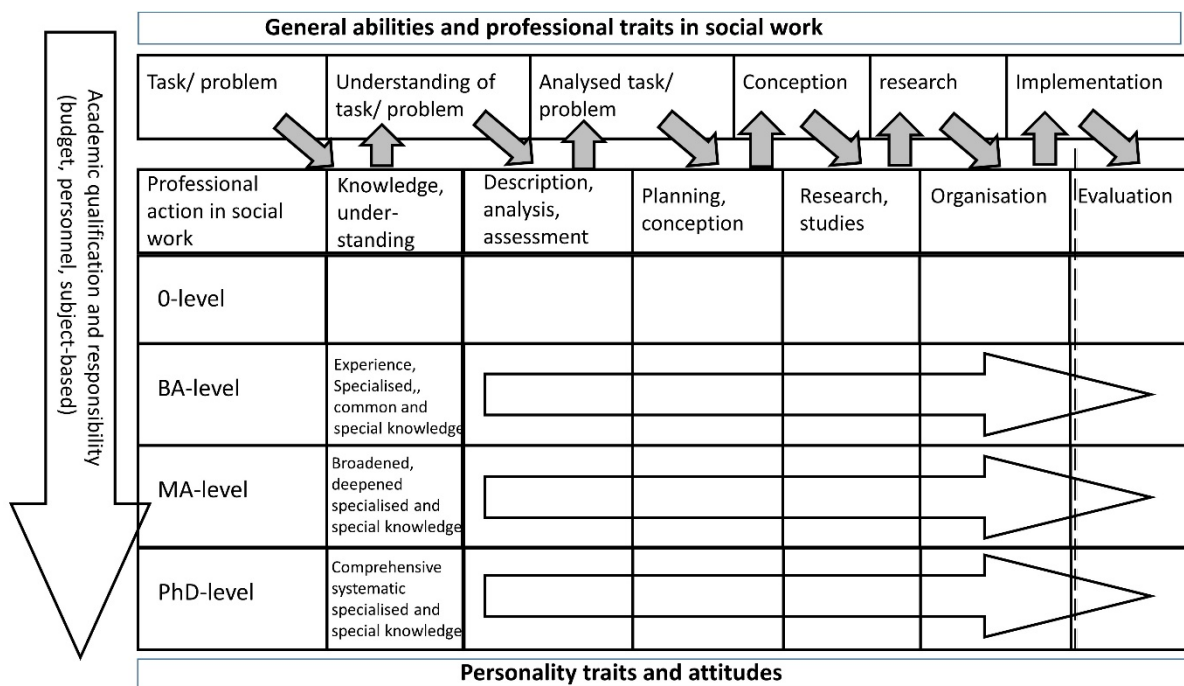


Figure 17: Structure of the QF social work (Bartosch et al. 2015, p. 10).

The QP can be visualised as a competence matrix in which its elements are entered. Each field collects typical descriptions of qualifications,

- which are expressed as a disposition towards active empowerment (competence orientation),
- are observable and testable in the situational management of requirements (performance)

⁸ Faculty council social work

⁹ Bartosch et al. (2008)

- indicate the level of the qualification in learning outcomes (descriptor) and
- can be regarded as the result of previous learning (learning outcome).

Qualification profile for a course of study

		A Knowledge/ understanding	B Assessment/ analysis	C conception	D studies/ research	E organisation/ implementation/ evaluation
Level Bachelor	Learning outcome					
	1		5	5	5	1
	2		6		6	2
	3				7	3
	4					4
Level Master	Learning outcome					
	1	5	5		5	5
	2	6	6		6	6
	3		7			7
	4					4

Figure 18: Qualifications frameworks/ profiles as action-oriented matrix (Bartosch et al. 2015, p. 11).

These individual elements (sub-competences) are target and reference points for each module. In describing learning outcomes at module level, reference is made to the conceptual vocabulary of knowledge and skills, abilities and capabilities, attitudes and personal characteristics, competence and qualifications, whether they are specialised or generic qualifications or competence. Descriptors are operationalised through separate subtle learning outcomes within modules. The learning outcomes of the modules refer to the higher-level learning outcomes (descriptors) of the qualification profile and are thus interrelated (see Fig. 19).

"The Dublin Descriptors thereby represent an agreement on what the academic levels Bachelors, Masters and Doctorate should mean across Europe. Descriptors are the broadest possible linguistic abstraction of individually concrete qualifications or elements of qualifications that can be assumed to be the results of concrete learning steps with concrete content and experience"¹⁰ The separate modules will define a specific selection of these elements as their own target points:

¹⁰ vgl. Nägeli 2004

Curriculum with modules:

M1	M2	M3	M4	M5	M6	1st semester
		M9				2nd semester
		M15				3rd semester
						4th semester
						5th semester
						6th semester

		Qualification profile for a course of study				
		A Knowledge/ understanding	B Assessment/ analysis	C conception	D studies/ research	E organisation/ implementation/ evaluation
Level Bachelor	Learning outcome					
	1	5	1	5	1	5
	2	6	2	6	2	6
	3	7	3	7	3	7
Level Master	Learning outcome					
	1	5	1	5	1	5
	2	6	2	6	2	6
	3	7	3	7	3	7

Module 15

Descriptors A2, A5
 Descriptors B3, B4
 Descriptors C1, C5
 Descriptors D3, D4
 Descriptors E1, E7

Figure 19: Modules in the context of descriptors

All descriptors of the QP are thus mapped in the entirety of its modules. In the module manual they are described in a more differentiated way than the learning outcomes¹¹, which correspond to the descriptor in the concrete module.

¹¹ Vgl. Adam 2004

Qualification profile and curriculum linked to modules and learning outcomes:

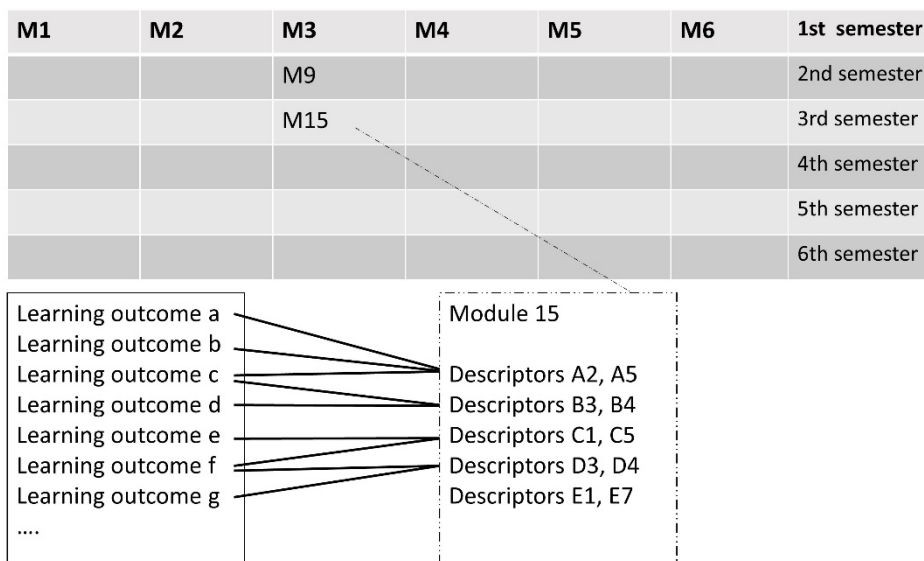


Figure 20: Learning outcome, module, descriptor interrelated

The descriptors are differentiated within the separate modules. This fine-tuning continues practically into the individual learning steps, but this is not formulated theoretically. We can now place the modules in their chronological order as defined in the study programme. We do this semester by semester and thus get six consecutive grids (for a 5 CP module with 6 fields, adding up to 30 CP per semester):

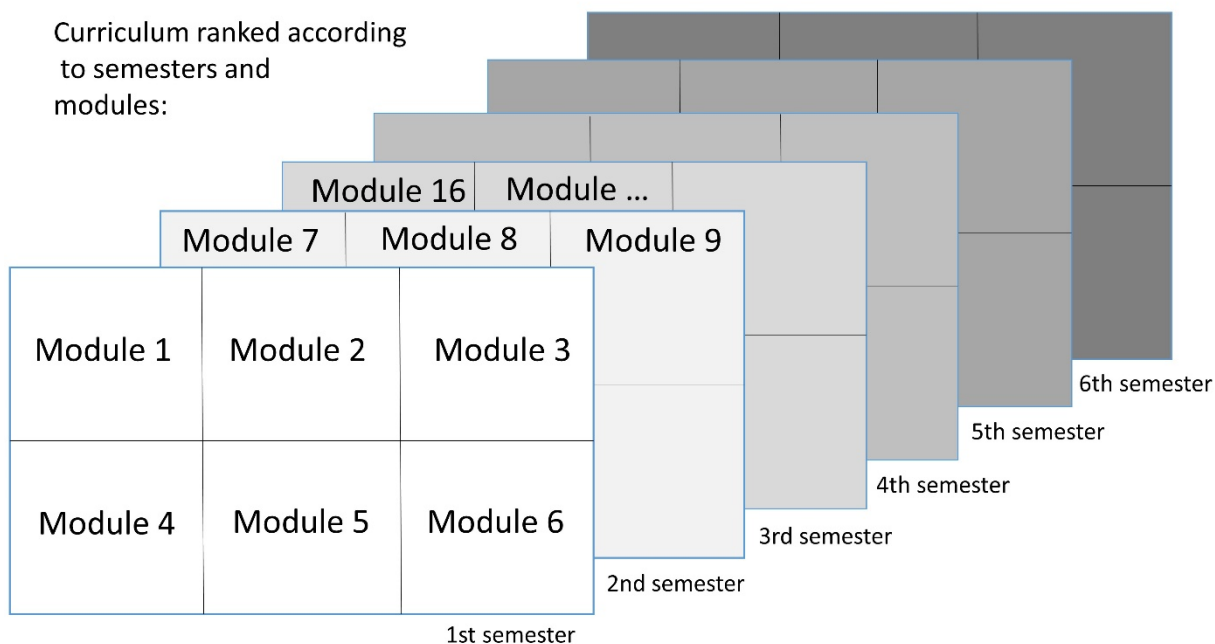


Figure 21: Modules in semester structure

Consequently, each semester can be expressed as specific progress in the formation of the targeted QP.

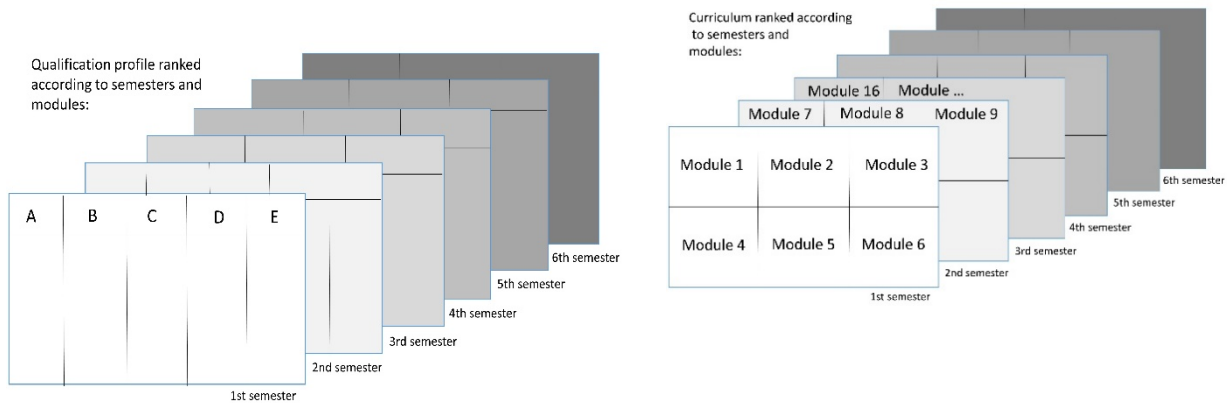


Figure 22: Semester as progress in the QP

It is now possible to compare the QP of the study programme as a target profile in the individual semesters to the sequence of its successful formation.

gradual completion of the qualification profile as the semesters progress:

A Knowledge/ understanding	B Assessment/ analysis	C conception	D studies/ research	E organisation/ implementation/ evaluation
LO 1 ★	LO 1 LO 5	LO 1 LO 5	LO 1 LO 5	LO 1 LO 5
LO 2	LO 2 ★ LO 6	LO 2 LO 6	LO 2 ★ LO 6	LO 2 LO 6
LO 3 ★	LO 3	LO 3 ★	LO 3 ★	LO 3 ★
LO 4	LO 4 ★	LO 4	LO 4	LO 4

Qualification profile in the 1st semester:
* = descriptors of the qualification profile fulfilled through learning outcomes of modules

gradual completion of the qualification profile as the semesters progress:

A Knowledge/ understanding	B Assessment/ analysis	C conception	D studies/ research	E organisation/ implementation/ evaluation
LO 1 ★	LO 1 ★ LO 5	LO 1 LO 5	LO 1 LO 5	LO 1 LO 5
LO 2 ★	LO 2 ★ LO 6	LO 2 LO 6	LO 2 ★ LO 6	LO 2 LO 6
LO 3 ★	LO 3 ★	LO 3 ★	LO 3 ★	LO 3 ★
LO 4 ★	LO 4 ★	LO 4 ★	LO 4 ★	LO 4 ★

Qualification profile in the 4th semester:
* = descriptors of the qualification profile fulfilled through learning outcomes of modules

Figure 23: Gradual completion of the QP over the study programme

This also makes the individual importance of the separate modules for the formation of the entire QP visible. Therefore, we are able to describe the desired qualification in adequate detail before the (individual) start of the course. This description does not refer to the content of the modules, but to the competence that the learner will have and demonstrate after successfully completing the module.

The aim and thus the end of the programme are apparent at the beginning. The gradual formation of the QP becomes as transparent as possible for all involved. This presentation is particularly important for the construction of the study programme and the question of recognition regarding existing qualifications of the prospective students. We will not go into this in more detail at this point and limit ourselves to the perspective of the module authors. First of all, we are interested in how exactly the individual module has to fit into the overall plan of the study programme".

5. Facilitating mobility- the design of academic recognition and recognition of prior learning

If the HQF is used for the structured, transparent overall presentation of the degree programme as described above, this facilitates the processes of academic recognition (credit transfer, e.g. with regard to study abroad) and recognition of prior learning (e.g. of professional experience). Decisions can be made more fairly, quickly and reliably. The premise for both types of recognition is the responsible assurance of academic success. Both procedures must realistically weigh up the fact that the successful completion of the chosen study programme must not be jeopardised by the integration of previous achievements. In other words: If external achievements are integrated into a study programme and replace its modules, then it must be guaranteed that the learning outcomes of the QP of the study programme have nevertheless been acquired overall at the end. This will be confirmed by the university upon request. Applicants save themselves the need to repeat learning processes whose results they already have at their disposal. Their overall study time should not be longer than necessary and should remain within the intended framework of credit points.

In the case of academic recognition, i.e. credit transfer, the study achievements submitted have been completed at another university. The comparison refers to academic education within the university system. It follows the guidelines of the Lisbon Convention. In international comparison, the QF-EHEA is the central reference, whereas the HQF is used within the German higher education system. Since the higher education origin of the submitted certificates of achievement is given, the recognition refers to the equivalence of achievements. The modules' learning outcomes and the associated workload are the relevant comparison parameters. They must point to the descriptors of the same level. In this way, achievements from the Bachelor's, Master's and PhD/doctoral levels can be mutually determined.

The contents of the modules are of secondary importance compared to the learning outcomes. Since there are subject-specific standards, they will not be arbitrary. It is possible, however, that specialisations here and there stand for different ways to meet the common standards.

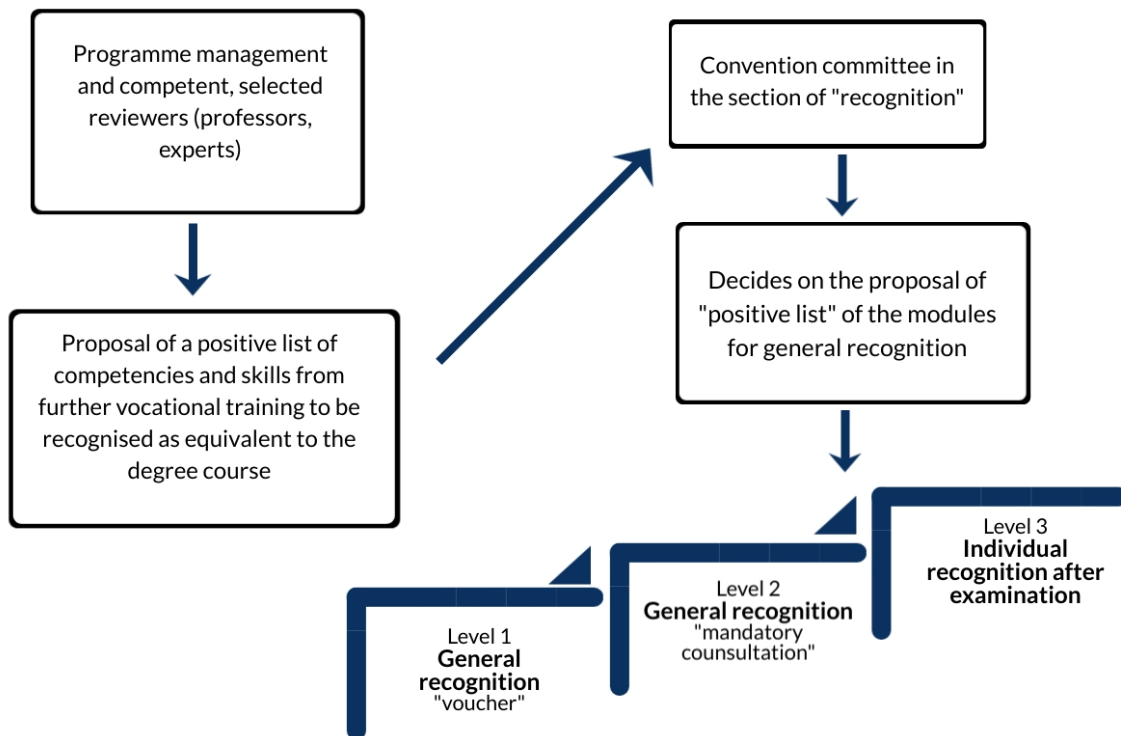


Figure 24: Proposal for a three-stage recognition system and decision-making process

In the case of recognition of prior learning, learning outcomes acquired outside the university are “imported” into the higher education system and then recognised as equivalent. This means that at the end of the study programme the QP of the study programme is confirmed as successfully achieved. Externally acquired learning outcomes are certified by the university as a suitable contribution to higher education qualifications beyond the higher education learning location. In the case of institutionalised, standardised recognition, learning outcomes from companies or vocational schools that have been achieved in the past are used for higher education processes. The decision of the university whether and when this is accepted must be transparent, plausible and, if necessary, also legally binding. This requires a clear localisation of the learning outcomes within the study programme, a quantitative assessment of their significance in the QP and a qualitative determination of their connection to learning pathways.

The question whether or not the actual success of the study programme is endangered, serves as a guideline for recognition decisions. Recognition is not a courtesy to an applicant. It requires a conscientious examination of whether the submitted certificates of achievement meet higher education requirements and whether they are sufficient as prerequisites for further studies. The university must therefore assess qualitative and quantitative risks. (In the following, the results of the LINAVO project are taken up)

In Germany, the potential share of external certificates of achievement recognised may amount to a maximum of 50 percent of the study achievements. For “flat-rate” recognition agreements, the academic requirements of the external partners must be met. The qualitative examination of external qualifications by the external partner must be ensured by the university. This requires an ongoing detailed insight into the educational organisation and quality assurance. Close organisational coordination is essential. It seems easier and quite appropriate to the university's own self-image to first check its own requirements in detail and to define them. This will make explain which learning outcomes - from the university's point of view - can in principle be achieved outside the university.

Two "risk assessments" can be made at module level:

Is the module in question, with its learning outcomes, necessarily tied to the learning location “university”, since the academic forms of teaching/learning form an absolute prerequisite? (quality of learning as higher education)

Are descriptors of the QP reached exclusively with the learning outcomes of this module and is there a risk that the Bachelor's or Master's certificate confirms important components of the QP although they are not present? (completeness control of qualification profile)

a): Qualitative risk assessment

Three options for the qualitative assessment of the module's learning outcomes are proposed to participants and those responsible for a module:

- Can this learning outcome reliably be acquired both through vocational experience and through teaching in schools?
- Can this learning outcome very likely be acquired either by vocational/ professional experience and/or by teaching in schools?
- Can this learning outcome reliably be acquired in the setting of research-based learning at the university only?

The individual learning outcomes are assessed with points. Thus, the module is assessed in its attachment to the university as a learning location and the support by university teachers as a didactic condition. This can be illustrated by a graphic. If all modules are characterised in this way, the competent body (e.g. the faculty council) can decide which modules of the programme are either approved in principle upon presentation of the relevant certificates of achievement, which ones can be approved on a case-by-case basis, and which one are not approved for recognition at all.

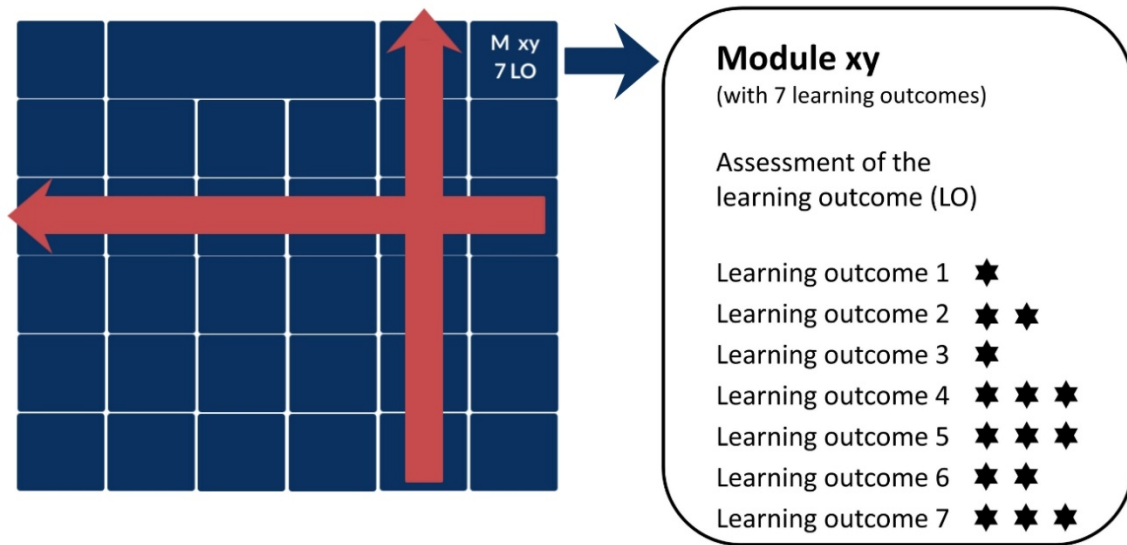


Figure 25: Qualitative assessment of the module

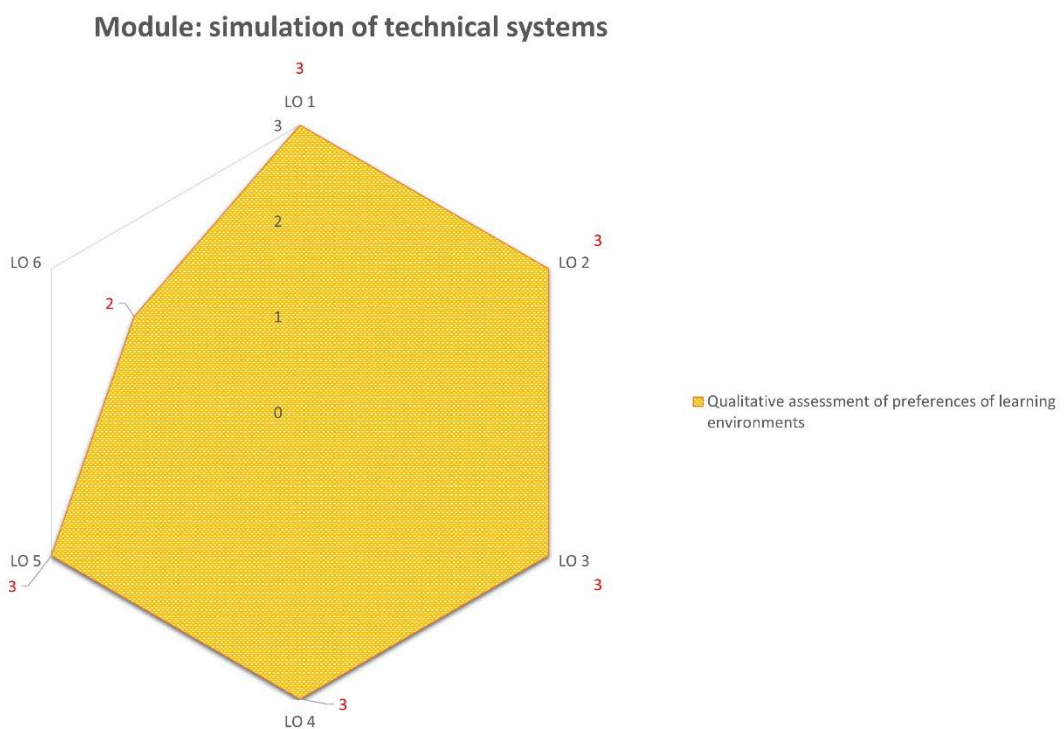


Figure 26: Exemplary graphical representation of the quantitative assessment of the module

b) Quantitative assessment

The persons responsible for a module are asked to assign the learning outcomes of the module to the descriptors of the QP. This creates a matrix showing how many learning outcomes 'allude' to a descriptor. This clarifies which modules are involved in the development of which descriptors of the QP and how extensively a descriptor is supported. Consequently, it is easy to show which descriptors will have no further (or only little) relevance in the study programme due to the recognition of a module. The competent committee can decide whether this risk must be avoided. If so, the module in question would not be approved for recognition or would not be validated by an examination, for example.

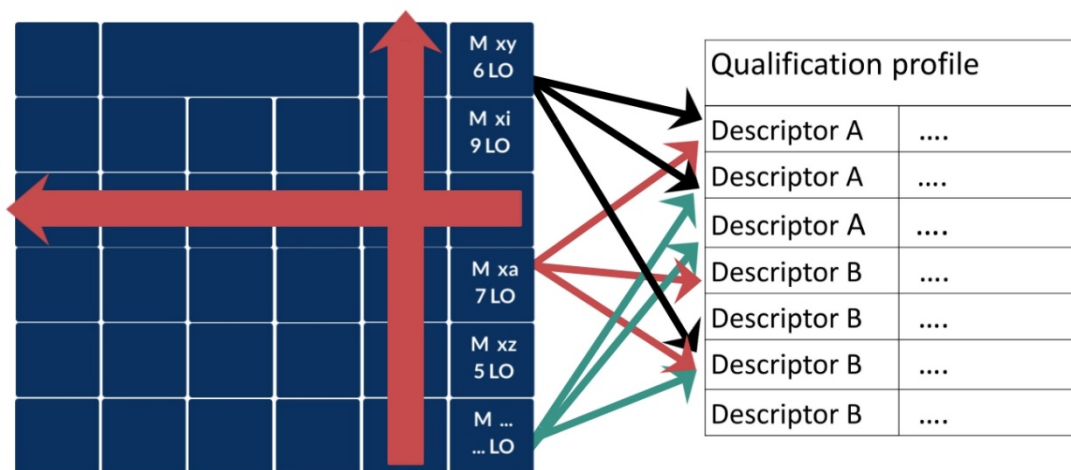


Figure 27: Quantitative assessment of the module

Module: simulation of technical systems, course of study: renewable energies

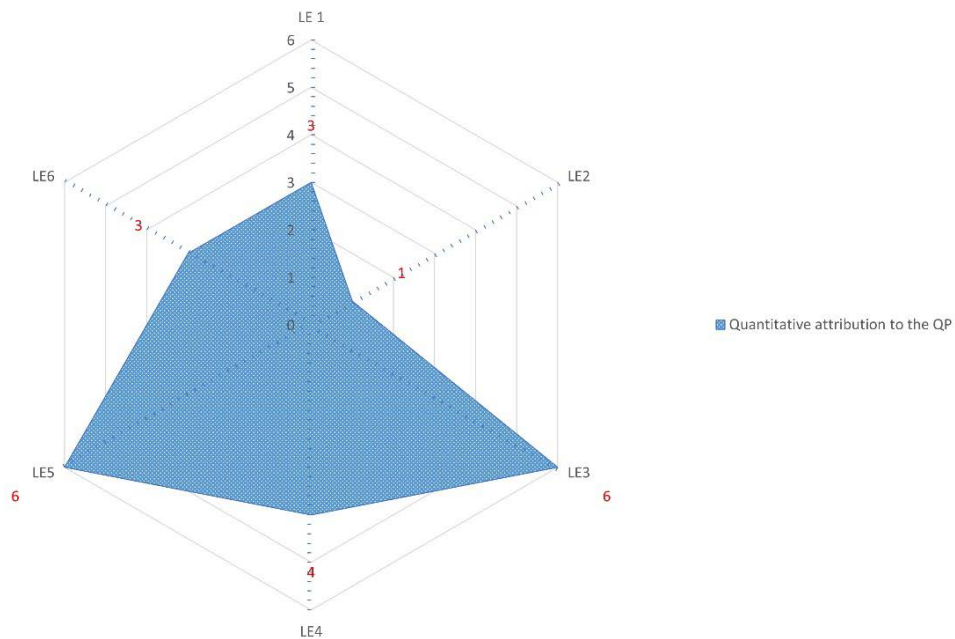


Figure 28: Exemplary graphical representation of the quantitative assessment of the module

Both assessments also give the applicant the opportunity to assess his/her own application. Ideally, he or she will be given the opportunity to test their competence in self-test tasks. In order to facilitate comparison and decision-making, instructions and forms can be used to provide a suitable description of the submitted achievements in relation to the intended study programme. The transparent overall presentation of the study programme provides a very good basis for this.

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