

Teacher Education For TVET In Europe And Asia: The Comprehensive Requirements

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Abstract

The training of teachers for vocational education and training (TVET) is a great challenge as numerous countries are not prepared for it. In many countries the opinion still prevails that practical knowledge and skills should be transferred by persons, e.g. skilled workers, with more know-how than the trainees. Therefore it is common practice that Level-3-students in vocational education and training are instructed by Level-4-graduates. Such approaches not only hamper professionalism but are also inefficient. Thus junior teachers are not adequately trained for the required levels. This paper therefore presents an approach for the training of TVET teachers which is based on a professionalized international level and is normally reserved for universities. A professionalized teacher training is based on standards for programmes, contents, and training facilities safeguarding an optimal training of the teaching staff. As teachers are the key persons for meeting the training standards, standards for teacher training must also be discussed. Their quality, their orientation, their design and the consequences for a successful implementation will be discussed. Furthermore it will be shown how standards must be configured in order to be accepted and pursued in a target oriented way by the industry, politics and the target groups themselves. The TT-TVET project will be referred to as well. Within the framework of this project the partners have developed transnational standards which have found utmost acceptance in the partner countries' own study courses for TVET teachers.

Keywords: TVET Teacher Training, Position, Comparative Study, New Role, Organization.

Introduction

International comparative studies in the field of school education have shown that the quality of a school decisively depends on the leadership qualifications of the school staff – teachers and school management.

The school personnel must be able to:

- Create a favourable learning environment and an attractive working atmosphere;
- Strengthen the feeling of togetherness within the staff and to form the team in a way that approaches to the aims, the profile and the program of the school are a common venture;
- Shape school as a learning organization, also in partnership with the parents and the school environment.

These are the decisive factors that constitute the success of the school.

The elite of the school staff should therefore excel by management skills and “leadership” (in the sense of a leading role) as these features are increasingly responsible for the success of a school. The staff must also consider the societal developments both within a national and international framework as it is their task to prepare their pupils for living and working after their graduation. And they have to keep in mind that schools will be ever more determined by the heterogeneity of all stakeholders (ethnic, social, cultural differences and specific stipulations of the individual federal states).

In the meantime many states agree on the fact that the traditional school system must be changed with the aim to assign more autonomy and self-reliance to the individual schools. This reorientation is regarded to be a decisive trigger for an improvement of school performance.

As for the emerging change of paradigms it is even more decisive to orient leaders-to-be students towards this range of tasks of a pedagogical leadership elite and to offer them opportunities to qualify and to make experiences in time along with their study course.

What is the Current Position of the (Vocational) Educational and Training (VET) System?

The current discussion of education and vocational education can be summarized by the following statements:

- After the end of the Fordist era, schools no longer adequately fulfil their task as suppliers for the national employment system.
- The insufficient organisation, equipment and quality of the vocational educational system threaten the coherence of the system. This will have a considerable impact on social development processes.

Modern companies have only little in common with the structures relevant 20 years ago. Customized solutions, goods and services for the specific requirements of the customers combined with high quality have taken the place of mass production. These challenges call for the qualification and motivation of employees who should have – according to Reich – four basic skills: System thinking, abstraction, experimenting, cooperation (cf. Reich 1993, p. 256). This, however, cannot be achieved within an educational system which still functions and which is still organized according to a Fordist mass production:

- Teachers are working within strict standards; they have no or just little room for their own decisions (regularization!).
- Schools are organized based on a division of labour and train their students for the traditional hierarchical structures.
- Schools are still embedded in a centralized state hierarchy, they work according to decreed curricula, they adhere to a strong atomisation of the subjects and they do not participate in innovation processes (bureaucratic-centralistic organisation).
- There is a gap between the need for qualification and the developed qualificational profiles.

At the moment we are in the midst of an industrial and social change leading to a new tense relationship between the educational and the employment system. The necessity to ease this tension could be made use of by vocational schools to establish the as a central dimension of vocational education.

Development of a shaping competency for professional life and society

The shaping of the work place, of corporate structures, of cooperation, technology, a human-centred society with an ecologic orientation, of the use of ICT, of learning processes ... are dimensions which cannot be developed within a traditionally organised school system or frontal instruction.

The answer to these challenges cannot be found in the frequently stated demand for “individual flexibility”. The structural problems of the educational and employment systems cannot be solved in this way.

Decentralisation towards more autonomy has been an ongoing discussion. Since the emergence of TVET systems it is being discussed whether the qualification for the labour market within this system should not rather be carried through under the auspices of industry, economy, and trade.

Hartmut von Hentig, the famous and internationally well-known educational visionary who is convinced of the highest importance of school education, published a most astonishing statement a few years ago:

“The state-run compulsory school should hand over what it cannot provide: the optimal preparation for the labour market. Instead the economy could take over the part of the school work which is important for life and work practice. The personal and the political education would then remain the prerogative of the school.” (Hentig 2004).

Hartmut von Hentig thus clearly contradicts the “precautional pedagogy” presently predominant in Europe as it cannot cater for the requirements of economy!

In short this statement by Hentig implies the following for the TVET system:

- A good bye from the pedagogical “doll’s house” with its capricious charm,
- The shifting of the responsibility for training to the economy,
- A remodelling of the school towards more responsibility.

Hentig underpins this visionary proposal with the fact that the school is as distant to the life reality of its pupils as ever.

Education (personal development, citizenship, participating in the cultural life) is therefore a task for the school as traditionally practised. The preparation for the life reality

in the sense of an occupation, however, is the responsibility of the economy. This position of points must be further discussed and clarified.

Germany for example reacted to the challenge of the economy with a number of pilot projects such as RBZ, ProReKo, STEBS, ReBIZ etc. in order to pave the way towards more autonomy, more responsibility of the schools.

The schools are thus granted

- an autonomous financial administration/ management,
- an autonomous recruitment of personnel and administration, as well as
- contract management,
- supervising tasks,
- decision making on occupational training courses.

In the sense of educational politics this is regarded as a “change of paradigms” which is appraised in different ways:

1. One group is convinced that this is a development towards streamlining the educational system for the world market as required by the World Trade Organisation. They fear that this may result in a “lean” and rationalized school which is only assessed according to its economically set “output” compared to the given “input”.
2. A second group supports this development because they wish to have
 - more autonomy, more self-determination but also
 - more co-shaping and no patronizing by the state.

This is an unambiguous conflict which will not be easily neutralized.

More autonomy, more self-determination for schools is therefore a compromise. With a view to the VET system, Hentig therefore postulates the separation of education and qualification.

The response of the TVET system is to reach

- a high self-determination,
- more autonomy and above all
- legal capacity.

In order to abolish the pedagogical doll’s house, a **work oriented vocational education** must be the centre of interest. This results in the hypothesis:

The VET system must be oriented towards a work oriented education focussing on shaping competencies and supporting an ecological orientation of values.

This demand can be met by an education accounted for by educational institutions. The state as a producer of education is no longer required ... this was true for the 19th century.

With a view to school organisation, the process of decentralisation and privatisation in selected countries can be identified in very different ways (cf. Bennet 2003) (Figure 1):

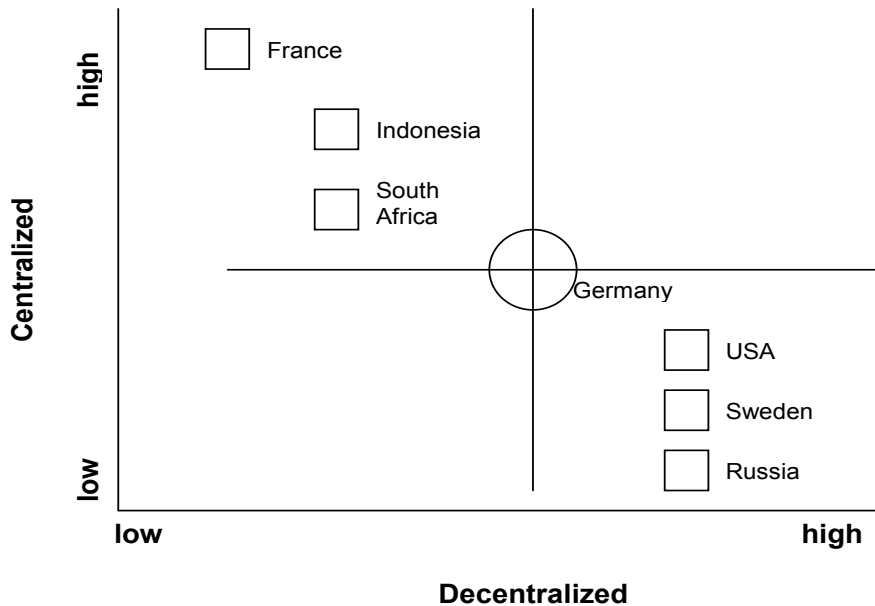


Figure 1: Decentralized status of TVET systems in selected countries.

Germany currently ranks in a medium position with a development towards a decentralized system which is, however, not likely to be privatised. Decentralisation – and partly privatisation – plays a more important role in the USA, in Sweden and in Russia, whereas France, Indonesia and South Africa as rather located at the opposite side of the scheme, i.e. they have a high centralisation.

A. The New Role of the Teachers in Autonomous VET Organisations

What is the most important skill a teacher must have? He or she must be able to teach teaching!

He or she must fancy his or her students, he or she must identify himself or herself with the school, he or she must be able to work under psychological pressure and should be curious!

Apart from this – and this is more or less self explanatory – a teacher must be:

- a social worker,
- a psychologist,
- a mediator,
- a communicator,
- a team worker,
- an expert,
- a “knowledge networker”.

He or she must also be able to get acquainted with new subjects, to access new subjects, to work with different target groups and above all he or she must have a lot of empathy and intuition.

This short sketch already proves that teachers must be creative and that they need the appropriate space for this. They do not have to be experts for everything but a certain assessment of the competencies of students and teachers should be safeguarded. This is important to ask colleagues for advice in time if certain challenges arise. On the other hand teachers must be able to step back in order to promote autonomous learning in students. Teachers thus take over the role of a monitor or advisor. This, however, implies a repertoire of methods which has to be applied inconspicuously but at the same time in a target oriented way. Teachers thus have to acquire considerable abilities.

B. A Future Oriented Characterization of Tasks for Teachers

- Teachers work with progressive tuition concepts, promote the students in all competency dimensions and enable them to acquire sustainable knowledge.
- Teachers develop the readiness for life-long learning. Firstly they cannot be prepared for every kind of situation during their occupational career. Secondly the economic and social conditions are swiftly changing.
- Teachers co-shape the development of schools and the comprehensive process of restructurisation in vocational schools in terms of concepts, curricula and organisation.

With regard to the subject oriented implementation it is planned that the learning process as a starting point for theoretical reflection focuses on the subjectively experienced practice. This means in more detail (cf. Figure 2):

- the young teachers become aware of their subjective concept,
- the young teachers learn a lot of different modes of acting and try them out in practice,
- the young teachers are given instruments for the reflection of practical instruction in a context of theory and of the own person.

Young teachers should be given a lot of opportunities to co-shape their training according to their experience and the needs resulting thereof.

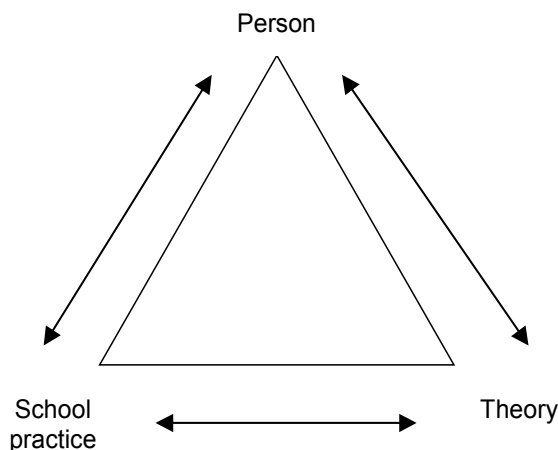


Figure 2: Relation between theory – person – school practice.

It is a fruitful perspective to describe quality management of instruction by shapable elements which first and foremost concentrate on an improvement of instruction quality and then assess what has been reached (criteria). The following central elements must be taken into consideration (cf. Figure 3):

- The changed role of the teacher;
- The changed methods of instruction;
- The development logical structurization of instruction contents;
- The changed shaping of the learning environment and the shaping of framework conditions.

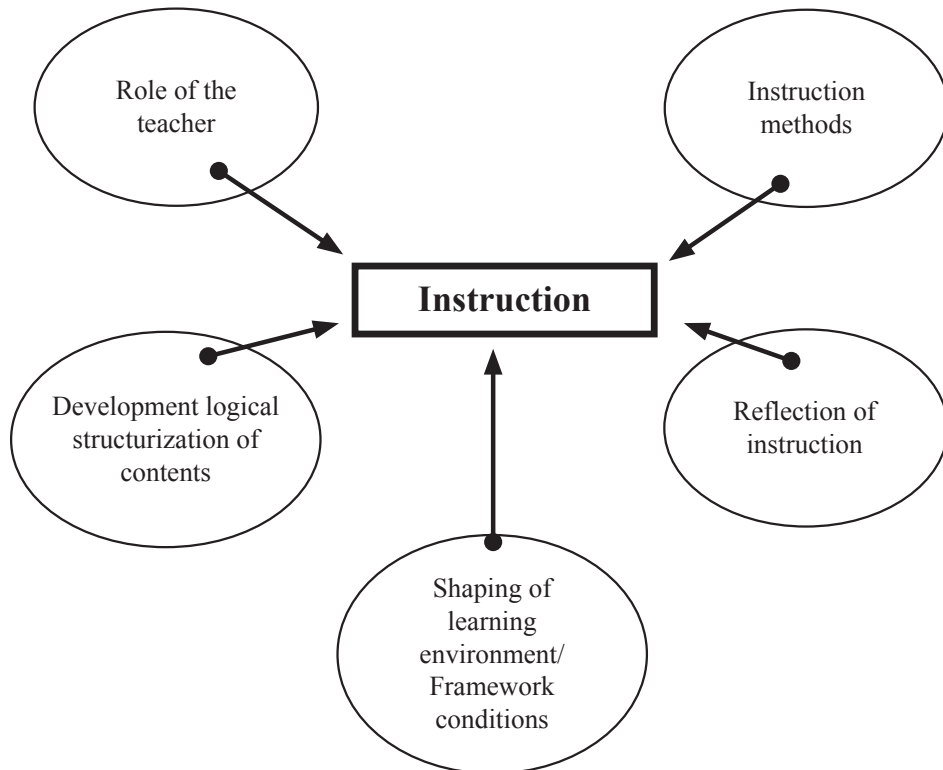


Figure 3. Elements for the shaping of a quality management for instruction

For each of these elements it is recommended to set up a systematic description which is based on the current status at schools and which then allows for the description of necessary measures for the shaping of the role of the teachers.

As an example, the table below gives characteristics which promote a new learning culture triggered by a changed role of the teacher. Adequate measures must then be developed on site (cf. Table 1).

Table 1: Change of roles of the teacher for the realization of an “open learning culture“

Old role of teachers	New role of teachers
Works alone	Works in a team
Structures the learning processes according to time targets	Structures the learning processes in a task and project oriented way
Assigns marks based on facts	Assesses based on development and results
Instructs the students and imparts fact knowledge	Advises the students during their work on tasks and their solving of problems
Coordinates his/her work with the dual partner	Co-shapes training modules with dual partner and involves him/her into the instruction projects
Shapes instruction space	Shapes open instruction spaces
Develops teaching material	Develops equipment concepts
Determines the learning pace	Safeguards individual learning pace of students
Is geared to specialized theory and specialised sciences	Is geared to work and business processes and vocational educational sciences
Imparts occupationally oriented theory	Imparts occupationally oriented contents of skilled work (subjects, tools, methods, organisation and requirements for skilled work and technology
Develops theme oriented tasks and confronts students with professional problems	Develops occupationally oriented tasks and confronts students with occupational problems
Considers a differentiation of performance by the grade of difficulty of the tasks	Considers a differentiation of performance by multi-dimensionality and complexity of occupational challenges
Develops his/her knowledge with the aid of books and theme oriented seminars and further training courses	Develops his/her knowledge by continuous learning and scientific approaches to occupational challenges
Determines the work and learning methods	Offers work and learning methods
Is responsible for the learning paths and assigns the responsibility for the learning result to the student	Determines the learning result with the students and assigns them the responsibility for the learning paths
Takes occupational experiences of the pupils for granted	Involves the occupational experiences of the pupils into instruction
Is a teacher for <i>his or her</i> subjects and organises instruction according to them	Interlinks his/her and other subjects with the subjects of colleagues in a comprehensive instruction

The following recommendations can be applied of for the element “reflection in instruction”:

With regard to the teachers:

The continuous application of procedures should be considered in order to adequately reflect the implemented instruction projects. These procedures are oriented to an optimisation of the subsequent instruction or a repetition of the instruction project and are not meant to assess the performance of teachers (sanction-free space).

These reflection phases are adequately facilitated and documented with their results (safeguarding of accountability with regard to the realisation as a quality promoting measure).

With regard to the students:

Some of the possible reflection criteria:

- Moderated reflection phases at the end of each instruction unit which are designed in a way that to allow for both the reflection of the individual performance and the performance of the working group as well as for the performance of the entire group (class);
- Also a reflection of the acting of the teaching team or the involved teachers respectively;
- Results from these reflection phases which are documented in a way (as a personal continuous process of improvement) that they can be taken into account during the following instruction phase;
- A lived agreement that these reflection phases should serve to improve the learning culture, the learning performance, the working climate etc. rather than to assign marks or to up- and downgrade students or to replace teachers (space with little sanctions).

C. Standards – an Instrument to Enhance the Quality of Teacher Training

Educational standards (in a narrow sense) usually are used for three purposes. One purpose is to define the quality of education. i.e. what should be achieved by the learner in the educational process. The second one is to guide the development of curricula including the selection of content and methodologies. The third purpose is their application for assessment, i.e. to check whether the educational programme provides the intended results or whether the learners performed sufficiently. The third purpose implies that standards have to be formulated so as to be measurable.

Standards in the field of education have a long tradition in many countries although they are partly differing to a great extent. An analysis of international experiences in this regard shows that standards are basically derived from competency models. Such a model has been sketched below and reveals ideas of a learning culture forming the core of the standards for Teacher Training in TVET.

The international literature agrees on the fact that standards should determine in which learning areas and fields of a subject competencies should be developed in the long term. An evaluation of international literature results in the following “tasks” of standards:

- Standards should determine which competencies should be acquired at a certain time,
- Standards should be oriented to a core area of a domain (specialist and/or learning area),

- Standards should be structured by so-called competency models,
- Standards should describe competencies which can basically be recorded by testing procedures.

Based on these reflexions, the project members have formulated quality standards on two levels:

1. For the training of teachers with a view on their field of activity.
2. For the domain, the subject and/or the learning area.

The standards are designed in a way that they describe competencies. At the same time it is ensured that there will be a competency development rather than an output orientation for “teaching to the test”.

Thus it is basically important to safeguard the quality. This is why the process orientation of standards moves into the centre of the reflexions. From an overall perspective, the standards should help to meet the following three criteria:

1. Standards should be used for quality development in the TVET teacher education courses at the participating institutions. This includes the development of the institutions themselves, the development of teaching personnel (lecturers, professors) as well as the curricula used and the learning opportunities for the students. The term “quality” has to be defined by means of the standards.
2. Standards are needed as a basis for the creation of transnational degree programmes. Each of the participating institutions need to rely on the other institutions providing with their study courses a certain standard of quality, contents, and learning environment to the students.
3. Standards can also be used as a basis for mutual recognition of study achievements between the participating institutions. In Germany, in former times, instead of standards a list of contents combined with an implicit understanding of quality was used for this purpose, but if there are defined standards available it might be better to use them.

The following advantages of standards for TVET Teacher Training have been identified:

- Standards may provide clear descriptions of TEVT-teachers’ core activities and their actual contents in order to identify the teachers’ strength and weaknesses.
- Standards may provide guidelines for the professional development of the teaching profession by implementing reasonable policies.
- Standards may help to optimise teacher training by adjusting and modernizing pre- and in-service training contents and forms.
- Standards may provide a scientific, justified and effective basis for accreditation of achievement and assessment of teaching performance.
- Standards may provide a platform for international communication.

In addition to these advantages it is being expected that standards exert a positive influence on the quality of teaching and teachers’ education:

- Standards may provide a larger scope of the teachers’ choices, flexibility and responsibilities.
- Standards may enhance the process of teachers’ professionalisation.
- Standards may enhance the implementation of modular, workplace- and performance-oriented curricula and education of teachers.

- Standards may close the gap between pre- and in-service teacher training.
- Standards may help to establish a flexible and coherent TVET Teacher Training System by combining and accrediting different individual access, pathways and levels of qualification.

1. Background for Standards: Occupational Profile for Teaching Staff

Standards for teacher training are the blueprints by which a country designs the type of nation it wants to be. Programme accreditation is the means by which achievement is assured. As such, these academic standards are of fundamental importance. In the case of a mature and complex higher education sector, the responsibility for setting programme standards will be shared among relevant stakeholder groups (governments; professional bodies; independent quality agencies; universities themselves, the public media etc.).

Along with the standards for teacher training requirements are formulated which have to be met by teachers. Educational and pedagogic objectives play a central role. The following professional profile meets these goals with respect to schools:

1. *Teachers are experts for teaching and learning.* Their core tasks are the target oriented and scientifically sound planning, organisation and reflexion of teaching and learning processes as well as their individual assessment and systemic evaluation. The professional quality of teachers is measured by the quality of their instruction.
2. *Teachers are aware* that their *educational task* at the school is closely linked to instruction and the school life. This is the more successful the closer the cooperation with parents is encouraged. Both sides must come to an agreement and should both be prepared to find constructive solutions for emerging educational problems or failing learning processes.
3. *Teachers carry out their assessment and counselling tasks* during instruction and in a competent, just and responsible way. Advanced pedagogical-psychological and diagnostic competencies of teachers are crucial for these tasks.
4. *Teachers continuously develop their competencies* and – like any other professional group – make use of further and continuous training offers in order to consider the new developments and scientific findings of their profession. In addition teachers should always maintain contacts to external institutions and to the world of work.
5. *Teachers participate in school development*, in shaping a school culture suitable to enhance learning and to create a motivating school climate. This also includes the willingness to participate in external evaluations.

2. Competency Areas and Emphases of Teacher Training

Standards in teacher training describe the requirements for the acting of teachers. They refer to the competencies and thus to the abilities, the skills and the attitudes of teachers to cope with their professional tasks.

The targeted competencies trigger requirements for the entire training phase and the professional practice.

The *educational sciences* are a basic prerequisite for the acquisition of competencies for vocational education. They encompass the scientific disciplines which deal with the

educational and pedagogical processes, with educational systems, the practice of vocational training as well as with the respective framework conditions.

The formulation of competencies and standards for educational sciences takes into consideration that education, instruction and learning in the world of work are closely linked to specialist contents.

The curricular emphases of the educational sciences during teacher training are:

- a) Scientific qualification in a specialist science;
- b) Vocational educational qualification in the fields of
 - Education and pedagogics
Justification and reflexion of education and pedagogics in institutional processes.
 - Profession and role of the teacher
Professionalisation of teachers; dealing with conflicts and decision making situations linked to the profession.
 - Didactics and methodology
Design of instruction and learning environments.
 - Learning, development and socialisation
Learning processes of young people in school and in companies.
 - Motivation for performance and learning
Motivational basics of the development of performance and competencies.
 - Differentiation, integration, promotion
Heterogeneity and variety of conditions in schools and companies.
 - Diagnostics, assessment and counselling
Diagnosis and support of individual learning processes; performance measurement and assessment of performance.
 - Communication
Communication, interaction and conflict management as basic elements of teaching and education.
 - Media education
Handling of media in terms of concepts, didactics, and practical aspects.
 - School development
History of the educational system; structures and development of the educational system and the development of the individual school.
 - Educational research
Aims and methods of educational research; interpretation and application of the results.

3. Alternative Approaches to “Standards“

In its examination of the alternative approaches to using standards in higher education the TT-TVET project has paid attention to two main approaches to setting standards and to working with standards:

- a) **Closed and static standards** regulate the frameworks, the inputs and outputs. Thus, they leave the starting positions and the developmental processes out of scope. In general, such standards are used by external bodies that control the compliance of diverse programmes with the given standards.

- b) **Open and dynamic standards** ground the standard-setting in developmental processes which guide the change from the current situation to the desired situation. In this context the measures are to be analysed and interpreted as ‘standards’. Thus, the approach takes into account the diversity of starting positions and the developmental steps.

The TT-TVET project has considered it more appropriate for its purposes to follow the latter approach that is based on parallel work with quality indicators for the development of TVET.

4. From Quality Indicators to Open and Dynamic Standards

The related **standard** describes the measures that are suitable to promote the change from the actual situation to the target situation. The clear addressee of the change in the named quality area is the teacher even if the necessary changes in the implementation certainly entail changes in other quality areas. Therefore standards are described in a way to clearly show which changes should be envisaged in terms of a quality improvement. Standards are, however, no curricula – the latter are developed based on standards. Nevertheless they must name both the change processes and the targeted learning result.

The open and dynamic approach: The **current situation** is determined in the respective VET institution and results from a key question, an event or an identified problem. The decisions for the **target situation** have to be taken transparently by the project partners and are either based on results of teaching and learning research or on normative societal requirements. **Standards** are defined by the requirements for changes towards the target situation. They describe appropriate measures presumed to help to reach the desired target situation.

The measures are formulated in a way that it is possible to assess whether they are applied or whether the competences exist to apply them, respectively. Table 2 illustrates the open and dynamic approach to standards.

Table 2. Example for a quality indicator oriented to changes (based on Becker/ Spöttl/ Dreher 2003)

Quality area: role of lecturers and teachers		
Quality Indicator	Appropriate Measures (Standards)	
Example for the actual situation (current situation)	Possible role of lecturers and teachers (target situation)	
The teacher elaborates topic-related tasks and confronts the students with technical problems	The teacher elaborates profession-related tasks and confronts the student with vocational problems	The teacher elaborates a teaching structure with focus on the operating process elaborates professional tasks, that can be assigned to the curriculum and prepares them didactically as learning and working tasks applies learning and working tasks in the teaching/ learning contexts

D. Guidelines for Teacher Training in TVET

1. It is necessary to develop standards for teacher training which describe the required competencies to be acquired during the study course. The study course has to be linked to practical training phases. The teacher training must be shaped in a competency oriented way. In order to reliably coordinate this requirement, the performance of the partner institutes participating in teacher training must be fine tuned.
2. The quality of teacher training exerts a major influence on the quality of the young persons to be trained and on the sound development of democratic societies. It is therefore recommended to implement the teacher training at universities by all means. The teacher profiles must not be determined too narrowly. They must not only concentrate on instruction but have to focus on the development of schools as a whole and must concentrate on the industrial challenges as contents of training.
3. During the teacher training for TVET the following statements have to be realized:
 - The studies and/or the internal structure of the studies must be safeguarded by linking specialized scientific, specialized didactical, pedagogical scientific and social scientific as well as school practical training elements.
 - The training must be differentiated according to the various kinds of teachers (e.g. for primary level, secondary level, vocational training etc.).
 - The teacher training shall be integrated in academic Bachelor and Master studies.
 - The scientific character of teacher training must be ensured. The training must include the ability to carry through scientific studies such as research on training and empirical instruction.
 - The professionalism of teacher training must be underpinned by standards for specialized didactics, the specialized sciences (= vocational sciences) and educational sciences.
 - Guidelines for the profession of a teacher are to be formulated.
 - The polyvalent character of teacher training must be ensured.
 - The role of the state has to be clarified and the way the state takes over the responsibility for the quality of teacher training and of the respective accreditation processes.
 - New forms of teaching and learning for teacher training have to be developed.
 - Universities ensure the competency for entering an occupation, i.e. the first step of a long-term process of the development of the ability to work in an occupation, professionalisation and the regular further training of the staff which has to be supported by the schools.

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