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# Standards – an instrument to enhance the quality of TVET teacher training

## Abstract

Standards with a focus on learning and supporting measurable learning processes including their outcome have been under discussion since several decades. In the last two decades more and more standards have been discussed for teacher training for technical education and vocational education and training. Teachers in this area are facing a bunch of challenges worldwide. The reasons for this vary from country to country because of the very different approaches and organization models of teacher training for technical education and vocational training. This situation has prompted some planners to creating standards for whole regions such as Asia, Europe, the United States and so on. This approach is not followed in this article. The concept of standards demonstrated in this article concentrates on teacher training in technical education with a clear link to scientific disciplines at university level in individual countries. Additionally the concept of standards follows a dynamic approach which allows teachers to specify standards for the requirements of quality indicators. Via a bottom-up approach, this concept can be developed for a whole study programme and the quality indicators could be compared between countries and regions.

***Keywords:*** *Quality, Quality Assurance, Competence; Learning; Shaping of Standards, Dynamic Standards, Roles of Teachers*

## 1 Introduction

In Technical Vocational Education and Training (TVET) standards (in a narrow sense) are usually applied for four 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 to define the quality of teacher training programmes.
- The fourth 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 fourth purpose implies that standards have to be formulated so as to be measurable.

In the article standards for TVET teacher training, the requirements, and the framework for it will be discussed. A model will be shown how to shape them in a way that learning results can be determined.

## 2 The role of standards

Standards have been intensively discussed since several years. The respective literature concentrates above all on educational standards (Department of Education UK 2013; Spöttl & Becker 2013; Göldi 2011; Becker, Spöttl & Blings 2007, 89 ff.) that first and foremost describe competences in a subject or learning field. Klieme et al. (2003) have drafted an elaborate systematic of national educational standards encompassing

- educational goals,
- competence concepts,
- competence models and
- verification of competences.

The authors understand educational standards as defined requirements for teaching and learning at school. They formulate goals for pedagogical work, expressed by desired learning outcomes for pupils. Thus standards concretize the educational mandate that schools have to accomplish.

Educational standards determine which competences the students must have developed if important goals of schools should be considered achieved. These requirements are systematically assessed in competence step models illustrating the aspects, the grading, and the development trajectories of competences.

The most important reason for the difference between vocational and general education is the fact that vocational initial and further training concentrates on acting in complex learning and work situations and work processes and that the ability to act in a self-organized way is being highlighted. This is why a broader comprehension of standards is necessary.

Along with the idea that standards should provide a frame of reference for high quality, more parameters are emerging with regard to the vocational educational system which eventually will have a considerable impact on quality development and quality assurance, such as:

- vocational occupational profiles, training and task profiles;
- profiles of teachers and trainers;
- the duration of vocational education and training;
- requirements for exams;
- entry prerequisites;
- curricula (contents, structure, level);
- methods and learning targets and
- the qualification levels of the trainees.

Standards – and this must be emphasized – neither replace curricula nor didactical and methodological approaches and learning concepts. They must be understood as an orientation for more objectives that are described and specified in detail in curricula and other ordinances. Standards should provide the central orientation framework for the respective quality demands for target groups and learning environments (Windelband, Spöttl & Becker 2014, 302).

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 (Spöttl 2009, 20 ff.):

- 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, quality standards have to be formulated 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 (Spöttl 2009, 21f):

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.

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.

## 3 Background to standards: Profile for teaching staff

Standards for teacher training are the blueprints by which a country designs the type of nation it wants to be (Soysouvanh 2013). 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 (Spöttl & Becker 2012):

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 they 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.

The important role of teachers and trainers is highly supported by the new skill agenda of the European Commission under the topic "Modernisation Efforts" (COM 2016).

## 4 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 *vocational educational sciences* are a basic prerequisite for the acquisition of competencies for vocational education. They encompass the vocational 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 vocational education 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) Vocational scientific qualification in a vocational discipline;

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.
- Vocational Educational research
  Aims and methods of educational research; interpretation and application of the results.

Using standards in the education of teachers for technical education and vocational training means to ensure scientific quality in all fields of teacher training.

## 5 From quality indicators to open and dynamic standards[i]

The related *standards for TVET* teacher training describe 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 different 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 standards must name both the change processes and the targeted learning result. This requires an open and dynamic approach.

The *current situation* is determined in the respective VET institutions 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.

### 5.1 Quality areas and quality characteristics for the indication of changes

Quality areas mostly serve to name the characteristics for the processes, the results and the impact of educational measures which exert an influence on quality and to join their forces. (With reference to Altrichter and Posch (1990), these are named input, process and output/ outcome qualities in most of the quality management systems for schools.) A considerable disadvantage of this structurization is the fact that a lot of focus is laid on the determination of a certain grade of quality for each named characteristic and that the acting persons in schools cannot clearly determine what has to be done in order to achieve an increase of quality. For example in the actual debate about quality indicators on international level the following definition of this term is used, which focus only on a state without respecting the need for developments and shaping measures: *Indicator: "Quantitative and/or qualitative phenomenon measured and assessed"* (CEDEFOP 2011) *or Quality Indicator: "Formally recognised figures or ratios which are used as yardsticks to judge and assess quality performance"* (ib.). These assumptions about quality indicators are undoubtedly not enough to be able to support the quality of learning. In order to promote quality during the learning process via adequate shaping measures it is not sufficient to consider only the formal framework conditions.

Therefore quality characteristics are developed in the course of the Leonardo da Vinci project QualiVET (Nationale Agentur 2007) aiming at the change, the improvement and the shaping of "quality" with a focus on quality of the learning process. Characteristics and quality areas are defined in a way that they do not focus on the detectability and the measurability of a condition but that the changeability and the shaping of a discrepancy between the actual situation and the target state should be in the centre of interest. This becomes obvious with the denomination of the quality areas. Some key examples of quality areas are mentioned in Figure 1 as a result of the QualiVET project. It might be possible to identify some more quality areas via an empirical process. The further discussion in this article will focus on quality area 1 – trainers and teachers.

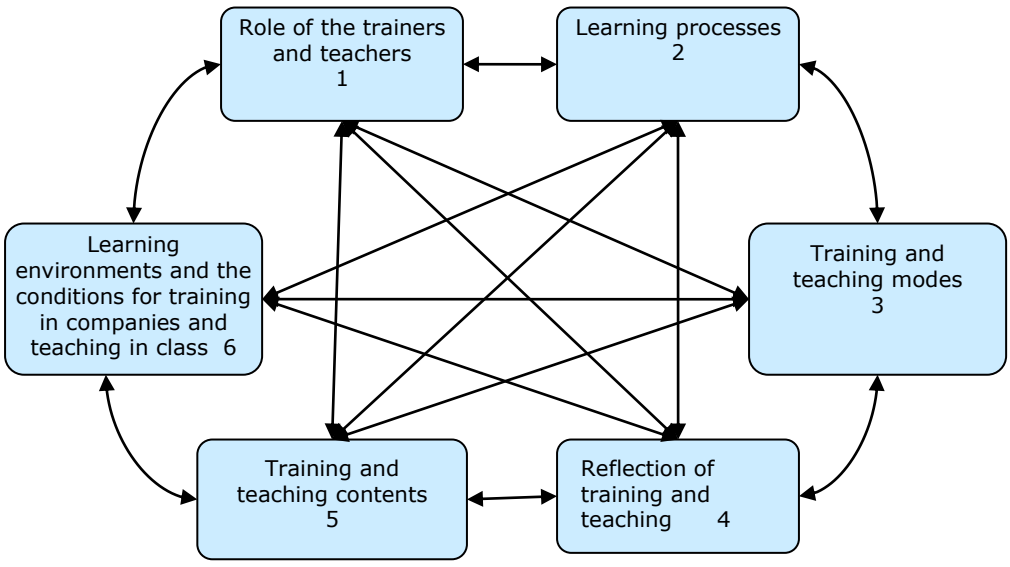


Figure 1: Quality areas in QualiVET

The list in Table 1 shows the general understanding of quality terminology the authors are using. This fundamental quality terminology is applied to the subject "shaping" of the above named quality areas and the focus is "the process of change". Each change of the mentioned quality areas is linked with interdependencies in other areas (see Figure 1). For example: If an instruction mode is changed, this entails different learning processes. In spite of the interdependencies characteristics – i.e. shapeable characteristics – can be named which especially aim at changing a certain aspect of the quality area.

With regard to the terminology of the quality terms we rely on the fundamental definitions in Table 1 – applied to actions for improvement. In a sense of focus on shaping and changeability we will use the term *shaping oriented quality indicator* for characteristics giving indications to changeable areas. The term indicator is of Latin origin (indicare) and means „show", „specify" and even „give away". Thus an indicator shows or gives away something. The origin of the word clearly underlines that an indicator shows something that is not obvious at first sight (Windelband & Spöttl 2003, 3).

Table 1: **Terminology for quality terms**

| **Fundamental Quality Terminology** |
|---|
| **Characteristic**<br>The property of a person and/or the denomination of an activity or an institution.<br>Characteristic, touchstone, criterion, feature, specialty, attribute, status symbol (Duden).<br>Example:<br>The school is big. "Big" is the characteristic of the school. |
| **Indicator**<br>Evidence for the property and/or the designation.<br>Characteristic serving as a (convincing) evidence or as a hint to something else (Duden).<br>Example:<br>The number of students is an indicator for the size of the school. |
| **Criterion**<br>A specifiable characteristic.<br>Touchstone, differentiatin characteristic, characteristic (Duden).<br>Example:<br>The school has 1000 students. „1000 students" is the criterion that helps to differ between small and large schools. |
| **Standard**<br>The minimum requirement for the specifiable characteristic/ criterion. It can also mean a maximum requirement or a medium requirement level.<br>1. Standard measure, average condition, guideline. 2. general standard for performance, quality, lifestye, standard of living (Duden).<br>Example:<br>The school has more than 1000 students. „>1000 students" is the standard for the property „big". |

These quality areas – described in the overview below – are shapeable areas. 28 quality indicators were described in the project QualiVET (Nationale Agentur 2007) in these six quality areas of Figure 1 which have the function to support the key players in the shaping of the framework for learning. Some of the indicators will be explained later in this article. In the

ASIA-Link Project this approach was extended to TVET teacher training and 29 standards were defined based on the idea of this approach (TT-TVET Consortium 2009, 151 ff.).

Table 2: **Description of the quality areas**

| Quality area | Description of the quality areas<br>Shapeable area/ addressee for change |
|---|---|
| **1** | The **role of trainers and teachers**. It is presumed that a changed self-conception and different ways of acting of teachers and trainers will improve training and class quality.<br>Key question: What kind of self-conception supports the training quality?<br>Guideline: *The trainer/ teacher paves the way for a good training* |
| **2** | The **learning processes/ role of students**. The design of learning processes has an immediate impact on the learning results and puts the learner into the centre. Trainers and teachers have a strong influence on whether learning processes can actually take place and can direct them to a certain extent.<br>Key question: How is the student placed in the centre of the learning process?<br>Guideline: *Learning processes support the learners needs* |
| **3** | The **training and teaching modes**: the central objective of training and class is shaped by the implementation of learning and teaching methods. In order to approach this for a class, super-individual characteristics that lead to a quality improvement need to be determined. The mods also reflect the underlying didactic orientations.<br>Key question: Which learning characteristics improve the quality of teaching?<br>Guideline: *The training and teaching modes support for acting of the learners/apprentices depending of their capacity* |
| **4** | **Training and teaching contents**: In vocational training, success is determined by the trainees' growing experience when faced with professional tasks. Training and teaching can contribute to that by logically structuring the contents. Therefore, items are necessary that describe whether or not professional tasks and problems are regarded in a way that competence development is promoted with respect to the individual stage of development.<br>Key question: Which of the structurization characteristics of the training contents result in competence development in the students according to their development level?<br>Guideline: *The teaching contents are work process oriented, adapted to the development level of the students and the result of structuring processes in team work* |
| **5** | The **learning environments and the conditions for training in companies and teaching in class**: By shaping the learning environment, by cooperating with the company/ school partner, by influencing the conditions of teaching and training, teachers and trainers have an immediate influence on the improvement of training and teaching quality. Characteristics for that quality focus on achievable objectives that make a development of training and teaching possible.<br>Key question: How must the learning environments be shaped to improve the quality of training and teaching?<br>Guideline: *All dimensions of the school environment support the learning processes* |
| **6** | The **reflection of training and teaching** will be taken into consideration as a transversal area for these quality areas. The reflection of teaching and learning processes yields findings which can be used for a continuing improvement.<br>Key question: What kind of reflection leads to an optimisation for learning in the metal sector?<br>Guideline: *Reflection gives a systematic possibility to detect actions to improve* |

## 5.2 Quality indicators and shaping measures as standards for quality development

A quality indicator consists of the designation of an actual condition and the naming of a target situation. The difference compared to measuring scales used in evaluation processes lies in the fact that not the measuring and the determination of a certain grade of quality is in the focus of interest. Moreover the changes necessary to improve the quality of practices requiring improvement are made visible. The quality indicator is designed in a way that it clearly indicates the necessary change. It is crucial that the change

a) describes an innovation in the quality area,

b) is expressively addressed to the quality area.

The latter means that in spite of interdependencies between the quality areas the changes have to be made by the addressee. In the example below (cf. Table 3): the teacher or trainer and his or her behaviour is the addressee (quality area 1). This can of course entail changes in teaching and learning methods. In the example the quality indicator shows that teachers should make use of tasks differing from those used so far in their teaching practice. The "target" (desired aim) of the example results from the German stipulation on the implementation of curricula that learning in the vocational school "should generally be based on concrete occupational acting" (KMK 2000, 10).

Table 3: **Example for a quality indicator oriented to changes**

| **Quality area: Role of trainers and teachers** | | |
|---|---|---|
| **Quality indicator** | | **Standard**<br>**Adequate shaping measure** |
| Practices requiring improvement<br>(examples for actual situations) | Desired aim<br>(possible role of teachers and trainers) | |
| 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<br>• elaborates a teaching structure with focus on the operating process<br>• elaborates professional tasks, that can be assigned to the curriculum and prepares them didactically as learning and working tasks<br>• applies learning and working tasks in class |

The entire **standard** describes the (minimum, maximum or medium) *requirements for change*.

The clear addressee of the change in the named quality area of Table 1 (Spöttl 2009) is the teacher even if – as mentioned above – the necessary changes in the implementation certainly entail changes in other quality areas as well. Corresponding to this example the addressee of change in the other quality areas is expressly "the learning process", "the training and teaching methods", "the training and teaching contents", "the learning environment" and "the reflection of training and teaching". Within the definition of standards these implications have to be considered.

Therefore standards are described in a way to clearly show which changes should be envisaged in terms of a quality improvement of the entire learning processes.

A definition given by CEDEFOP for the term quality standard is:

*"Technical specifications which are measurable and have been drawn up by consensus and approved by an organisation recognised at regional, national or international level. The purpose of quality standards is optimisation of the inputs and/or outputs of learning"* (CEDEFOP 2011).

As we can see with the help of this definition the optimisation in this sense the implementation of change plays an important role and also the input has to be shaped – not only measured (Spöttl 2014).

The *desired* **aim** of the standard (cf. Table 3) is based on a decision for the target situation which has to be transparently shaped (e.g. curricula, legal framework conditions, results of teaching and learning research, normative societal requirements).

The current situation of the learning process is determined in the respective TVET institution and results from a key question, an event or an identified problem and represents *practices requiring improvement* (cf. Table 3).

*Standards* in this sense are defined by the requirements for the changes. They describe adequate shaping measures presumed to motivate and help to reach the desired **target situation** and to change the practices requiring improvement. It is obvious that the term „standard" used here differs from terms describing a minimum requirement for a competence or the state of learning of a student (performance expectations). The standard does not describe the static condition but rather the shaping and changing itself. It is the changing that is the aim of a shaping oriented standard rather than the measuring and evaluation. Some European countries already work with this amended conception of standards which may contribute to the development of a better instruction. The novelty is focussing on the development and the changes in lieu of evaluation.

With shaping oriented standards new ways will be paved to initiate the development processes for an improved instruction. The freedom of shaping of the teachers is not reduced – as it might be presumed according to the above mentioned example. Moreover adequate shaping measures will be named which can be of help with the development of the desired instruction quality.

It must be underlined that the described conception of indicators and shaping oriented standards always concentrates on the process of

- learning,
- the shaping of the environment,
- the application of learning modes.

The standards mark the shaping framework in the form of a possible result that can be reached by a certain design of the learning process. They are, however, changeable during the process. Thus a certain dynamics should be promoted to avoid static procedures. Standards therefore should describe what students, teachers and the (training) organisation should know and be able to perform (this includes abilities). At the same time it should be characterized which results are possible during learning with regard to selected contents and how the learning environment should be shaped. In order to achieve this target it is necessary to characterize the indicators and standards in more detail.

### 5.3 Standards and Indicators

The specification of the indicators and standards is done according to Table 2 (Spöttl, Blings & Becker 2007, 96 ff.). Thus the problem and/or the core requirement in the field of acting of VET in the metal sector related to the indicator are described.

Indicators thus describe the process of changes which has to take place in order to attain the quality demands determined by the standards. Therefore standards must determine what the school, the school organisation, corporate learning environments, students, teaching staff and organisations „should know and be able to do / to ensure as a result of the study process or the contents or the shaping of learning environments etc." (Henkens, Janssens & ten Brinke 2011).

Standards should name acting references for VET which not only determine their cognitive dimension but also contains process references. This is true for all quality areas and their standards.

With the example of a concrete training project in a vocational school, the characteristic of shapable standards can be explained: During the VET training course for a target group, the trainees have to solve a control technological tasks for the control of a rolling gate for a garage. In order to reach a high quality of the training situation, the trainer/ teacher (with reference to quality area 1) is facing certain requirements. The requirements result from

- the curricula where the training contents and the competences to be imparted are described,
- the concrete task which requires to play a certain teacher role,
- the available period of time, the available equipment and the prerequisites for students and trainers who prefer a certain approach and certain process structures.

With the aid of the requirements it is possible to name quality indicators and shaping measures as in Table 3. In this case the key question is whether the teachers or trainers are working in a team and how the team is acting within the whole situation.

Table 4: **Standard - sub-category "teamwork"**

| **Key questions** | **Quality indicator** | | **Standard**<br>**Adequate shaping measures**<br>Describing concrete examples of the current project |
|---|---|---|---|
| | **Practices requiring improvement**<br>(examples for actual situations) | **Desired aim**<br>(possible role of teachers and trainers) | |
| Do teachers/ trainers work in a team when preparing to impart specialized contents in metal technology? | Teachers/ trainers rather work alone in their special field (here: metal technology). | Teachers/ trainers also adhere to the team concept when it comes to specialized contents. | Specialized contents<br>• are negotiated via teams and teachers / trainers are further trained in order to acquire the ability to work in teams;<br>• School organisation and work planning at school will be switched to teamwork.<br>• Teams develop their own guidelines for a high quality of instruction;<br>Teams jointly plan and prepare their instruction. |

Standards and their further formulations are no substitute for curricula. Moreover they should be used for the implementation of curricula in the sense of guidelines. Standards do not stipulate what should "happen" during learning processes. They do, however, have a binding character when it comes to reaching the quality demands.

The example shown in Table 3 underpins that core questions can be used to formulate indicators and standards. By adhering to these considerations it is important to identify all significant key questions for a quality area. The QualiVet Project followed this approach and the project consortium identified 28 key questions for the six quality areas (www.qualivet.info). The Asia-Link Project TT-TVET extended the approach to TVET teacher training and defined 29 standards. In this case, however, the consortium focused on the learning environment of the individual partners for the implementation. If considering formulating standards for the teacher training of a country, it is useful to formulate sub-categories for the individual quality areas.

## 6 Summary

The article shows that indicators geared towards quality, combined with the targets to be reached form the basis for the formulation of standards. Based on indicators, the standards define a shapeable framework for the implementation of the targets. A creative leeway is crucial as learning processes cannot be shaped like technical functional routines. For the formulation of standards for vocational teacher education it is therefore important to always shape them in a way that learning results can be determined. On the other hand, however, it must be ensured that teachers are capable to shape learning processes in an open and dynamic way.

Quality areas, quality assurance and standards have to be developed in close connection. One critical point of standard development is the definition of indicators considering that really the right things are in the focus of the expected quality. Most of known standards neglect two points: The requirement of *performing* developments and the requirement to shape really crucial points for professional teacher acting.

(See the German standard debate and results under http://www.kmk.org/fileadmin/Dateien/veroeffentlichungen_beschluesse/2008/2008_10_16-Fachprofile-Lehrerbildung.pdf or the initiative in the UK under https://www.gov.uk/government/publications/teachers-standards).

The shaping approach explained in the article could be an answer to this challenge. Especially the quality area 4 “training and teaching contents” should be in the main focus in the future because otherwise we risk that TVET teacher training misses the requirements of the working world of the learners.

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