Quality Toolbox
for better TVET delivery

Practical instruments for
TVET teachers and managers

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Published by
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Registered offices
Bonn and Eschborn, Germany

RECOTVET Programme
6th floor, Hanoi Towers
49 Hai Ba Trung Street
Hanoi, Viet Nam
T +84 (0) 24 3934 4951
F +84 (0) 24 3934 4950

Responsible
Ingo Imhoff

Authors
This product was jointly developed by Dr. Georg Spoettl, Raihan Tahir and validated by a Community of practices on quality assurance consisting of TVET managers and teachers from ASEAN Member States with support from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Editors
Mark Kilner
Dadang Kurnia
Nguyen Thuy Hang

Photos
Quinn Ryan Mattingly

Layout
Lotus Hanoi

On behalf of the
German Federal Ministry for Economic Cooperation and Development (BMZ)

As at
December 2019

Quality Toolbox
for better TVET delivery

Practical instruments for
TVET teachers and managers

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Table of Contents

List of Q-tools

List of Figures

List of Tables

List of Abbreviations

AMS	ASEAN Member States
AQRF	ASEAN Qualification Reference Framework
CIP	Continuous Improvement Process
EFQM	European Foundation for Quality Management
EQAVET	European Quality Assurance Reference Framework for VET
EQF	European Qualification Framework
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
LWA	Learn and Work Assignments
OD	Organisation Development
PBL	Problem-based learning
PD	Personal Development
PDCA	Plan – Do – Check – Act
QA	Quality Assurance
QD	Quality Development
QDA	Quality Development Ability
QDF	Quality Development Framework
QDS	Quality Development System
QM	Quality Management
SDG	Sustainable Development Goals
TD	Teaching and instruction Development
TQM	Total Quality Management
TVET	Technical and vocational education and training

Foreword

"*Quality*", in the words of American industrialist Henry Ford, "*means doing it right when no one is watching"*. TVET systems differ widely across the ten ASEAN member states. Yet all over the region, practitioners in TVET institutions – teachers and managers – are confronted with increasing quality requirements: The teaching and learning process and its outcomes are expected to reflect labour market demand and to keep track with rapid economic, social and technological change. Quality development is expected to make TVET institutions more attractive and improve the image of TVET among youth and parents. And last not least systems of quality assurance are expected to document compliance with pre-defined quality standards – to strengthen the trust in TVET qualifications and make them comparable, also at the regional level.

While the expectations are high, the main agents of quality development – TVET teachers and the managers of TVET institutions – often find themselves in a situation where "no one is watching" and no one offers guidance or hands-on advice. Under these circumstances, it was the task of a regional community of quality and TVET practitioners from ASEAN member states, in cooperation with leading experts and trainers from Germany and Malaysia, to offer TVET teachers and managers an adequate understanding of the basic concepts of quality development and quality assurance as well as to provide a set of tried and tested tools for successful quality development.

After more than one year of intense cooperation RECOTVET, the German government's Regional cooperation programme for TVET in the ASEAN region (RECOTVET), is proud to present the "**Quality Toolbox for better TVET delivery**". Together with the complementary in-service training module "Quality Assurance and Quality Development in TVET institutions", the Toolbox is now available both as a resource for joint training at the regional level as well as for translation and adaptation to the national level. In its pragmatic approach, the toolbox reflects the ambition of its authors and stakeholder to empower TVET personnel to take a more active role as agents of quality development and change.

It is our hope that the Toolbox becomes an indispensable reference for anyone concerned with the promotion of a quality culture in TVET in the ASEAN region.

Sincerely,
Ingo Imhoff

RECOTVET Programme Director

CHAPTER 1:
INTRODUCTION

CHAPTER 1: INTRODUCTION

1. Rationale for a Quality Toolbox

The United Nations Sustainable Development Goals (SDGs) underlines the importance of quality assurance (QA) in TVET provision. A Quality Education target is that by 2030 access for all men and women to quality Vocational Education and Training should be ensured. By its nature, TVET is designed to prepare a quality labour force, to supply competent workers to the labour market and to prepare people for their professional role in society. By having such a function, good quality TVET will contribute significantly to a country's economic growth, stability, satisfaction and social welfare. For this reason, the development of quality in TVET is imperative.

However, the reality is that many TVET centres are not yet able to demonstrate the quality expected of them, despite their embrace of various QA models. In this context, QA efforts are often demonstrated as instant measures taken over a short period of time, aimed at fulfilling different quality requirements required to gain formal recognition, usually from a Government agency. In this case, quality assurance and quality development (QD) are not perceived as a continuous process, so it is not internalized and practiced as a matter of course. A lack of adequate QA and QD instruments and poor training in TVET centres are among the factors leading to this situation.

Taking this condition into consideration, RECOTVET has taken the initiative to develop a quality toolbox which aims to support TVET personnel to optimize their work in QA and QD. As the main target group, teachers, trainers and other teaching staff are recommended to use this toolbox. Aside from the learners, these groups could be characterised as the "forgotten groups" when it comes to quality management and quality assurance materials [7].

Several meetings of TVET experts from the region preceded the process of toolbox development. These TVET experts, representing TVET centres from the ASEAN member countries, got together to exchange views with each other and to provide valuable inputs and directions as the basis for the toolbox content. On this basis, the toolbox offers a collection of instruments to enable teaching and managing staff in TVET centres to carry out their work in QA and QD more effectively and efficiently

2. Concept of the Toolbox

The toolbox presents key issues which are meant to support quality development and quality assurance in TVET centres. It equips teachers and managers of TVET centres with materials which should help to promote quality development. The toolbox also provides methodological hints and guidance on how to handle things properly to improve the quality of work in TVET centres.

Character of the Toolbox

The quality character of the toolbox is above all marked by a target-oriented choice of thematic key issues which promote quality, in both a narrow and wider sense. In a narrow sense, tools, such as the definition of indicators and standards, are provided to facilitate the development of standards, thereby guaranteeing a dynamic further development of quality. Nevertheless, the concepts are conceived in such a way that, for example, an improved quality level remains measurable. In another key issue, a large variety of teaching methods are introduced which may be applied for different learning processes to support quality development within the learning process.

Overall, six thematic key issues are described in the toolbox which are all geared to QD and QA. The explanations of these key issues are intended to be as straightforward as possible even when

discussing complex themes, such as the implementation of team concepts, which are not discussed in minute detail.

All selected priority themes can be applied in TVET centres in support of their day-to-day learning or further development of the centres. The texts are especially prepared for this purpose and are written in a clear and application-oriented way.

Finally, teaching and management staff of TVET centres will be equipped with a set of tools to enable them to work effectively and efficiently on quality development and assurance

Objectives of the Toolbox

In general, the aim of the development of the quality toolbox is to support the quality improvement competence of its users across ASEAN member states. The specific objectives of the toolbox are:

- To provide TVET centres in ASEAN with compact and practically oriented quality instruments that allows them to work on QA and QD more effectively and efficiently;
- To support TVET centres in ASEAN countries to implement innovative working arrangements to improve the quality of work, teaching and learning;
- To support the efforts of TVET centre staff in comparing quality;
- To support the quality development process within learning and teaching; and
- To promote regional and international exchanges and mutual learning about QA and QD instruments and practices.

With these objectives, the quality enhancement of vocational education in the ASEAN region and the mobility of participants, workers and professionals will be supported [1].

Users of the Toolbox

The users of the toolbox are mainly teaching and management staff of TVET centres. They are the core players when it comes to improving quality development and assurance focused principally on learning and teaching. For members of different TVET institutions (Ministries, Social Partners, training providers and others), the toolbox could be of interest.

Level of competence related to the ASEAN Qualifications Reference Framework (AQRF)

The topics contained in this toolbox provide the background, through training, for multiplying the level of competence of teaching staff.

Those usually selected to undertake training in quality have previously completed university education and training. However, the content of the training in this area is quite complex and theory-based. To be competent in this area requires critical and independent thinking, as well as strategic orientation in its application. Consequently, training in this area is linked to Levels 6 and 7 of the ASEAN AQRF [5].

Quality Toolbox Development Approaches

The development of the quality toolbox has proceeded in a participatory way. Initially, experts from TVET centres were invited to jointly identify different challenges that they face in their daily routines in dealing with QA and QD in their respective training centres and teaching processes. As a result, potential thematic areas were agreed as corresponding with the challenges identified. Furthermore, the experts provided potential instruments that they apply in their respective institutions for sharing with their peers from other member countries. With the support of these different instruments, mutual learning processes

and exchanges of ideas, the content of the relevant topics was developed. The steps of this process are depicted in Figure 1.

Seven steps were undertaken in this development process. The steps demonstrate a participative approach. A number of practitioners from ASEAN Member States (AMS) were integrated in the process of development.

Based on findings[1] from the expert workshop, a content structure for the toolbox was constructed. In accordance with this structure, existing instruments supporting learning and teaching processes and institutional development from various sources were collected, as listed in Figure 1. Subsequently, the toolbox content was drafted covering sets of QA and QD instruments and complemented with instruction in their application. To ensure its appropriateness, the first draft of the toolbox was validated by experts from selected TVET centres in Member States. This validation formed the basis for finalizing the toolbox. At the end of the process, the toolbox will be disseminated initially through training and other activities and subsequently through publications and discussion fora. It is expected that the toolbox will gain acknowledgement from ASEAN and other relevant bodies, so that it becomes a regional reference for TVET actors in the quality assurance of TVET.

3. Structure of the Toolbox

This Quality Toolbox is a comprehensive document consisting of tools that have been developed, produced and compiled under specific thematic areas. Understanding the challenges faced by many instructors in improving the quality of learning and teaching at their TVET institutions, the Quality Toolbox is equipped with various tools and instruments that can be used for a variety of purposes. Some tools have been modified by the authors to suit identified needs or to provide support for the selected thematic areas and some have created to meet its objectives. The contents of the quality toolbox place an emphasis on Learn and Work Assignments (LWA), the specially designed tool to support action-oriented teaching and self-reliant learning. The approaches and related instruments included in the toolbox should help support quality development closely focused on teaching and learning.

1. After some modifications of the perspective of the toolbox, six thematic areas were defined which are explained in Chapter 3.

Figure 1: Flow of procedures to develop the Quality toolbox

4. Pedagogical conclusions for combining learning and action

A very important way to learn is by performing an action. Such learning is self-reliant learning in its optimal form:

- The actions chosen for your participants' learning processes must be from a field of subjects in which the learners are interested in, or motivated to, setting their own goals.
- Teaching must support the processes of:
  - ◇ setting goals (self-planning),
  - ◇ comparing planned and achieved results (independent-decision making and self-monitoring),
  - ◇ final assessment/ evaluation with regard to the acting/learning results (self-evaluating, self-assessment) and
  - ◇ continuously informing oneself. [2]

- Teaching has to take into account that only complete actions have optimal learning results.
- Action is instigated by problems. The problems have different levels. At the first or lowest level they require seeking steps towards a given goal; at the second level they require finding and formulating a goal in a given framework of possibilities; at the third or highest level they require finding and formulating new – innovative – goals.

There is no isolated action in our world. Actions have to be seen in context. This has to be considered if you plan actions for self-reliant learning for a training course. One should start with problems/ tasks which give an overview and an orientation of the course subject, then give problems/tasks for acquiring detailed, functional and specialized knowledge and skills. These selected approaches must be both

- characterized by established theories and
- aim at supporting learning and teaching in a practical way.

The main direction of learning and teaching is the support of acting competences by applying a self-reliant learning approach.The practical support of teaching and learning includes:

Enhancing the quality culture of TVET institutions
This is a core issue in quality development. In the development of quality in teaching and learning processes, a quality culture must be established throughout the entire TVET centre. The team concept as an important contribution to the establishment of a quality culture will be introduced.

Paradigm shift in learning and teaching – ability to support quality development.
Concepts are shown which focus on quality development. Apart from quality assurance, it is certain that quality development must also be supported during the learning process, resulting in the highest possible level of competence.

Shaping quality-oriented indicators and standards for quality development
Quality development in learning and teaching is an open process which should be shaped in a way that a quality-oriented competence development can take place, with a clear-cut reference to a context (e.g. Industry 4.0, teacher training etc.). The development of adequate standards and indicators is crucial for this target. An adequate concept for the demanding development of dynamic indicators and standards is presented. The so-called shaping approach is the centre of interest.

Classroom Instructional Methods
These must be adequate to support learning in such a way that different perspectives are considered and that above all different types of LWA can be accessed. This refers to LWA that are designed very narrowly, very broadly, LWA aimed at self-reliant learning or oriented to project work.
Learning theories and methods are the backbone of the didactical concept.
The didactical concept which forms the framework for learning and teaching is added to the toolbox as another central element.

Classroom Assessment
In order to support and motivate the shaping of learning in the classroom, a multitude of media and teaching aids are provided. A checklist can facilitate evaluation tasks.

Cooperation with industry
TVET always includes cooperation with industry. Approaches will be included which support the creation of cooperation initiatives with industry.

Teaching staff and participants are given further support by developing:
Teaching materials for each LWA: These teaching aids are first and foremost aimed at deepening participants' knowledge of facts. This is most important for persons who are working as teachers trying to support quality by learning. This also involves support staff. Material prepared or selected for the training and can be used later as a reference by training participants.

School development (Colleges, TVET Centres) and organizational development.
The target is to create operational and quality-oriented framework conditions and infrastructure. Learning and teaching must correspond with organizational development. To safeguard quality-oriented learning and teaching, materials created or selected must also be adequate to support and promote organizational development and teaching and learning processes.

Safeguards for quality infrastructure. Apart from material focused on learning and teaching, adequate material is needed to support quality initiatives and "quality managers" that ensure optimal infrastructure at the TVET centres and Colleges. This is an important element in guaranteeing quality development.

The objective is to support innovations in TVET with the help of the toolbox and the material developed. One of the next steps will be a focus on the development of training materials.

This bottom-up approach enables the successful development of knowledge, skills and competencies of individuals with learning and teaching priorities. Assessment and validation activities should be developed from the same perspective to ensure a quality orientation. [3] [4].

5. How to use the Toolbox

The toolbox should be used by teaching and management staff of TVET centres. The overall target for the use of the toolbox is to update capacity in quality improvement in TVET centre outcome. This means that learning and teaching must be continuously improved to ensure better quality. The six thematic areas cover the fields set out below:

- Overview of requirements;
- Definition of outcomes;
- Collection of information;
- Topics dealing with different requirements in the context of the selected thematic areas;
- Statements, ideas and guidelines to support learning and planning processes and reflection on its contents;
- Statement, ideas and concepts to support the implementation of the proposed quality improvement concepts;
- Concepts for implementing training where needed,
- Checklists and feedback instruments.

The contents of the thematic areas should motivate teaching and management staff to use the toolbox. This means that key issues identified are processed and the theories and practically applicable concepts are implemented in TVET centres. The following steps are recommended for implementation:

1. Status analysis: Analysis of the current state of a TVET centre to identify weak points to be compensated.
2. Planning (what and how it should be improved): Exact planning in order to determine which weak points should be worked on, and in which way, to achieve quality improvement.
3. Implementation process (improvement transferred into practice): The design of instruments and strategies for implementing initiatives and guaranteeing improvements.

4. Evaluation and assessment of achievements: Thorough evaluation to ensure successful implementation. Are further improvements necessary? Check whether alternative solutions could lead to success.
5. Securing what has been achieved: Successful implementation steps should be secured, and necessary corrections should be made during the implementation

With the help of these five steps[2], the individual toolbox concepts can be implemented. The implementation of each of the planning steps must be done with the utmost care. The implementation of each step may take up to two years. Therefore, it is necessary to plan over the long-term and to prepare the teaching and management staff for their role in the process in a target-oriented way.

To assist the users of this Q-tool, a legend has been created and marked for each tool under each thematic area. The legend indicates that this tool is suitable for lecturers or instructors while is for managers and those not directly involved with the learning and teaching process. This will guide the users in selecting the best Q-tool for each purpose.

 Tool is suitable for lecturers or instructors.

 Tool is suitable for managers and those not directly involved with the learning and teaching process.

Users will also be provided with special hints, instructions or guidance for each Q-tool. This hints, instructions or guidance is set out under each Q-tool. This gives users an idea as to who it is for and some didactical hints.

Bonus: At the end of each thematic area, some key points are highlighted for each thematic area. This is written as a summary and in each thematic area.

6. How to use Q-tool

The action cycle (goal setting, decision making, implementing and evaluating) is applied as an approach to explain on how users[3] can use the instruments in the toolbox for different objectives and purposes.

The step by step approach given below is a specific example on how to use the Q-tool 36: Teacher classroom delivery evaluation form. These examples demonstrate efficient ways of shaping learning if the subject area is well structured. In situations in which the subject content is not structured, other ways of learning will be brought into the process. Within RECOTVET, this will be done with pedagogical ideas like combining learning and action as explained under chapter 3:

Step 1: Set the objective of using the Q-tool

The Q-tool 36 may be applied to serve different implementation purposes. This instrument can be used as a self-assessment tool to measure the quality of learning and teaching and to confirm areas that need improvement. It can also be used as an instrument to:

- control the learning and teaching output;
- monitor trainers against procedures or institute requirements;
- assess the level of teacher/instructor competency;
- provide evidence for third party audits;

2. Steps 2 to 5 are based on the "Quality Loop Cycle" PDCA (Plan, Do, Check, Act). The PDCA helps to structure the implementation process and to work out areas which need further improvement in their implementation.

- confirm or change an instructor's designation;
- identify candidates suitable for instructor training; or
- identify candidates for auditing processes.

Step 2: Identify the users of the Q-tool

Teachers or instructors may use this tool for quality control in learning and teaching delivery as classroom teachers and instructors may ask their peers to assess them using the Q-tool during their classroom sessions. Here, the Q-tool serves as an instrument for quality control; controlling the session plan prepared as well as its implementation or delivery of the lesson. Their observations can be recorded in the remarks area.

Step 3: Confirm or decide on the objective of the Q-tool

The Q-tool may be used for different objectives and purposes. Instructor's or trainer's immediate supervisors or managers, (not directly involved in learning and teaching) may use this tool for quality assurance. It may be used to assess the quality of session preparation and the implementation of the lesson plan.

Step 4: Implement assessment

If the tool is used for self-assessment, then coordination is unnecessary. However, if it involves other parties, then it is best to plan and coordinate to avoid any interruptions or disappointments. Self-assessment can also be carried out by video recording the session. The trainer may then assess his /her performance against the criteria in the Q-tool 36.

Step 5: Record and evaluate

Observation is done by another party, preferably someone with academic/education competence (not education management) and someone who is familiar with pedagogy or andragogy. All observations made by peers or managers should be recorded and documented along with recommendations for improvement or monitoring. Remarks made during the observation need to be communicated to the instructors immediately in a form of a discussion or a feedback session. Time is the important factor here. Should the feedback be delayed, then the trainer or the assessor may have forgotten the areas that need to be highlighted. This is important as it may help the instructors to improve their session planning and delivery. The feedback provided may help teacher or instructor to make changes that have a direct impact on the output of the learning and teaching. The remarks column should highlight the areas observed or to be improved and suggest solutions for changes. The observations and feedback given may be used to enhance the quality of their delivery, session stages, media use, assessment items or any observation made during the session that can help better classroom delivery.

The action cycle has a starting point and an end. It is recommended that after the evaluation phase, some recommendations on the implementation and monitoring of the use Q-tool are made. It is recommended that monitoring focus on the frequency of use and to the extent of its use, and that:

- teachers at TVET institutions have some input on which Q-tool is effective and being regularly used;
- management at TVET institutes know the rate of transfer of ownership to TVET institutes; and
- the RECOTVET team identify areas for improvement, possibly for the next edition of the Toolbox, how effective the toolbox is in helping to promote quality and better TVET delivery.

Food for thought: The tool is designed for the forgotten ones: Its effectiveness and application very much depend on the acceptance of change. Change is by choice rather than by chance.

3. Please refer to sub-topic 2.3 for users defined in this toolbox.

CHAPTER 2:
QUALITY CULTURE IN TVET

CHAPTER 2: QUALITY CULTURE IN TVET

1. Introduction

What is quality in TVET and how can it be assured? This simple question has been addressed by both experts and practitioners for a long time. "Quality is an opalescent concept that, in the educational system, is characterized by multiplicity and vagueness." [2] Quality is widely supported by all people responsible for education and TVET. The expectations are broad and vary from interest group to interest group. The interest of the government is to retain the efficiency and competitiveness of the economy as a whole and to integrate young people into society.

This takes place via qualifications and competency development in an occupation and via socialization processes within TVET centres and companies. One undisputed issue is that training quality needs to be developed and secured [2] in a reliable manner. This is the main target supported by the toolbox.

2. Definitions

Quality

To the question "what is quality?", the following statements are frequently made:

- "Quality has to be understood as a development process"!
- Quality is a constant search for causes of problems and their best solutions (in organizing TVET centres, in the teaching process, in the learning process!)

Quality in this sense means that it was developed in the process of learning and teaching, which is first of all influenced by the applied teaching methods. QD during the process of learning and teaching is one of the three pillars of quality in TVET centres. The other two pillars are Quality Management (QM) and Quality Assurance (QA).

Quality is a multi-faceted term. The quality does not exist. Ideas about what characterises "good education and training" can differ between people involved in training and education, just as they can differ between representatives of different levels of the vocational education and training system. This also applies to the reasons perceived by individuals for developing quality.

There are advantages to creating a common understanding of quality: If competent teachers and trainers are available, if trainees have the opportunity to participate independently in shaping their training and if all people involved in training continuously exchange their views and deliberate, it will result in optimum conditions for trainees to make a successful transition to working life and, last but not least, it will also contribute to reducing the number of training dropouts. High-quality training is to everybody's advantage [8].

What quality in vocational education and training means, in concrete terms, is a matter of negotiation between the people involved. Only in this way can the concept of quality be brought to life. Whether vocational education and training is successful and what good education and training consists of, is jointly defined by everyone in the TVET centres and companies, from management to trainees.

Quality always has several dimensions. These include inputs (equipment available at the training venue, qualification of the trainers, training plans etc.), processes (learning methods, motivation of trainers etc.), outputs (successful learning, final mark etc.) and outcomes (transfer of what has been learned, utilization of the qualification etc.). The input and output dimensions of quality are at the heart of minimum standards. Process quality is thus expressed in terms of the interaction between trainees and parties providing training.

Quality Culture

A quality culture is a 'soft' concept, depending on the prevailing attitudes and behaviour of individuals in the TVET organisation. A quality culture builds on quality management and is understood as the interaction between a well-functioning, professional Quality Management System (QMS) and committed staff members who, guided by professionalism, demonstrate quality-oriented behaviour. Thus, the main factors of a quality culture are individuals' roles and commitment in producing quality in TVET. [3; 6].

A quality culture has to be discussed in the learning context: Learning culture is a new term in vocational education and training!

The term learning culture is frequently used to develop new ideas for learning and, based on this, to name a "programme" as an orientation for certain societal groups [9]. Learning is no longer seen as an organised process of a transfer of predetermined knowledge. Moreover, this perception is opposed by a concept of regarding learning as:

- a self-directed process;
- a process marked by one's own initiative;
- a holistic process (principle of brain, heart, and hand); and
- a self-accountable process.

These terms alone, however, do not describe anything dramatically new for vocational learning, as exactly those characteristics are cited as those which distinguish the acting and learning field-oriented instruction in vocational schools. A transfer from the teachers (to-be) in vocational education and training seems to make sense and to be legitimate in the light of their role as important co-shapers of vocational learning. Nevertheless, this is not enough. What is important is a perception beyond an "adaptation" which considers the shaping of the learning and work environment of teachers. Thus, the shaping of the instruction and the learning processes as well as the further development and the shaping of school structures become domains of a learning culture for the teaching staff [10].

Learning culture as a change of paradigms

This perception of a new learning culture which should decisively expand the ideas of learning so far includes a focus on experiential learning, i.e. learning in the context of the work processes of teachers.

The change of perspectives lies in the fact that learning culture should be determined by learning within and with the aid of the work processes of teaching staff rather than by learning for work processes. This extension and revaluation of learning is to be understood as a change of paradigm in the perception of learning, as such. So far this change is justified by the to date still dominating concept of institutionalised learning, which is deemed to be of little effect and which is based on the assumption that externally organised impulses are necessary to initiate and to control the learning processes.

However, the question is if and to what extend the externally organised impulses could and should be abandoned in order to make way for the positive aspects of experience-oriented learning? A related basic assumption is:

> "(…) that people can learn in a self-organised way regardless of their preparatory training or age, and that learning is a central value governing the behaviour of the unity and the individual" [11].

Such a perception of learning postulates that the influence of the learning of an individual on the changes in the institution ("the unity") are recognized and volitional as this eventually leads to a certain pedagogization of the world of work. The argument to establish learning at the work place must be universally accepted and must result in respective consequences at the work places of teaching staff in schools.

In shaping future teacher training, the obvious question arises whether learning within the context of the teachers' work can be realised and how the relationship to traditional forms of learning could be shaped. On the one hand, traditional, intentional learning is undoubtedly highly relevant, as the "tools" required by a teacher to successfully shape his or her learning processes cannot be handled without certain help. Nevertheless, teachers acquire a lot of competence with the aid of "experience". After years of occupational experience, especially experienced teachers can no longer remember the learning theories they adhere to. Therefore, it is obvious to reflect how experience-guided and implicit learning can be better supported and shaped during teacher training courses.

A "learning culture" supporting learning in teacher training with a new perception is very useful. It shows that:

- experience guided and implicit learning is no counter draft to the so-far practised professionalised tuition;
- a learning culture can place teaching in the background and learning to the fore;
- competence development of teachers can be supported by learning and teaching (that is, the work of the teachers);
- intentional learning alone does not adequately prepare for the swiftly changing requirements of the work place;
- the opportunities of experience-guided and informal learning have to be exploited for vocational education and training;
- the different learning theories have to be developed for the competence development of the teachers, theories which also consider the characteristics and framework conditions necessary for the acquisition of experience-guided and implicit knowledge; and
- there are still unexploited possibilities for the initiation and reflection of informal learning, if this plays a major role during the learning of the teaching staff.

Therefore, it seems to be worthwhile to integrate the concepts of experience-guided and implicit learning into teacher training.

References for the shaping of a learning culture

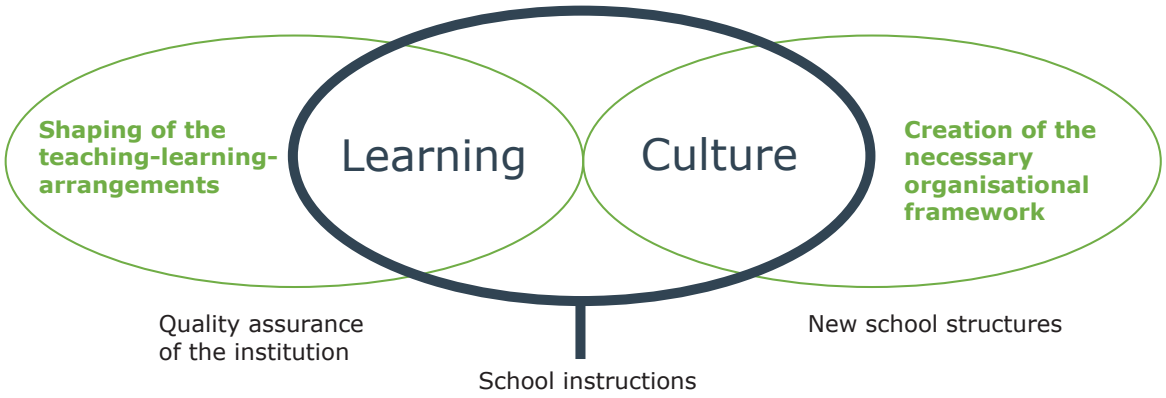
The above discussion attempts to explain in detail the perception of the "learning culture" applied here and relevant for teacher training. The predominant perception aims at characteristics and methods of concrete instruction suitable to be systematically used for the processes of competence development in teachers.

As a term, the creation of a learning culture is not motivated by an ideal perception of learning per se but rather is the result of an identification process aimed at the shaping of learning processes. In concrete situations, it is necessary to start from very specific learning cultures which describe the related individual and social dispositions [10]. Thus, a parallel existence of different learning cultures must be accepted as a matter of fact.

Learning culture, perceived in this sense, requires that teacher teams must correctly deal with the creation of adequate teaching-learning-arrangements; and the necessary adaptation of the organisational structures in a very concrete way and by focussing on their target group.

By adhering to this perception of learning culture, teacher training institutes must inevitably engage in a discussion on "quality assurance for learning" and the development of adequate "school structures (cf. Figure 2).

Figure 2: Learning culture and school development



Learning processes oriented towards the student can only be realized if the forms of the learning arrangements, the organisation of learning, the entire learning offer and learning opportunities include an adequate didactical foundation and a methodical differentiation. Thus, the question to be answered is how learning processes for teacher training should be shaped. Nevertheless, it is true, and this is why, the use of the term "culture" is very appropriate, that the further development of the conception of learning is an evolutionary process. The variety of opinions on how learning "is functioning", how it should "take place" and how it should be shaped must therefore be the driving force for this process. Expertise is always generated if participants can meet new challenges by resorting to their experiences so-far.

A learning culture for teacher training aiming at competence development and focussing on implicit learning requires the initiation of evolutionary processes in two ways:

First: On the didactical level it is always important to identify work tasks for teacher training and to arrange them in a way that they promote the individual expansion of knowledge.

Second: On the level of organisation and shaping of teacher training, forms and processes have to be continuously developed in order to safeguard an adequate shaping of the interaction between practice, reflection, and theoretical follow-up.

This requires above all a subject oriented organisation of vocational education and training including practice oriented albeit sanction-free learning-teaching-arrangements and the opportunity to an unprejudiced and open feedback.

Shaping of Quality

What does "shaping of quality mean"? Shaping of quality in the context of quality culture in TVET means that teachers are able to identify how a successful learning process of students towards high quality issues has to be supported. This includes the planning of lessons, practical work to support students in lessons and reflection for a further optimization of the learning process.

Shaping of quality also includes the capability to shape the school organization in their activity areas in cooperation with colleagues in a team. A challenge for the teaching staff lies in the fact that this kind of support requires a lot more planning that can only be accomplished to bring teams together and to re-shape the structure of a TVET centre for team work. This is an important step towards a quality culture.

Quality Development

Quality Development – A Shaping Concept

An analysis of the numerous quality models for schools reveals that these models are very comprehensively conceived and integrate important fields of instruction into quality issues. However, the emphasis is clearly on the development and the evaluation of "school quality". The quality of instruction as a factor of influence is rather neglected in favor of a holistic assessment of school processes.

The shaping of instruction and its discussion by the teaching is not adequately assessed. As for the existing quality models, a high weighting of organizational processes in schools and of evaluation processes is still dominant. The "shaping – and thus the development of quality in instruction" only plays a marginal role. The acting of the teaching staff regarding the process of the development of instruction needs to have a considerable impact on quality development in order to support the guiding principle of a competence-oriented learning culture.

Contrary to the present practice, quality development in schools should rely on models that focus on the following fields of quality:

1. The role of the teacher;
2. Shaping of learning processes;
3. Methodological shaping of teaching/learning arrangements;
4. Structurization of contents;
5. Reflection on instruction;
6. Shaping of learning environments;
7. Framework conditions.

Thus it is especially important to not only ensure formal demands but to continuously improve the quality of learning, the learning process and the learning outcomes. This means that all seven fields of quality must be integrated into quality models in order to form a basis for a balanced quality development. Only by encompassing these elements, quality models can meet the demands of efficient vocational education.

Quality Assurance

Quality assurance of TVET qualifications should be seen as an end-to-end process that applies to the conception and formation of qualifications as well as to the practical administration of assessment on the ground" [12]. At the Third International Congress on TVET, held in Shanghai in 2012, a recommendation was made to explore the possibility of developing international guidelines on quality assurance for the recognition of qualifications based on learning outcomes. Developing such guidelines requires a functional appraisal of the quality assurance arrangements that are currently in place for TVET qualifications [12].

For the Asia-Pacific region, exploring quality assurance and developing related guidelines is timely. However, 13 countries participated in studies about the status of the implementation of quality

assurance concepts. The focus of the reports was to describe the status of the quality assurance of qualification, starting with the assessment of learning.

Quality assurance arrangements are key areas that "underpin the qualification process used in TVET with a view to generate trust and supporting the relevance of qualifications for the labour market and for individuals." [3] This is one key question, which is written to identify issues involved in assuring the quality and consistency of the qualification process so that the certificates issued have currency and are a valid and reliable testament to a learner's knowledge, skills and wider competences. These issues of quality mostly formally discussed and open up the field of quality of qualification provision so that a wide range of stakeholders in the qualification process can challenge and offer elaborations and observations [3] [14].

The establishment of quality assurance requires a long timeframe with many steps in the processes of design, development, implementation and monitoring. For the management of this comprehensive process administration is needed for the design of qualifications, for the establishment of an assessment and validation process, for the creation of certificates and their recognition. Learning which is the basis for competence development and for obtaining a qualification is repeated in the planning papers [3], is, however hardly considered as instruments. This gap should be closed by one of the approaches of a quality culture (Chapter 2.2). Focus will be laid on the development of learning processes.

Depending on available resources, countries have applied models and intentions of quality assurance either in a partial way – covering only certain areas of a training system, or in a holistic way – covering all institutional, input, process, output and outcome dimensions [14] of a training system. Quality improvement refers to continuous change, improvement of processes and performance to fulfil better quality objectives [13]. With high priority learning and teaching should be the centre of quality improvement.

Quality Management

Management is defined as the overall efforts to establish cooperation and coordination between a group of people and to have them carry out a joint work aiming to meet the determined goals. Another popular definition of management is "carrying out a work through other people in order to meet certain objectives". What should be considered carefully here is that management is a decision-making process and is focused on people.

Theoretically, another definition of management in the light of the aforementioned definitions is "the science and art involving to have a work carried out by using the resources (human, money, time,

tools and equipment, etc.) in the most efficient and effective way. However, this simple definition is not always so simple and easily applicable in practice. Particularly today, it is even more difficult for the managers of leading organizations which provide products and services in the 21st century organization. The conditions of the world which becomes smaller and the resources of which are gradually decreasing have made it a requirement to get to know the managers of organizations at all levels, to learn the management techniques better and to implement these techniques. The common elements which force the managers to learn all the aspects of management are competition, quality, change and to positively respond to the clients' expectations as mentioned above. These four external factors can be considered as the most important elements in the formation of Total Quality Management (TQM).

Almost all definitions of management mention the "determined goals", and in the modern management approaches, quality and maintaining the quality are emphasized. The process and the basic mission of human elements in TQM are to manage the change and reach the "quality". Here, quality has a different meaning compared to the traditional meaning. Quality is meeting the clients', the students' expectations. In other words, TQM is a form of management which emphasizes the students' expectations above everything and establishes the quality defined by the students under the scope of the product or service throughout the activities.

Another definition is that (total) quality management is the approach which foresees the continuous evaluation and development of all the activities of an organization. Thus, the organization aims to increase the level of quality by eliminating the mistakes at every stage as it increases the level of quality through its activities. This approach is based on participation and cooperation between individuals in order to meet the goal. Here, the characteristics of leadership are based on the exchange of ideas.

In the light of the aforementioned definitions, TQM is a form of management which emphasizes the human factor as the most valuable resource; it is based on participation in all the activities including management, teamwork, efficient and effective use of all the resources (human, material, etc.) including time, and carrying out the work correctly in the first attempt; considers education as the basis for continuous improvement; and adopts the principle that organizational policies are directed by the quality phenomenon. This definition produces the basic characteristics of quality management in a sense to meet identified quality standards which are defined by responsible organisations.

3. Paradigm Shift

For several years, a paradigm shift in TVET has been under discussion (cf. Figure 3). This discussion conceives the paradigm shift from a different perspective, i.e.

highlighting the terms output and outcome instead of input and process.

This kind of paradigm shift – from input and process to an output and outcome orientation – is called Paradigm Shift I. It considers learning results (learning success) and occupational performance (impact). However, in the meantime there is consensus that this is no longer sufficient, leading to the development of Paradigm Shift II.

Paradigm Shift II concentrates on the input,
the process, the output and the outcome as a whole.

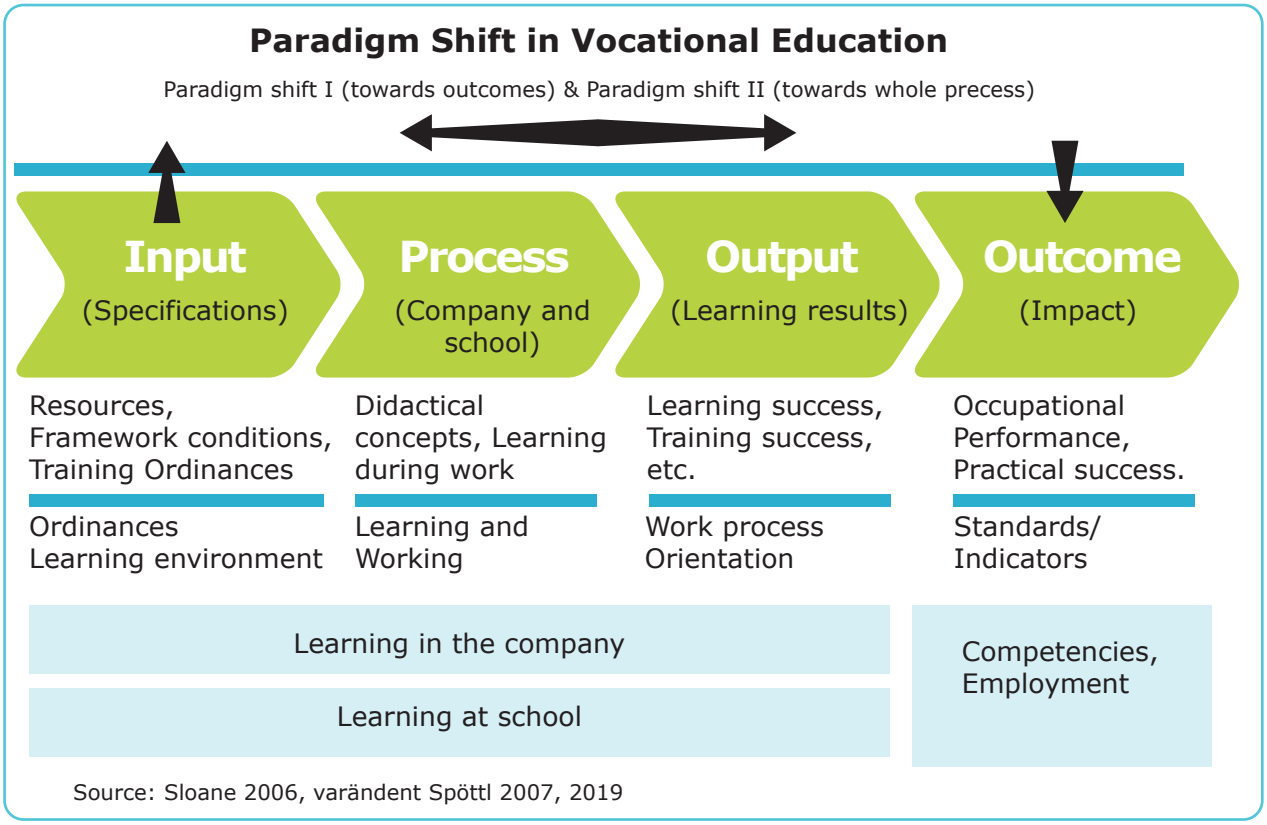
It pursues a continuous optimization of the entire process from input to outcome, resulting in a steady quality improvement by

- didactical concepts that support learning,
- support for learning processes and
- shaping of learning environments.

Thus, occupational performance will be considerably improved.

With this reorientation, the quality of teaching and learning, the quality of teachers, the outcome orientation of curricula and the interlinkage of training to the labour market becomes much more important than in the past. For this reason, quality management and quality assurance models are no longer sufficient because of their focus on infrastructure and organisational measures of TVET institutes. The quality dimension has to be extended towards the learning and teaching process with the help of a quality development model.

Figure 3: Paradigm shift in TVET



Source: Sloane 2006, varändent Spöttl 2007, 2019

The change of the focus is relevant for all learning environments. These include:

- formal, school-based system,
- informal sector training system (e.g. traditional apprenticeship system),
- enterprise-based, on-the-job training,
- non-formal, semi-structured or unstructured training, and
- online, internet-based training.

Technical and vocational skills development takes place at different levels, in different types of formal, non-formal and informal learning environments. These include technical and vocational schools, polytechnics, business enterprises, and apprenticeship training centres.

4. The Interlinkage of Quality management, Quality Assurance and Quality Development

The processes of ensuring that specified standards or requirements for teaching, learning, education administration, assessment and the recording of achievements have been met needs quality management (QM), quality assurance (QA) and quality development (QD). Quality assurance is a component of quality management and is 'focused on providing confidence that quality requirements will be fulfilled. Quality development supports the process of quality improvement which is an overall requirement of quality management. QM, QA and QD are mentioned as the three pillars of quality!

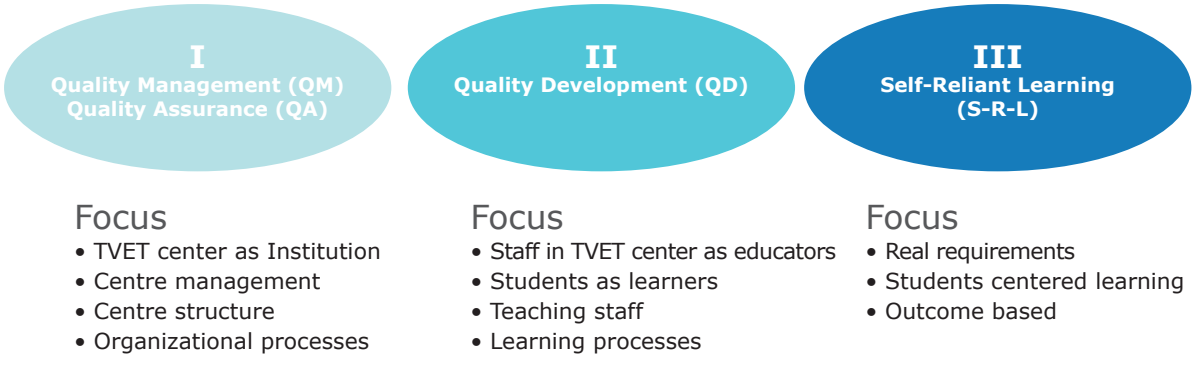
These three pillars help to sort the numerous quality components in TVET. They can be summarized as documented in Figure 4:

- Quality Management (QM) and Quality Assurance (QA),
- Quality Development (QD),
- Learning/Learning Processes (Self-Reliant-Learning) (S-L-R).

QM and QA mainly date back to developments in industry in the 1980s and 1990s. For TVET centres, personnel development (PD) and organization development (OD) are the centre of interest in these approaches. This includes all management tasks and structure development. QA concentrates above all on these fields.

The second pillar is QD, concentrating on staff, teaching staff, shaping of a learning cultures and shaping of the learning process. This includes teaching and instruction development (TD) as shown in the above overview. QD must be explicitly highlighted and should be in the centre of interest as it concentrates on the core tasks of TVET centres, namely the generation of quality of the learners who eventually produce the output. The achieved quality is then ultimately transported to the work places.[4] QD includes self-reliant-learning.

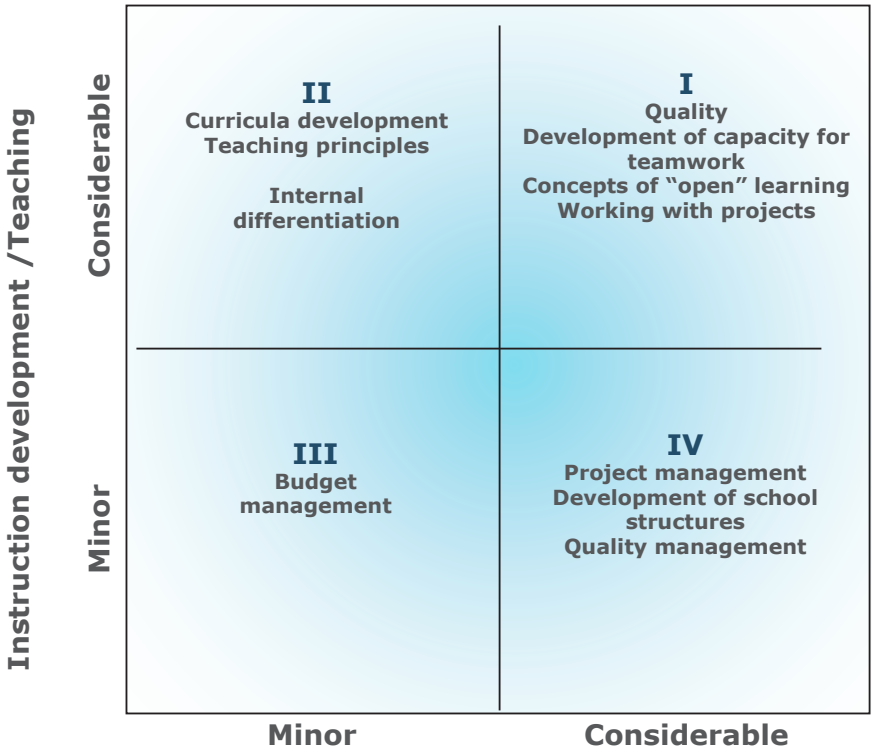
Figure 4: The three pillars relevant for quality improvement



4. In a number of European countries (Germany, Switzerland, Austria, Lithuania and others), TVET witnessed the replacement of originally industry-oriented quality approaches in favor of established and more pedagogically-oriented models.

In order to particularly promote QD via S-L-R it is necessary to choose learning approaches and didactical designs which safeguard quality-oriented learning. In Pillar III the approach for "self-reliant-learning" should be given preference: This approach offers much freedom of shaping the didactical design and above all supports self-relied learning. In addition, this approach allows an application-oriented learning by making use of "Learn and Work Assignments." This facilitates a quality orientation with reference to the world of work. Figure 5 shows that the learning results. the quality developed during learning – depends of several parameters. Thus, it is necessary to consider more than one pillar for quality development. At the same time a paradigm change is necessary which concentrates on the quality of learning and to align all other parameters accordingly. A concentration on organizational development (OD) and personnel development (PD) alone – as practiced in the 1990s and at the beginning of the current century – cannot guarantee the quality of the learning results.

Figure 5: Priorities of development of TVET centres



5. Quality Development Framework[5]

What is a Quality Development Framework?

> The Quality Development Framework (QDF) is an instrument and guideline for teachers and trainers to develop improvements for learning processes in different fields (e.g. the metal sector) supported by shapeable indicators and a team concept.

The pan-ASEAN requirement for improved quality in vocational training systems, and the growing responsibility of vocational training facilities with regard to competitiveness of national economies, makes it essential to address issues concerning quality development and quality assurance. Today's rapidly increasing economic and societal development of changing working structures, technologies and professions forces the vocational training system to face such changes, and to react accordingly.

The quality requirements of vocational training are essentially much different to those of company-oriented quality development systems, such as ISO 9000, which have been implemented in TVET centres. Quality in TVET centres is the result of continuous improvement processes in optimizing learning processes and reflects the competence development of apprentices and participants. Teachers and trainers are the cornerstones of quality development in vocational training. In national and international discussions, the aspect of quality assurance is focussed upon, at least when the application of instruments is involved, with which quality in TVET centres is to be improved at the system level. With the QDF approach, however, an instrument is being created which serves quality development on the basis of shaping-oriented measures.

The Quality Development Framework (QDF) respects the special aspects of learning environments with focus on process orientation, structure and development. The superordinate objective of QDF is therefore to develop a new appreciation for quality. The QDF quality development framework will be prepared to improve TVET centres and vocational training. Teachers and trainers are to be provided with a framework which enables them to concretize quality requirements in different fields from superordinate needs (e.g. curricula), and thus to provide an improvement of teaching offered in a bottom-up process by means of orientation towards quality indicators. With the aid of the quality development framework, teachers and trainers in the teaching fields are to be assisted in identifying and implementing shaping measures to improve training and teaching quality. As such, this framework concept focuses on the improvement of learning processes.

5 The project "Quality Development and Quality Assurance" with Labour Market Reference for the Vocational Education and Training System was funded by the European Commission: Leonardo da Vinci. The paper was modified by Georg Spoettl for use in RECOTVET.

Authors: "Quality Development and Quality Assurance" Project Group (Spöttl, Georg; Becker, Matthias; Blings, Jessica; Gessler, Michael; Michek Stanislav). Head of Project: Georg Spöttl

What is QDF for?

> QDF is developed to indicate practices requiring improvement and to shape the quality of teacher's work.

The inclination to implement modern organisational management systems, including the implementation of quality management systems (e.g. ISO 9001:2000, excellence model EFQM, EQAVET model, AQAF), could be observed in Europe and Asia for several years. The objective of the application of quality management systems in the vocational education is the development of quality of the providers of vocational education.

There are many activities and initiatives in terms of quality assurance and quality development in ASEAN countries. Nevertheless, individual initiatives have normally no mutual relationships; quality instruments are only used in a very segmented way and concepts developed on a ASEAN level so far play no or only a very limited role in TVET centres, colleges and companies when it comes to qualification concepts.

The present quality management systems tend to have a limited effect. Quality management systems are effective when they develop the quality of teaching and learning. The existing experiences with the application of quality management systems show that they have a propensity to help educational organisations' improve the management system but no direct connection has yet been proven between the application of quality management systems and the improvement of the educational process of participants, not to mention the connection between the implementation of quality management systems and an improvement in the work of teachers. The QDF addresses the area of the improvement of the quality of teachers work. A Quality Framework is created, which respects the particularities of the TVET centres environment with the accent on participants' educational achievements.

Who can use QDF?

> The QDF is to be applied by teachers and trainers in the different fields of teaching and this work should be supported by the management of the TVET centres and training departments.

The entire QDF is oriented towards teachers and trainers of TVET centres and companies. For the application of all elements of the framework the participation of the whole organisation is the optimum, or at least during the implementation phase, the full participation of one work unit - like one department - is recommended. The most successful implementation of the whole QDF will be possible if TVET centres management supports its use and does not hesitate to open the organisation for the creation and development of team structures. Nevertheless, the element of the shaping-oriented indicators can also be applied of individuals like trainers of companies as well as single teachers with the wish to improve the quality of classes. The whole QDF is oriented to TVET centres, but the indicators/standards are also possible to use in companies. They include the perspective of learning at the work place and within the company.

CHAPTER 3:
QUALITY TOOLS FOR THEMATIC AREAS

TVET

CHAPTER 3: QUALITY TOOLS FOR THEMATIC AREAS

Thematic Area 1:
Enhancing Quality Culture at TVET institutes

1. Introduction

Purpose

Successful implementation of a 'quality culture' is dependent on systems, processes and activities which focus on achieving continuous improvement in the performance of human inputs such as motivating, mentoring, and guiding employees, utilising learner centred approaches to teaching which aim to increase their level of knowledge and skills while concurrently enriching their work.

When to use it

Creation of a quality culture must become a primary issue in the development process of TVET centres. Many strategies can be availed upon to achieve this outcome and detailed in the mission and vision statements of the centre and, most importantly, integrated within the daily routines of TVET practitioners.

Setting

The mission and vision statements have a strong influence on the design and application of learning methods and the learning environment or context must be designed in a way which supports a development-oriented learning culture at the centre of which are the human resources.

Facilities and Materials

Pin boards, workshop materials (cards, markers etc.), projector, visualization board, working materials (from the teachers). Areas for communication and learning activities to practice cooperation.

Notes

Examples are helpful to demonstrate how quality can be developed in TVET centres

Guiding ideas for quality: Quality Development – Enhancing Quality Culture

Essentially, the basic idea underpinning all quality models is the same: quality management should not be confined to technical functions safeguarding product quality only. It is also defined with a view to enhancing the relationship between the enterprise and its customers. According to Philip B. Crosby, quality is the fulfilment of requirements identified in the process of defining quality standards. The most significant goal is customer satisfaction which can only be sustained realistically by long-term development of enterprises and TVET centres. Quality in TVET centres can be specified as the achievement of performance which meets the benchmark of "work readiness" for a productive, meaningful role in the workforce. (see Table 1).

Table 1: Quality guiding ideas of quality management - Model for TVET centres

No	Enterprises: EFQM guiding ideas	Quality guiding ideas for TVET Centres
1	Guidance towards specifically targeted and clearly defined outcomes	Definition of a vision
2	Management with defined processes supported by evidence guides	Teaching and learning are at the centre of management
3	Personnel development and participation	Continuing staff development and participation
4	Continuing learning, innovation and improvement	Continuous learning, teaching, innovation and optimization
5	Developing partnerships	Teamwork
6	Rembracing and demonstrating a commitment to social responsibility	Responsibility towards participants, parents and public
7	Result orientation	Outcome orientation
8	Customer orientation	Student centred

In both cases, these guiding ideas must be implemented within the context of the so-called "RADAR" concept (Results, Approach, Deployment, Assessment and Review). The individual steps are intended to serve as an orientation guide.

One of the most important ideas is to continuously optimize one's own performance and results by regularly analysing and comparing them against similar or better benchmarks of quality achieved in TVET Centres.

2. Objectives

The objectives of this thematic area are that training participants will be able to…

- understand and appreciate the purpose and power of statements of mission and vision for TVET centres;
- develop a capacity to develop clear, unambiguous mission and vision statements for a TVET centre;
- appreciate the respective strengths and weaknesses of different organisational structures in achieving desired outcomes, for example more 'flat' organisations employing a team approach versus those organisations that are more stratified and 'traditional' employing a more hierarchical approach;
- identify how to generate and mobilise support from staff and management of a TVET centre for the implementation of a team concept;
- develop a short term, intermediate term and long-term plan for the implementation of a team approach;
- describe and demonstrate strategies both for building cooperation and trust within teams during the organisational development process and subsequently sustaining it, making use of well-designed supporting instruments;
- explain the essential attributes required for teachers and school managers in shaping the quality assurance and quality development in TVET centres based on a team approach.

3. Quality Tools

What is an organizational and learning culture?
If an organization decides it needs to restructure, then its training system, its management style, its personnel relationships, principles and values, as well as its tools, procedures, and processes will likely all be significantly affected and influenced as the change progresses through its various stages. These tangible or intangible rules, taken as a whole, comprise what is known as the "organizational culture".

Note for users
A positive learning culture is the most important key for success in learning. TVET organisations are required to shape the most positive learning culture. All the structures must be designed to support learning in a positive way. All members of an organisation should participate in the creation of a positive learning culture. Quality culture results in common success and the feeling of shared pride and honour.

The organizational culture is formed within a framework of goals and objectives determined by the members of an organisation, along with the teachers, and the working principles under which the scope of duties and responsibilities are well established. In this sense, the organizational culture is defined as the norms, attitudes, behaviours, values, beliefs, habits and work systems which guide the behaviours of the employees in an organization. Thus, the organizational culture comprises a series of symbols, rituals, and inclusive uniform understandings. An effective organization with an organizational culture formed in this way, over time transforms into a generally cohesive workplace where all personnel subscribe to and embrace a shared workplace culture. This culture in Quality Issues enriches with quality and creates a inclusive atmosphere in the workplace.

This different organizational culture which is formed with quality development approaches refers to the quality culture of the participants in TVET centres. This quality culture results in common success and the feeling of shared pride and honour. All the employees working in an organization should participate in the creation of quality in the development and delivery of its goods and services. Naturally, it covers all the processes from the design process to the production process; and, of course, this means a new organizational culture.

On the other hand, the organizational culture prepares the environment in which concepts such as openness, communication and motivation are experienced in a more meaningful way. The most important conditions of group work are that the employees should be open and honest with each other and, to facilitate this transparency, they need good communication skills. Communication leads to learning and mutual understanding. And this results in the honesty element which directly affects success. An organizational culture must establish an environment which puts people and learning first. In short, an organizational culture is formed by employing different approaches to learner centred teaching.

As a result, managers, teachers and participants are motivated to work in cooperation for the success of a desired outcome of the learning process by taking into consideration the advantages and status they obtain by teaching and learning in the TVET centre they belong to. Continuous improvement and establishing quality can be made possible by improving the "individual quality" in an organization. Therefore, the learning and teaching process are central to the approach with support to specifically facilitate motivation taking precedence over enforcement of rules. In other words, this means, the way people work together must be constantly framed in a positive manner and seen as a prized attribute. A team approach offers substantial opportunities for cooperation and satisfaction.

Thus, successful implementation of a quality culture is based on systems which continuously improve the human resource inputs such as motivating the employees, guiding them, providing learner centred teaching which aims to increase their level of knowledge and skills, and enriching their work. Improving the quality of human resource inputs and maintaining on-going development should naturally lead to the improvement of the organization; resulting in quantifiable improvements in its efficiency and effectiveness and learning outcomes.

What is a mission and vision and how to develop it – a process?

Mission – why a mission is helpful?
A mission reflects and explains the reason for the existence of an organization. This we express with questions within the mission triangle:

- What are we doing now?
- Why are we doing it?
- How are we doing it?

The answers to these questions indicate the mission. Mission is also the answer to these questions:
- Why do we exist?
- What do we believe in?

Thus, the determined mission facilitates managing the processes. And the principles evolve into practice at this point.The answers to the following questions should be given in order to determine the mission of a TVET centre/organization:

- What is our situation today?
- What is our duty?
- What do we do this for?
- How and why do we do it?
- Why do we exist?
- What is our main area of qualification?
- What are the distinctive features of our TVET centre/organization?
- What determines the distinctive features of our TVET centre/organization?
- What are our desires for the future?
- How will the TVET centres/organization meet its goal?

Tasks of a Mission (have to be considered in the context of a mission for a centre)

- It introduces the TVET centre's/organization's duty to the relevant organizations it serves.
- It guides the school/ organization for determining a direction and objective.
- It is taken as the basis for determining the TVET centre's/organization's policy and strategy.
- It helps establishing and improving the TVET centre's/organization's culture.
- It determines the TVET centre's/organization's service fields.
- It motivates the works of the TVET centre/organization.
- It enables the TVET centre/organization to determine and improve its processes.

The determined and described mission becomes the main element in the TVET centre's/organization's plans and its decision-making processes. The TVET centre/organization takes into consideration the assigned duties and changing environmental factors with the regulations while establishing the mission statement.

Sample Mission Statements
Our basic function is to implement the education-training programme determined for our TVET centre in the most efficient and effective way by taking into consideration the environmental factors; to provide an educational service in line with the student abilities and needs; to prepare the suitable environment to enable the participants improve their abilities so as to meet the social, cultural and economic needs; and to increase the quality level of learning in the school.

Sample Organization's Mission Statement
It is our mission to maintain efficiency and effectiveness in the central and provincial organization of the Ministry of National Education (and other Ministries); to evaluate the education continuously through providing investigation, research, consultancy and training services to the managers in order to improve the quality level; and to make the development activities continuous.

Vision – why a vision is helpful?
Vision is related to the future. Vision is a statement of the expectations and desires of the TVET centre/organization staff and society for the future. Thus, it forms a bridge between the present and the future. It is a guide which shows the way to access a better and realistic future for the TVET centre/organization. The vision of a TVET centre/organization is a horizon which is drawn by the basic acceptances on issues such as the reason for existence.

Answers to the following questions should be given in order to determine the vision of a TVET centre/organization:

- What are our desires and our ideal future?
- What do we want to accomplish?
- What is the legacy we want to leave behind?
- What do we want the society to think of us?
- What should be the position of our TVET centre/organization in the future?

Note for users
Visions and Missions help to guide institutions into the future. First, a Vision, secondly a Mission hast to be defined. All the members of an organisation must participate on the definition process of a Vision and Mission and must accept and support the outcome. Minimum every 5 years the Vision and Mission have to be evaluated.

The TVET centre/organization should carry out a study in the process of forming its vision based on the expectations, principles and values, mission and objectives of the TVET centre/organization, employees, participants, clients/customers and society. It should be examined how much of these are accomplished in the implementation process when the implementation stage starts.

Vision changes depending on the values. For this reason, a vision cannot exist without the values. It is important for the TVET centre/organizations to determine their visions in order to make their middle and long-term objectives clear.

The vision:

- means considering the present situation as a problem or a challenge;
- is the ability to think realistically and strategically about the objectives which need to be met in the future;
- is experiencing a creative tension; (it is completely unclear what is meant here??)
- is to create your own future, (this makes no sense at all in the context)
- the search for vision is a struggle in which a person seeks to give a meaning to his/her life. (it may well be but what has this got to do with a vision for a TVET Centre??)
- is a concrete view of the future based on the abstract?

A vision has three important functions:

- Inspiration: The basic function of a vision is to inspire, encourage and motivate the members of the TVET centre/organization. Thus, the TVET centre/organization's stakeholders should contribute to the vision development process.
- Forming a decision chain: Vision is effective in the decision-making processes. Vision guides everyone in the TVET centre/organization on how to make a decision and what to do.
- Establishing a team scheme: The third function of vision is to join everyone in the TVET centre/organization at a common point and to accelerate the improvement. The teamwork required to meet the common goal is an effective tool in reaching the vision.

Vision Development Process

The basic stage in determining a vision is to reflect the opinions of the TVET centre/organization's stakeholders and to reconcile them at a certain point. Vision can be formed by following the below steps.

- Individual idea sketches: Vision cannot be developed without experiencing the obligation to think and find new ideas. This is the stage at which the employees start to use their potential. We all have something in us which we cannot clearly define or even perceive. Vision can be developed by revealing these fantasies through daydreaming.
- Exchange of ideas within the group: The people reveal their dreams lying in their subconscious. In other words, they draw the picture of their dreams and others can also see these.
- Reconciliation: The vision can be effective from the structuring of the TVET centre/organization when the individual visions turn into group visions. Individual visions gain a general meaning at the stage of forming a common vision.
- Vision to compensate the loss of feelings: It is known that vision improves the sensitivity in humans. Shared vision is important in terms of showing an ideal to the group members, determine the objectives, and improve the sensitivity of employees towards the era – environment and their jobs.
- Vision and structuring: This step involves a kind of strategic planning. Here, new structuring directions and development and guidance possibilities are considered based on the new ideas.

Strategic planning should be made following the steps below after the vision statement is formed based on the completed steps:

- Determining the main objectives to reach the vision,
- Determining the strategies (ways, techniques, methods) in order to meet these objectives,
- Describing the main points regarding the mission implementation. Also, strategic plans should be determined in order to reach the vision. However, it is to be noted that the vision should still remain as a place to be reached in the future.

Sample TVET centre's Vision Statements

To become a centre of education, science and culture in the environment where the services are provided as part of the education and training activity which will take our TVET centre beyond the modern civilization level.

Organization's Vision Statement
To become a model and leader unit which introduces the management approach that helps the formation of an educational system that contributes to our country's objective to become the leading countries, turns education in our country into a privilege for everyone, and educates satisfied individuals.

Development of a mission and vision of your TVET centre
Plan to organize a meeting with members of your TVET centre to define a mission and vision: develop a strategy plan of your TVET centre and the integration of the management and staff.

What is the strategic plan and how to implement it?

Objectives
The objectives determine the short, middle and long-term tendency of the TVET centre/organization and the things that the TVET centre/organization wants. Organizations reveal their understanding and approaches through the values; their devotion through the mission; and the direction of devotion through the objectives. Thus, objectives result from the mission, vision and values.

The objectives are the concrete and measurable steps which take the TVET centre/organization to its vision. The TVET centre/organization will reach its vision when it takes these steps.

Sample Objectives:
- To increase by 20 percent the number of participants who enter the labour market in the 2019-2020 academic year in comparison to the previous academic year 2018-2019.
- To reduce by 10 percent the rate of failing in the 2019-2020 academic year in comparison to the 2018-2019 academic year.
- To increase the number of participants in technical fields in the 2019-2020 academic year by 20 percent in comparison to the 2018-2019 academic year.

Strategies
A strategy involves the steps to be taken by the TVET centre/organization in order to meet its objectives. Strategies are the plans, pathways, and techniques chosen by the TVET centre in order to meet its objectives. Strategies include statements which indicate how the objectives will be met, and the amount and types of resources to be allocated. More than one strategy can be prepared for each objective and a single strategy can bring success for more than one objective. Answers should be found to the following questions regarding the strategies:

- How will we meet our long-term objectives?
- How will we meet these objectives?
- How will we get to the desired level?

Policy: Increasing the efficiency and opportunities through training and communication.

- Strategy 1. Improves the participation and efficiency.
- Strategy 2. Provides possibilities for training in order to increase the opportunities.
- Strategy 3. Improves the communication and strengthens the loyalty.

Implementation of the Strategic Plan
- Implementation of the strategic plan covers the activities which involve obtaining results by applying the strategies. The responsibilities should be determined in implementing the plan; and work plans should be prepared for the departments/units in the TVET centre/institution. In this process, the level of efficiency will increase if the employees make their individual work plans.
- It is possible to see and monitor the implementation of strategic plan as follows.
- It is seen that the preparation and implementation of a strategic plan covers many activities.

- It is also known that strategic planning and strategic management requires a multilateral perspective. The TVET centre/organization leaders should manage this process in the best possible way. Management leadership will be an important factor for the success or failure of implementing the strategic plan. It can be seen what is important and effective in preparing and implementing a strategic plan with a holistic approach.
- Strategic planning brings a new work culture to the TVET centre/organization at the preparation and implementation stage. The TVET centre/organization becomes advantageous compared to the other TVET centre/organizations thanks to this work culture. The implementation results of the strategic plan constitute an important database for determining and learning the TVET centre/organization's performance. It can be tested if the objectives are met based on these results and these results contribute in the next planning process.

Exercise: Development of a vision and mission of your TVET centre

- Plan to organize a meeting with members (teachers and managers) of your TVET centre to define a mission and vision: develop a strategy plan for your TVET centre for implementing a mission and vison and a team concept.
- Develop a plan how to train and how to prepare the whole staff of your TVET centre for the work under a team concept and a different form of organisation.
- Make all the pre-preparations for a successful meeting! Take care of the topics and questions which are written above!
- Design a plan how to implement the defined mission and vision.

Re-shaping the work organisation via a team organisation to support quality and to enhance a new culture

In the context of establishing a new culture based on a vision TVET centres establish team concepts to meet their objectives. To do this means to develop an implementation strategy first. A strategic plan brings a new work culture to the TVET centres/organizations at the preparation and implementation stage. Part of this new work culture is the implementation of a team concept. This requires a lot of effort and discipline by all staff members of the centres. The main characteristics of team roles are summarized in Figure 6. It emphasizes the autonomous and responsible role of the teams and their team members in the context of teaching and learning.

More details about the advantages of team development as well as the requirements of team development under the roof of TVET centres will be explained in the next steps. The concept for it is mentioned very pragmatic.

Note for users

A positive learning culture is the most important key for success in learning. TVET organisations are required to shape the most positive learning culture. All the structures must be designed to support learning in a positive way. All members of an organisation should participate in the creation of a positive learning culture. Quality culture results in common success and the feeling of shared pride and honour.

"the 3 x 12 arguments supporting TVET centre development as a team process".

The first 12 points are for "motivation" for teamwork (cf. Q-tool 1) because of the many positive aspects for teamwork. The second 12 points are for the organisation of how to "work in a team". Work in a team has to be learned and is a permanent process of learning. The third 12 points are linked more to the TVET centre as an organisation and dealing with the topic of "teams and TVET centre

development". This is important because a change towards a team concept has many consequences for the organisation of TVET centres themselves. These 12 points form a frame for the reorganisation of TVET centres under a team concept.

Figure 6: The main characteristics of a team role

Main characteristics of Team Roles

Work in TVET centers

- Each member of the team is responsible for teaching and preparation, assessing students' progress, relevance of course contents and individual unit/subject reviews
- The team leader is responsible for efficient management, course team meetings and the annual review

Quality Vision - asserts that:

- The quality of teaching is more likely to improve through the decisions of relativity autonomous teams.
- This type of arrangement capitalises on the implicit knowledge of each team member and thus increases the propensity for innovative performance.

Q-tool 1: Guidelines for motivating teamwork – Twelve arguments

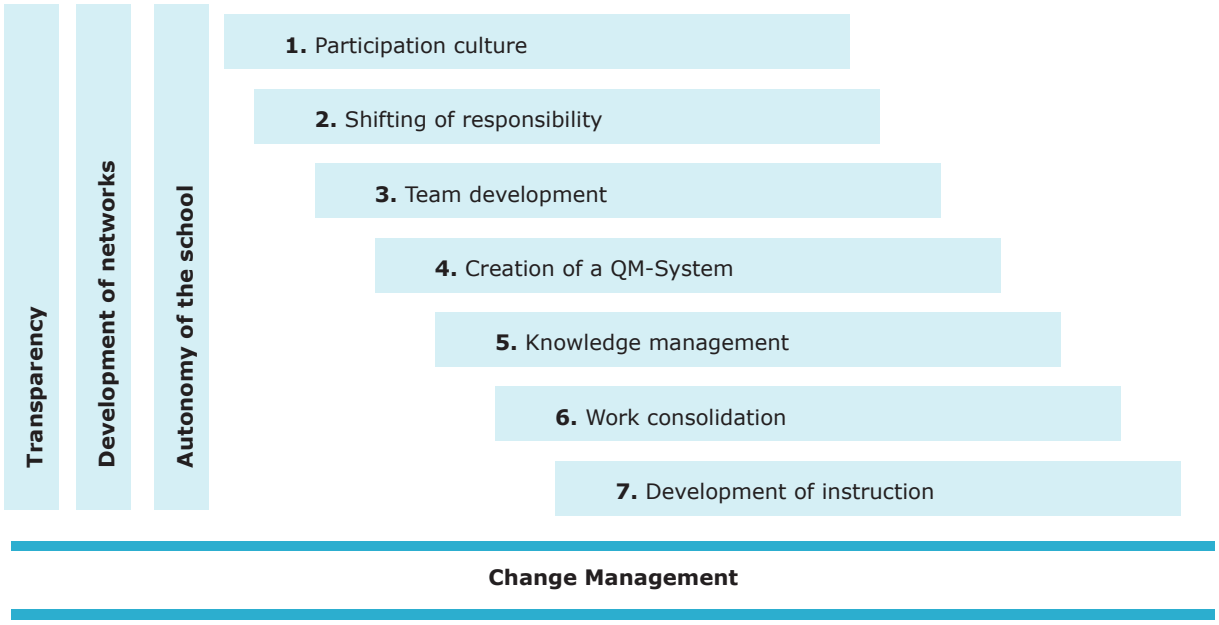
No	Items	Check
1	**Identify Team Leader** Teams of colleagues with an extensive autonomy take over the responsibility for the development of instruction related fields of tasks and thus make a central contribution to an instruction centred TVET centre development.	
2	**Provide Peer Support** The teachers support each other with the concrete planning of instruction, its realisation and evaluation and thus make sure that TVET centre work processes are effectively shaped in the long term.	
3	**Create Platform for Sharing** Work in teams improves the chance for the further development of instruction due to a higher range of ideas and an intensive exchange of experiences with other colleagues: The team knows more and motivates	
4	**Promote Togetherness** If teams consistently adhere to the jointly agreed overall concept, the impact of instruction is increased by clarity and coherence.	
5	**Encourage Team Balance** Team work helps to deal with conflict situations as participants can address several contact partners who are communicating with each other: The team balances.	
6	**Resolve Conflict** Team members further develop their own ability for diagnosis by common discussion on possible solutions for a conflict. This has an immediate impact on the quality of TVET centre work.	

No	Items	Check
7	**Communicate More** The communication between the teachers becomes closer and more intensive in a team. New colleagues thus find it easier to integrate themselves into the TVET centre life. The absence of a teacher from instruction can be better compensated.	
8	**Creative Team Organisation** The practice of a lively team organisation is conveyed to the cooperative teamwork of the participants.	
9	**Support Social Competence Development** The cooperation in a team supports the social competence of all members of a team and creates fields of specialist meetings between the staff members. Individualisation and "lonely warriors" decline whereas there is an increase in networking of the teaching staff.	
10	**Tasks Distributed Within Members** Within teams, tasks are distributed according to the expertise of the team members. This increases the quality of TVET centre work and the efficiency of the work of the entire team.	
11	**Teams Collaborate with Enterprise** Teams organise the cooperation with enterprises more effectively by internal delegation. In the medium term this leads to less time spent per teacher.	
12	**Develop Network Between Teams** The membership of a teacher in e.g. two teams creates networks between the teams, results in impulses for the structural coordination of the teams and intensifies the exchange of information within the TVET centre.	

Five core steps of the development of teams

Based on surveys, in TVET centres priority is given to "10 fields of development" as there are team development, shifting of responsibility, transparency, development of instruction, knowledge management, participation culture, creation of quality systems, work consolidation, development of networks (cf. Figure 7). In the course of the process focus will be laid on team development in TVET centres. To form teams in a TVET centre needs some time, energy, discipline and changes of the hierarchy. Because the process of building high acceptance needs a lot of efforts. But if teams are working successfully in TVET centres it is easier to manage and monitor all the parameters which are mentioned in Q-tool 2 and characterised as the "twelve prerequisites for a successful teamwork of colleagues". A team building process usually follows these 12 prerequisites. Q-tool 3 explains the five-core step for a team development process under the roof of the 12 prerequisites.

Figure 7: Overview of the fields of development



Q-tool 2: Work in a team: Twelve prerequisites for a successful teamwork of colleagues

No	Items	Check
1	**Target** The team of colleagues needs a target namely in the field of instruction as the core area of the TVET centre	
2	**Autonomy and Positioning** The team needs sufficient autonomy and sustainable agreements on the framework of acting. It needs a clear-cut position within the organisational structure of the TVET centre	
3	**Support** The team needs reliable support: e. g. further training in project management, negotiations, facilitating techniques, conflict management, management of meetings. It needs resources, incentives and time for personal	
4	**Time for development** The team needs time for the phases of its development: orientation, conflict, organisation, and integration.	
5	**Distribution of tasks and roles** The team needs a clear and meaningful distribution of tasks and roles.	
6	**Culture of relationships and dispute** The team needs internal and external as well as esteemed and trustful relationships. It needs a constructive culture of disputes.	
7	**Leadership Function** The team needs a leading function in order to work in a result oriented, time efficient and transparent way.	

No	Items	Check
8	**Basic Planning** The team needs mandatory basics to plan the organisation of its work, e.g. project structure plan, flow charts, milestones, work packages.	
9	**Balance: factual level relationships** The team needs a balance between the factual level and the level of relationships: It makes sure that there is a balance between the coping with tasks and the interrelationship of people.	
10	**Communication and feedback** The team needs a clear communication and concrete feedback	
11	**Success** The team needs a feeling of success	
12	**Team-checks** The team needs regular team checks.	

A team development process can be summarized in 5 steps. The process itself might take up to two years – see Q-tool 3.

Q-tool 3: Team development: Steps to team development processes

Items Description	Check
Step 1: Target description of team	
Formulation of "SMART":	
Specific: Clear and detailed target definition!	
Measurable: Determine benchmarks and indicators!	
Attractive: Targets must motivate!	
Realistic: Set achievable goals!	
Time bound: Set a deadline for achieving the goals!	
Step 2: Decision making mode in a team	
Knowledge on application of Hierarchy principle	
Knowledge on application of Majority principle	
Knowledge on application of Qualified majority/blocking majority	
Knowledge on application of Consensus principle	

Items Description	Check
Step 3: Internal communication in a team	
Legitimacy of source of information confirmed. Who is informing? What is the source?	
Target to be informed confirmed Who is informed? Who is our Target?	
Date information provided confirmed. When is information provided? What Time? How long is the duration?	
How liable is the information culture? Degree of liability	
Step 4: Management of meetings	
Is there a clear visualization?	
Is there a clear structure?	
Is there a clearly defined framework?	
Is there a time frame set?	
Is there a clear agreement on team development?	
Step 5: Module conducting conversations/team	
Handle of social distance (intimate, personal, societal)	
Perform informal start of conversation (space, time, body, talking …)	
Execute controlled dialogue	
Apply RPS-Formula (room, person, situation)	
Exercise "active listening"	
Synchronize of body signals (macro-, meso-, micro-level)	
Perform conflict management	

Principles of development of teams in a TVET centres

To enhance team development as a core activity with a focus on the shaping of teaching processes needs a number of different activities. 12 key points have to be answered first to initiate a process of development. The twelve key points of "TVET centre development" serve as a guideline which introduces a change management process including the implementation of a team concept. A TVET centre with the whole management and staff has to take care of these 12 topics for further development if an implementation of a team concept should succeed.

Teams and TVET centre development: 12 Key Points of TVET centre Development

1. Teachers are in a constant process of life-long learning, similar to students.
2. Organisations must learn to react to new changed requirements.
3. Similar to all other organisations, TVET centres tend to repeat routine activities and to insist on determined targets.
4. A learning TVET centre passes through learning processes in order to adapt to the changed framework conditions and to shape instruction in an effective way.
5. This requires a cooperative leadership style, the delegation of responsibility, a multitude of participation opportunities for all key players as well as a great amount of space for shaping and autonomy for the teachers.
6. The TVET centre management must develop a leadership culture which promotes the identification of the teaching staff with the TVET centre, which establishes openness, and which encourages experiments and innovative projects.
7. This implies knowledge of the region, of the customers (stakeholders) of the TVET centre and their demands, expectations and postulations.
8. A set of instruments is necessary: self-guiding instruments within the framework of TVET centre quality development, instruments of accountability and participation instruments for the joint shaping and development of the TVET centre.
9. Individual measures which are not linked to a long-term overall concept and are not supported by medium-term strategies are generally not leading to success and generate frustrations. TVET centre development can only be successful with a holistic approach and a corporate identity supported by the teaching staff.
10. A quality management of instruction can most easily be reached by comparatively autonomous teams of colleagues. This form of organisation safeguards the intensive use of the potentials and the explicit knowledge of the team members and thus increases the chances for innovative performances.
11. A planning confidence of several years and a clear positioning of the team within the TVET centre structure are the prerequisites for a successful and sustainable work of the teams.
12. Teams and working groups are both working in a TVET centre. Teams cooperate on a long-term basis and concentrate on the planning, the execution and the evaluation of instruction. Working groups, however, have a limited time frame and a clearly defined work order within an area of the TVET centre or they are working inter-disciplinarily.

Task: Development of a mission and vision of your TVET centre (see Q-tool 4)

- Study the pros and cons of work in teams in TVET centres and under a new form of work organisation.
- Study the "the 3 x 12 arguments supporting TVET centre development as a team process".
- Study very carefully the different approaches of work and develop together with your colleagues a strategy and concrete implementation concept for your centre.
- Develop models, how to reorganize the traditional structure of your TVET centre towards a team structure.
- Design a team structure which support first of all the learning activities.

Intermediate Check-up of Team development

Q-tool 4:Key questions to support teachers and management direction for Quality

Key Question	Check
Organisational Support	
1 Is mission statement available, clear and understood by everyone?	
2. Is the quality mission available and well-constructed?	
3. Are the areas for development identified?	
4. Is there an established/organised method on TVET management	
5. Is there an established method to communicate the ways management should support the process of team development?	
6. Is there a clear relationship between team development and change of organisation?	
Change Management	
7. Is the direction of change clear?	
8. Is Change Management a way to initiate new development strategies in TVET centres and to support team approaches?	
9. Is Change Management helpful for implementation of team approach?	
10. Important measures to be taken for support is clear for further development of TVET Centres.	

Key Question	Check
Team at Risk	
11. Advantages of team concepts are clear and well understood by all staff.	
12. Disadvantages of team concepts are identified and counter measures available	
13. Is there a need to change the classical bureaucratic organisation model of TVET centres to support team models	
14. Are teaching staff prepared for work in a team concept?	
Team and Centre Development	
15. Is the organisational structure at TVET Centres allow for coping with complex task?	
16. Is the organisational structure at TVET Centres allow the centre to be dynamic?	
17. Is there a need for the staff to be prepared to support changes and to work in teams?	
18. Is there a clear structure for team concept at TVET centres?	
19. Is there an initiative to work towards employing team concepts at TVET centres?	
20.Reorganise the channel for communicating team and centre development available /established at the TVET centre?	

The team concept – A Key to Improve the Quality of Teaching and Learning comprehensive background[6]

Team organisation as an element of Change Managements

The term Change Management in the context of this paper is taken from the field of business economics, and not from the field of TVET centre research. It is used to describe the role change in a wide context including both internal and external environmental factors and applies to a changed role of self-perception of TVET centre managers, teachers and all TVET centre employees in respect to their particular and overall contribution to the desired organisational culture of the TVET centres. The term Change Management relates to a willingness and propensity to embrace agreed and desirable change in support of the TVET centres objectives. It does not mean changing the management personnel of a TVET centre.

Note for users

Team development is a very comprehensive process which needs time and a lot of efforts. Team development is a key issue to initiate a process of change in TVET centres. In the text you will find explanations about the background of teambuilding processes. Please study this text with a focus on the organisational aspects and design an organisational model for your centre for the implementation of teams.

The paper describes the challenges faced by TVET centres and how to meet these changes by more flexible TVET centre structures.

6. The original version was created by Torsten Grantz, Klaus Prütz and Georg Spöttl. The actual version was optimized by Georg Spöttl in 2019 and prepared for use within RECOTVET.

Change management encompasses all measures necessary for the initialisation and the implementation of new strategies, structures, systems and behavioural patterns.

According to this definition, Change Management includes measures in order to realise, to anticipate and to implement change. It rather describes an operational level of change by the creation of framework conditions and infrastructure. Beyond this methodical definition Change Management in TVET enters can be perceived as the sum of all planned changes of processes and organisational structures with the aim to adapt them to changing environmental conditions. The system must be energised. A differentiated Change Management thus deals among others with issues of organisation, personnel management, TVET centre management, communication, and information. The introduction of the organisational concept of team structures is one possibility to energise the processes and the courses of an organisation.

The necessity to introduce a Change Management for TVET centres may be justified by the fact that the pressing development of the vocational world of work continuously entails new challenges for TVET centres. The current and increasingly swift development of changing work structures, technologies, and occupations because of digitalisation forces vocational education and training to adapt to these changes, also in the light of the progressing globalization. The rigid bureaucratic and hierarchical structure of the vocational education system of the Vocational Technical TVET centres do not always allow for the necessary, adequate and flexible adaptation of occupational structures and competences to be imparted. Vocational education, however, must immediately react to the changes in the world of work and in the society and thus avoid a gap in the modernisation of the training between TVET centres and the labour market. Thus, skilled workers have to be trained according to the future requirements.

In addition, the structural change in the worlds of economy and work leads to the fact that a life-long employment – i.e. employees remaining in the same company starting with their training and ending at the age of retirement – is no longer the rule. This is why the aspect of life-long learning takes over a new and more important role, and so does further training. Especially in regions which are considerably prone to structural changes it is necessary to tune the employees and the skilled workers to the new conditions of the labour markets and to further train or re-train them. Within the regions – and especially in structurally weak regions – the TVET centres act as crucial institutions for both professional vocational education and further training. They should have the capacity to actively and autonomously influence the restructuring process. Should TVET centres be empowered to actively play this role, they have to respond to these changes in a flexible and dynamic way.

This will, among other factors, be facilitated by TVET centres gaining increased autonomy. The TVET centres should be able to flexibly react to regional structural changes and to adapt their instructional practices accordingly. One possibility for an energising of the organisation is the introduction of ***team organisation***. This concept will be further dealt with above. Primary targets such as improvements in quality and efficiency of instruction should always be the focus of the considerations. All measures should be oriented towards this assumption.

Above are also listed the 12 key points of TVET centre development interlinked to team development.

Chances and risks of the introduction of team structures within the framework of a Change Management process

So far the organisational culture applied in TVET centres is often not based on team structures. The teachers see themselves as "lone warriors". New curricula stipulating the student-centred concept require a higher amount of coordination amongst the teachers. Autonomous teams, however, such as stipulated for a team organisation structure are rather the exception in TVET centres at present. The term of *team* is therefore applicable to individual teachers rather than to groups.

As a rule and according to the classical bureaucratic model, the system TVET centre is structured as an organisation of distrust. This is, for example, reflected by the development organisation and the traditional system of the external TVET centre supervision. It is this very system which – through the control of determined stipulations – rather preserves the status quo and does not promote innovations in TVET centres. Nevertheless, it is necessary to create a TVET centre organisation that promotes more trust in order to reach the goal of a flexible, dynamic TVET centre system. This current predominant structure of the workplace of a teacher leads to the view that teachers see themselves as structural "lone warriors". The compulsory attendance at the TVET centre is mostly only true for the teachers' instruction hours. This is why they are usually not present in TVET centre. This is underpinned by the fact that there are often not yet any adequate working conditions for the preparation, the follow-up and the coordination of instruction. Adequate work places, materials, Internet access etc. are mostly non-existent. In addition, the TVET centre organisation leads to a constant shuffle of the present teachers. Instruction is carried through on the pedagogic responsibility of the individual teachers. This is why teachers are normally "TVET centre-parochial" persons.

With the introduction of a new organisational concept the question must be permitted whether it entails advantages compared to the old concept because the work done currently by the teaching staff is not worse just because they are "lone warriors". Here are the strengths/assets of the traditional TVET centre structure:

- well-rehearsed work routines,
- high autonomy in respect to instruction design,
- significant available time,
- preparation and follow-up of instruction as well as corrections are done whenever the teacher wants to do it, rather than to be forced to: higher grade of concentration and willingness to perform,
- hardly any social control through teams or others.

This is opposed by the fact that the teacher must work on his or her own. This is also true in case of problems with the instruction and with its preparation and follow-up. Little exchange of information with other members of the teaching staff does not result in input by colleagues. The individual teacher is faced with a high need for work discipline in the traditional organisation form as he or she must motivate himself or herself for his or her tasks. In addition, teachers often feel that their work is never done. Contrary to this, teamwork leads to a better exchange of experiences and to a better coordination of the instruction. Nevertheless, it will be a new experience for part of the teaching staff to coordinate their work with other colleagues in the TVET centre. In general, the need for communication will increase in the TVET centre because a shift of competences requires that the knowledge of decision making must be passed on within the organisation. Therefore, the time expenditure for team organisation will at first increase during the implementation phase. In addition, the teachers will experience the unfamiliar social control of a team. There are a great number of arguments contradicting these critical remarks: 12 arguments for teamwork of colleagues are mentioned below which help to learn about the positive matters of teamwork (cf. Table 2).

One of the challenges of the implementation of a team organisation is the formation of groups, a result of flat hierarchies and structures which are considered inefficient. These groups sometimes feign an already functioning team structure at the TVET centre. If a team organisation at the TVET centre was to offer the full range of advantages it is, however, necessary that teams at a TVET centre do not informally work together but are institutionalised and professionalised. At best a personal workplace should be offered to each teacher. This workplace is also the contact station for the participants. In addition, it would be very reasonable for the implementation of a team organisation if the teachers were present at the TVET centre within core working hours. Nevertheless, the chances for a realisation of this approach are rather low due to financial reasons and the expected resistance. Therefore, the following ideas illustrate how to anchor a team structure within the TVET centre organisation:

Table 2: The principles of Change Management support the introduction of a team organisation

Principle 1	Change is a process, not an event
Principle 2	The TVET centre is the primary unit for change processes
Principle 3	An organisation does not change itself until the individuals initiate the change process
Principle 4	Innovations are always implemented in differing forms and periods of intensity
Principle 5	Interventions are always a necessary action and the key to successfully proceed with changes
Principle 6	Although bottom-up and top-down strategies may be successful, a horizontal perspective should be the aim
Principle 7	The administrative leadership is essential for the success of the change processes in the long-term
Principle 8	The assignments of mandates may support the success
Principle 9	There is a significant gap between what should be reached and what is actually implemented
Principle 10	It is a team task to pave the way for change processes
Principle 11	"Adapted" interventions reduce extraordinary challenges during changes
Principle 12	The context of the TVET centre has a considerable influence on the change process. (Based upon G. E. Hall/Sh. M. Hord)

The Team as an element of TVET centre organisation

If a TVET centre wants to ensure its pedagogical mission for the participants, it must be adequately and appropriately structured in terms of work organisation. This is crucial for coping with the routine tasks. On the other hand, the organisation must swiftly react to initiatives taken by teachers, participants and external partners and must be highly sensitive towards new challenges. The TVET centre needs a dynamic balance between stability and flexibility during the development process. This will lead to the question whether the traditional allocation of participants to age group classes or training age groups with generally determined periods of time is still an acceptable solution for today's generations of participants and their learning problems. The task behind this question becomes even clearer by envisioning that the implementation of student-oriented learning concepts with self-guided learning phases in open learning centres is still a considerable challenge for the line management and organisation of a TVET centre.

In order to be able to cope with the increasingly complex requirements with ever more variable framework conditions, the professional cooperation of the teachers must be intensified. All characteristics that hamper innovation, such as "lonely warriors" and a degree of unwillingness to discuss problems, have to be reduced. On the other hand, measures to increase motivation such as collegiality, cooperation and continuous exchange of experiences in case of professional problems have to be intensified.

The basic goal is the implementation and the support of a professional cooperative culture of the entire teaching staff which can only prosper through an efficient team culture of the teachers. Teacher cooperation and collaboration are important prerequisites to improve the grade of quality in TVET centres. Only then will the TVET centre be able to handle the increasing complexity and variability of the current challenges. Figure 8 gives an overview of allocation of the different complexity of tasks to a variability of solutions.

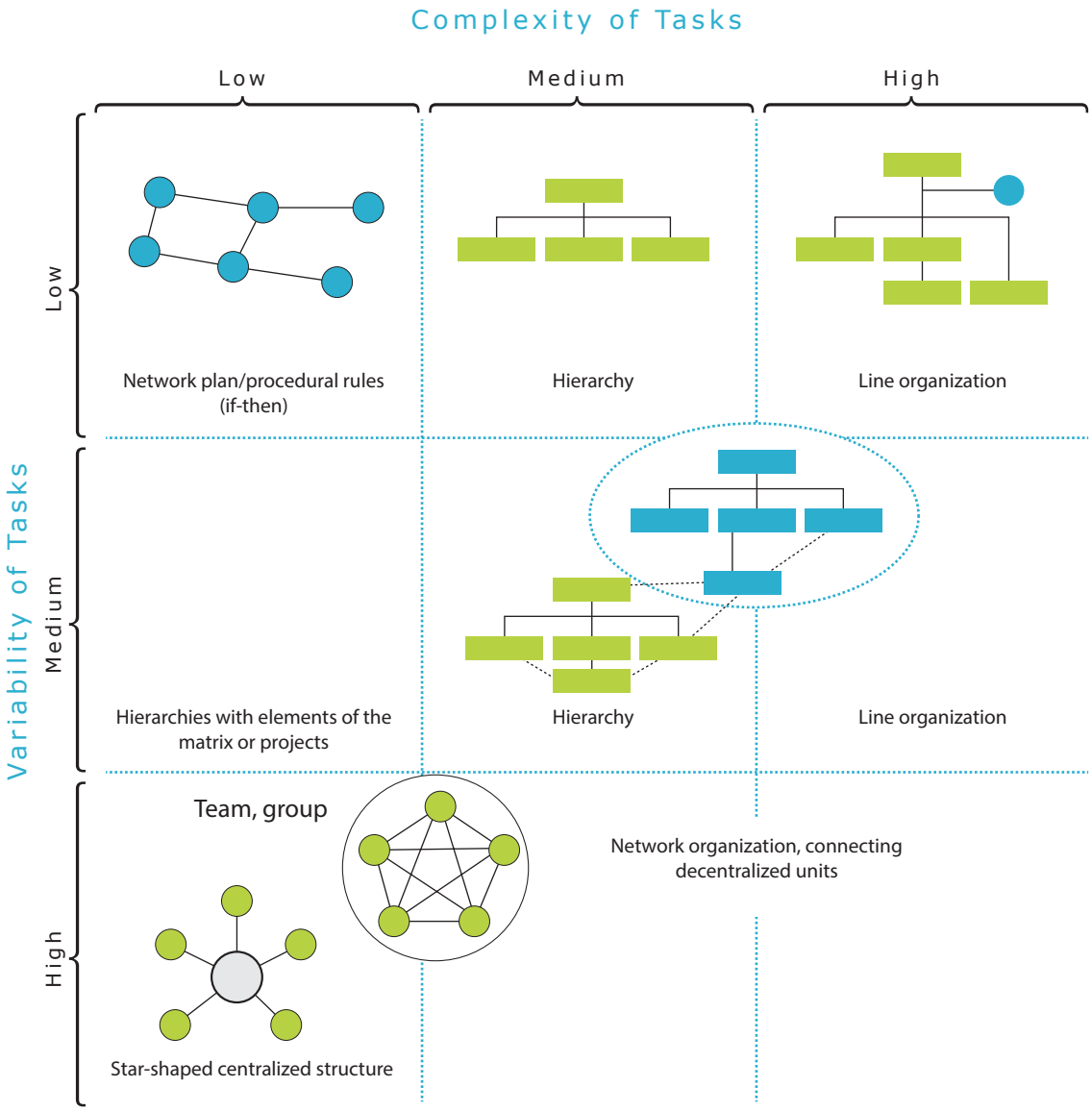
The tasks with increasing complexity are for example, diagnostic questions, internal differentiation in heterogeneous learning groups or the work in learning fields. The variability of the tasks is underpinned by the extent of the practised internal and external networking or the variety of working with projects. Thus, the grade of complexity and variability exerts a clear influence on the organisational structure of the TVET centre.

Experienced directors of TVET centres (e. g. Schwenger) states that the line organisation allows for coping with complex tasks, however, only with a low variability. As soon as the variability of the tasks is rising along with their high complexity, institutions with decentralized units linked to a network organisation are more favourable than a line structure. Some call such a multi-centrally structured organisation "heterarchical organisation". It is made up of small and comparatively autonomous elements, i.e. local centres or teams that are guided by target agreements and form components of the TVET centre network.

An example of a TVET centre very clearly describes this heterarchical approach as "a TVET centre within a TVET centre":

"In order to create small manageable and permanent orientation systems for participants and teachers, our big and non-distinctive TVET centre is organised into age-group units. These TVET centres within a TVET centre have a high grade of self-responsibility and autonomy … The TVET centre's hierarchy is thus more or less abandoned, responsibility is delegated to a greater extent, the individual teams are assigned a variety of tasks, starting with the setting up of the yearly working plan up to the management of their own budget."

Figure 8: Organisational structures in TVET centres



(Source: Schwenger, NAOB, Cologne)

With regard to team structures it may be stated:

- A team can be a central organisational element of a TVET centre.
- A teaching staff working exclusively in teacher teams changes the TVET centre structure.
- The TVET centre structure may be oriented to line organisation or to a decentralised, networked structure
  - ◇ according to the estimation of complexity and variability of the tasks and
  - ◇ dependent on the grade of autonomy granted to the team.

Prospective teams have to be embedded into the work organisation of the TVET centre whose structure should be changed. The following questions have to be clarified:

- Are the teams of the traditional line assigned to the respective department?
- Are they included in a matrix organisation transversally to the departments?
- Will they be placed as islands along the line structure with the aim to increasingly intensify the network of these islands and to slowly dissolve the line?

Or will an organigram – such as cf. Figure 9 – be realised: The innermost of two concentric circles aligns the administrative services. The outer circle reveals the occupational and occupational field related teams who can tap into the required services of the inner circle (media, EDP etc.) by rotation.

If a TVET centre sets out to become a team oriented TVET centre, the staff must first and foremost deal with and clarify these questions prior to starting the process.

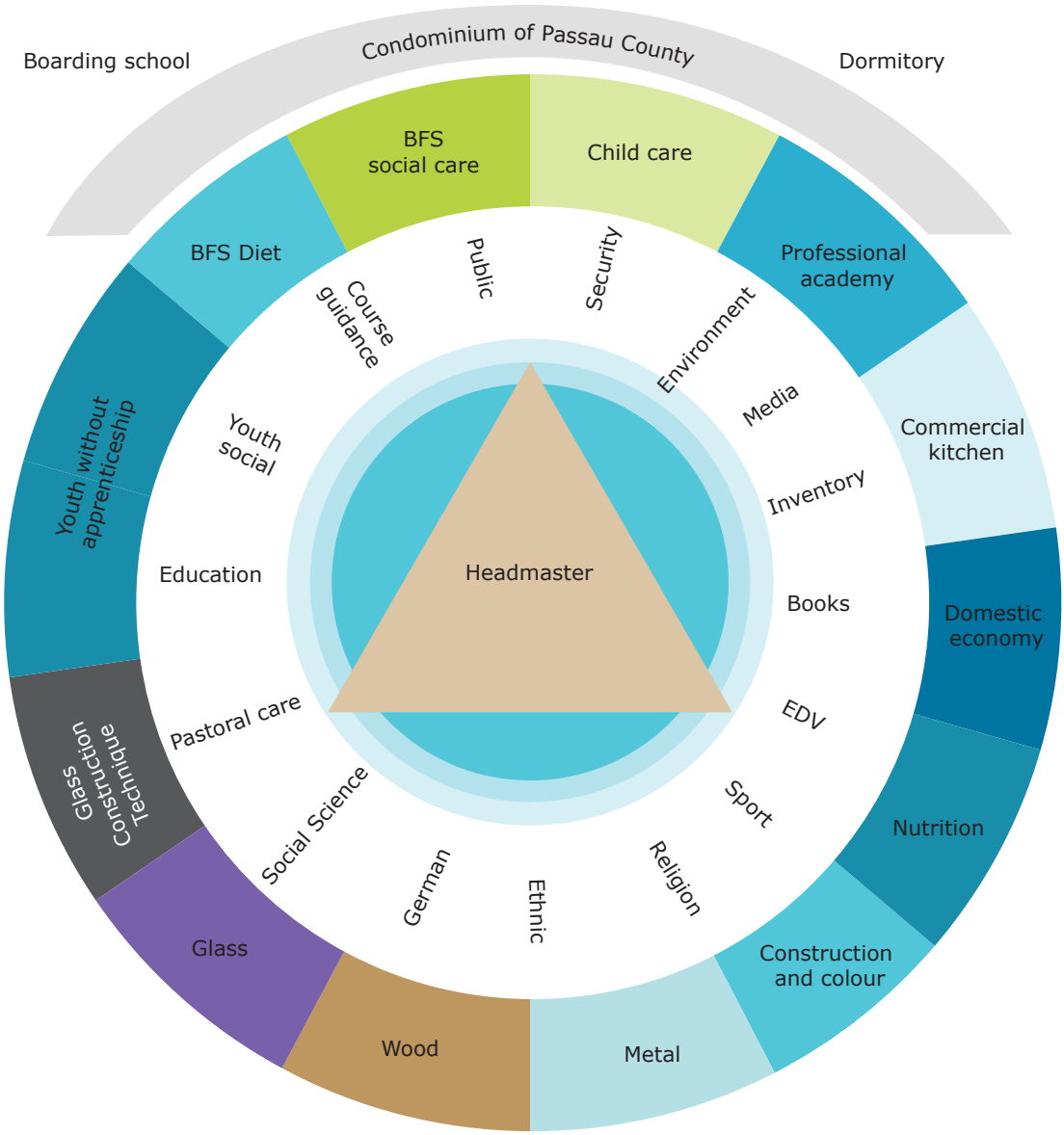
Impulses for the development of a team oriented TVET centre

Within the framework of teamwork in TVET centres, the following might be stated with regard to team development:

Conceptual reflections and planning coordinated with the entire TVET centre are rather rarely the reason for the implementation of team concepts in TVET centres. The existing teams can be characterized as practice communities generated by their daily work.

This sentence contains clear criticism but also the unambiguous requirement that the path towards a team oriented TVET centre calls for careful planning of the team concept within the context of TVET centre development and an implementation with care. The TVET centre management should give a lot of attention and a high amount of commitment to the construction of the team concept and should clearly adhere to the participatory approach.

Figure 9: Organigram of a TVET centre, working with teams



Important questions for clarification before work with teams start:

- In which field will the teams be installed?
- Which are the crystallisation cores, the attractors, for team building?
- What will be the degree of autonomy granted to the teams?
- What will be the consequences for working conditions and the field of tasks of a team?
- Which ranking is assigned to the development of instruction?
- How will the teams be embedded in the TVET centre structure and network with each other?
- How can an institutionalised dialogue of the team/ the teams with the TVET centre committees and above all the TVET centre management be assured?
- Which incentive systems should be created?
- Which supporting working groups should be implemented and how should they be structurally installed?
- Will the triggered process be continuously evaluated and adjusted if necessary?

Prior to starting teamwork – and this must not be ignored – the positive decision of the majority of the TVET centre community to take this path must be ensured.

The path will be more voluntarily pursued if all persons involved can see a concrete benefit for themselves and for the institution. This benefit can be accessed by the teachers as soon as they engage in work in autonomous teams and experience teamwork as an additional resource for the solution of imminent problems. Provided the TVET centre management actively supports this approach, teams can become learning workshops where research is done in terms of curricula, didactics, methods and social issues.

Teamwork can diminish the considerable spreading of teachers' achievements and generally increase the grade of performance. This is not only true for a team but is also applicable to the networking of all teams in the long term. This positive effect presumes a clear-cut commitment of the TVET centre management for the development of teams. TVET centre Directors have given the following statement within the framework of a study on the development: "It is common sense that teachers per se are not able to work in a team. Therefore, it is a crucial element of TVET centre development work to engage in team development". Many authors and teacher underpin this statement by casting doubts on the fact that a scientific teacher training guarantees the development of comprehensive social and emotional competences as well as of a basic competence for change.

In this situation the TVET centre management is required to give a clear impulse for the development of teams. A culture of trust, dialogue and cooperation must be established. Valuing collegiality, sustainable reliability, clear communication, participation in central processes and delegation up to the delegation of responsibility have to be repeatedly operationalized during concrete meetings.

This approach needs strong supporting measures:

- teacher training to prepare for work in a team, to professionally make use of the tools necessary for teamwork, including the dealing with internal and external agreements,
- training of the steering group with the aim to professionally design the structural changes in the TVET centre,
- training of evaluation consultants in order to develop evaluation procedures or to adapt them according to the state of the development and to implement them in the TVET centre.

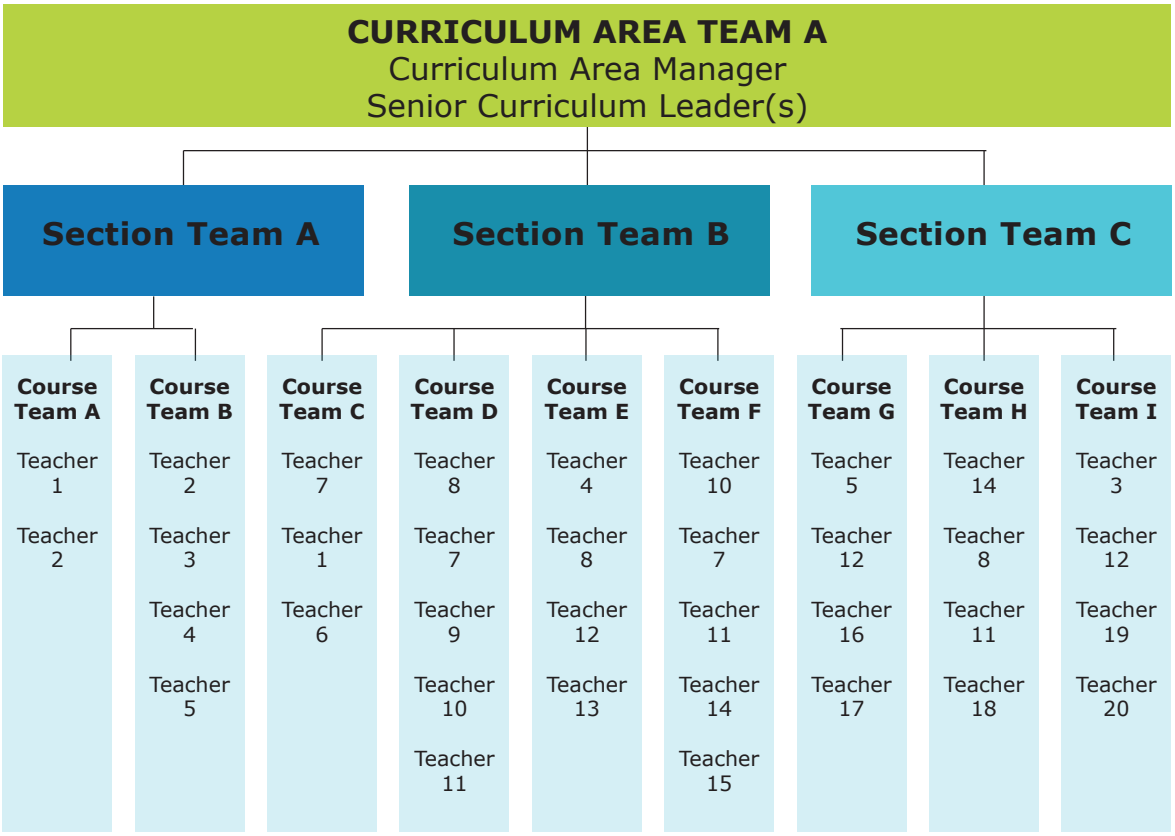
Determined team structures are a crucial element to increase the efficiency of instruction as a core area of TVET centre quality. The development of instruction needs the team as a forum of reflection of a changing and further developing instruction. This path is long and not without obstacles and needs stamina. A team oriented TVET centre cannot be developed in a first approach by simply integrating the teachers with the aid of group dynamic training albeit an unchanged structural organisation of the TVET centre. A team oriented TVET centre can neither be created if the structural organisation of the TVET centre is restructured according to the team concept, i.e. if teams are created and placed at the respective intersections of the organisation. Both approaches are unsuccessful – neither per se nor as a synthesis – as soon as a crucial prerequisite is missing: In order to be convinced, able and willing to work in a sustainable way, teachers have to realize a meaningful and motivational perspective of their pedagogical work This is more than an intentional conscientious task with the aim of an efficient performance. There are 12 prerequisites for the success of collegial teamwork mentioned above.

Example: Work of teams in practice

Which team structure would be the right within a special context? Why?
There is no single team structure that is "right" for every situation. Teams need to evolve and the structure of the team must be able to adapt to the changing demands of the Institution and awarding bodies, whilst being flexible enough to allow members to leave the team and for new members to join.

The size of a team will be dependent on the scope of delivery. A team of 2 is in a way possible to deliver a very small programme. More commonly teams will be of 3 to 5 at delivery level with members being part of several different teams according to their subject specialism. Additionally, the team leader will differ from team to team and a member in one team could be the leader of similar personnel in another. The basic model in College M. is shown below (cf. Figure 10)

Figure 10: Example: Basic model in College M



A Key Question of the Common Inspection Framework to be asked is "How effective are leadership and strategic management?" The inspectorate is keen to point out that leadership is not just concerned with the work of principals, chief executives and their senior managers, both with the roles of people throughout an organisation.

Which principle leads the construction of teams? Why?

Empowerment is not new but requires a commitment to allow staff to manage themselves to some extent within a calendar of events and Curriculum Area Manager's job to moderate and set rules to work within. Staff need to know that they are respected and trusted to make decisions, but they know they will have the backing of their manager within the rules we work with. Local agreements exist depending on the specific nature of a particular curriculum but tied into the overall operational procedures of the Quality framework and working practices. Staff have to be challenged when neces-

sary and then this sends out a message in itself because if the manager's standards are high (but achievable) then the staff tend to respond because they know they will be challenged if the system fails. If managers failed to work to similar standards, then they would lose the respect and allow standards to slip.

Which methods assure that the team is a part of the TVET centre (team-TVET centre -identity)? (How)?

The makeup and roles of each team are determined by the respective Curriculum Area Manager. However, college–wide guidelines for the operational aspects of a team are stipulated within the quality framework. These help to set out the general requirements of lecturers, team leaders and other team members so that all staff are aware of their responsibilities. Each team will be recognised within its peer group as contributing to the overall success of the department as a whole. Because many staff are members of different teams, both within the department, and sometimes in different curriculum areas, there is much scope to share good practice and to ensure an element of competition exists.

Which methods assure that person and team fit together (person-team-identity)? (How)

The experience reported by one manager from operating this way is that staff themselves soon weed out the poorer performing members and although not saying it straight out start selecting teaching units to eliminate the weaker members. Team members usually put 'team selection' down to work ethic and the ability of those team members to actually function in a team environment by attending team meetings, producing required information on time etc. It doesn't suit everyone but because of the efficiency drives and reduction of course hours it becomes a focus that 'intelligent' staff are aware of. Staff actually ask for certain members of staff for their teams which the manager sometimes has to moderate (everyone wants the best staff on their teams and they know who they are) and teams monitor success at individual unit/module level. If results are poor for specific units, the manager together with the team investigate reasons for that and try again with a different staff member. If results are still poor, then we investigate the specifications and look at some more relevant units. Of course, this requires some staff training but again team building requires this as well and giving ownership to the teams. Staff have been lost through this approach obviously, but the results have improved.

Which functions/tasks have the teams?

Each team takes overall responsibility for the management of the course of study, from planning the delivery and designing assignments to monitoring participants' attendance, assessing their work and tracking their attainment. The team leader is responsible for maintaining a file for the course that includes the following information where appropriate:

- approval documents from national and validating bodies,
- syllabus and course handbook,
- schemes of work for each course component,
- timetables for each year of the course,
- names, qualifications and experience of staff teaching each component of the course and the course and year tutors,
- targets for enrolments, completions and attainment with trends over last three years,
- names of participants, contact points and brief notes on, for example, participants needs and/or disciplinary matters,
- composition of the course team and minutes of course team meetings,
- methods and practices adopted in assessment, including the timetable of assessments, the timetable for the return of participants' work, marking schemes and the criteria for assessment,
- programme of assignment and project work,
- examination papers and any other assessment,
- current internal verification tracking records,
- reports of external verifiers and moderators,
- arrangements for tutorial and pastoral support for participants, including evidence of contact with parents and/or employers,
- arrangements for work experience and feedback reports,
- features of special interest. e.g educational visits, entrepreneurial activities,
- course review and quality improvement action plan.

Which roles are within the teams? What are people doing and how?

Each member of the team is responsible for teaching and preparation, assessing participants' progress, relevance of course content and individual unit/subject reviews. The team leader will be responsible for course management, course review meetings and the annual course review. Course team meetings should be arranged every 6 weeks and they should use the College's Charter and, in particular, the Curriculum Entitlement and Assessment Policy along with relevant aspects of Common Inspection Framework, as their quality specification.

Meetings should be minuted with action points emphasised clearly indicating the level at which the action needs to be addressed, with a date. Course Team Minutes should be sent to both Head of TVET centre.

Meetings should concentrate on participants' progress and curriculum. Course teams should address the following prompts during the year with the assistance of appropriate support staff:

AGENDA ITEMS	PURPOSE	FREQUENCY
Matters arising from previous meeting	Review	All
Student's progress and attendance	Review	All
Individual Learning Plans (ILPs)	Review	All
Setting and monitoring course targets		
- Enrolment/Retention/Attainment	Plan/Review	All
Marketing	Plan	Spring
Pre-induction/induction	Review/Plan	Autumn/Summer
Students' and employers' views	Review	As required
Teaching and learning strategies	Review/Plan	Autumn/Summer
Key skills	Review/Plan	All
Learning support		
- EGS, LRC, Support Workshops	Review/Plan	All
External verifier reports	Review	As required
Updating/monitoring course action plans	Review	All
Resources - equipment, accommodation	Plan/Review	As required
Staff development	Plan/Review	As required
Complaints	Review	As required
Appropriateness of curriculum	Review/Plan	Autumn/Summer
Health and safety	Plan/Review	All
Monitoring equal opportunities	Review	All
Course review (SAR)	Prepare/Agree	Summer

How is the team operating/working?

Teams operate within the prescribed guidelines. Provided they perform the necessary tasks, monitored by the Curriculum Area manager, there will be little need for further intervention from a senior level.

Formalised rules? Which rights have the team?

Rights are deemed professional influence. This is manifest in the high level of autonomy course teams have from student selection to detailed course timetabling and assessment policy. It is accountable through line management to the Academic Board, which until recently was a legal requirement.

Exersise

Example of Team Model: Development of a team model for a TVET centre
Assignment ("open, innovative")

Question: How does team model look like for a standard TVET centre and how to implement it?

The structure and implementation of a team model needs all the possible support from all of the staff members from the TVET centre. That means, one of the first steps has to be to analyze exactly how a team concept can be implemented and how the team model has to be designed to get acceptance from everybody. Analyze the TVET centre structure to identify a way of re-shaping the organisation for work with teams and develop a tema concept which gets acceptande form all the staff of the centre. Prepare for implementation of a team model.

Duration: 2 day

Learn and work assignement: Development and implementation of a team model

Target group: Teacher and School Manager; Multiplier Training (Further Training)

Learning and working aids
The following questions and advice will guide you in completing this assignment.

Informing/analyzing
1. Analyze the structure of your TVET centre.
2. Discuss with colleagues possible models of team organization.
3. Decide about the best model of team organization for supporting learning and teaching.
4. Clarify with all the staff members about the re-organization of the traditionell centre organization.
5. Clarify with the management how an implementation process of a team model should be organized.

Planning and decision-making
6. Plan to analyse the infrastructure of your TVET centre.
7. Plan the topics you will dicuss with your colleagues and the centre management and how?.
8. Decide how to make use of "the 3 x 12 arguments supporting TVET centre development as a team process".
9. Develop recommendations together with your colleagues for rearranging the organizational framework to optimize learning and teaching.
10. Present your your reccomendations and an implementation plan to the managmeent.
11. Offer a time frame for the implementantion process.

Execution
Monitoring criteria should be taken into account at all stages of the planned work process.

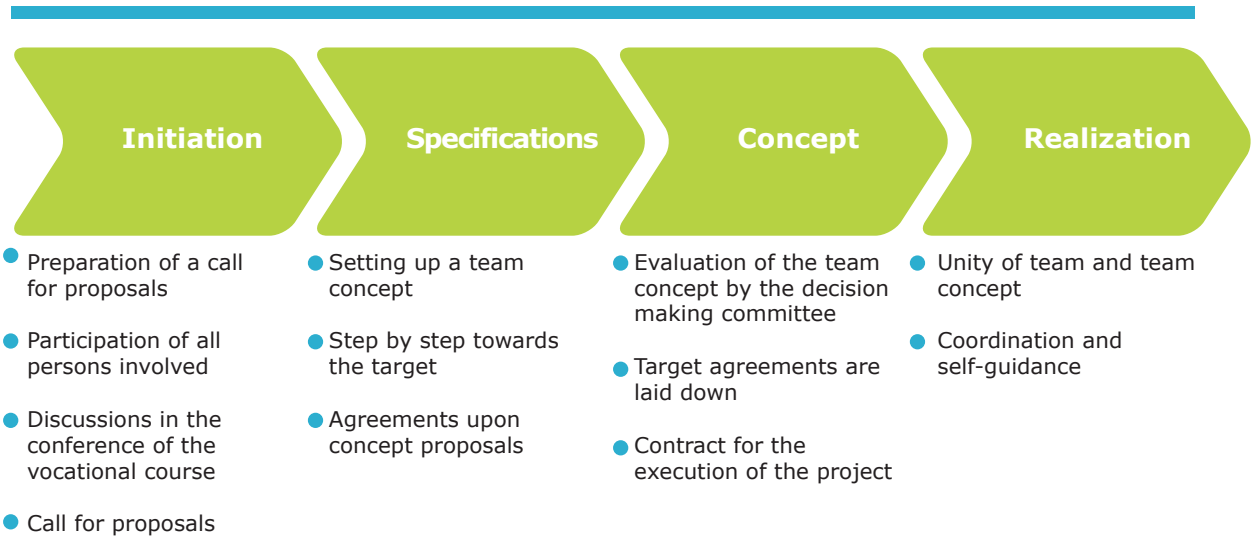
Evaluation
1. Write an assignment report and prepare a presentation for all memenbers of the TVET centre.
2. Present your recommendations and the implementation plan (within 30 minutes):
    - demonstrate the advantages of your recommendations.
    - discuss the changes because of your recommendations.

Summary

Target agreements – Possibilities of an implementation of a pedagogical team concept

- Target agreements stipulate the implementation of an educational measure
- Partners:
  - ◇ Extended TVET centre management represented by the TVET centre director.
  - ◇ Responsible teams represented by the team speaker.
- The target agreements determine the tasks of the teams and of the TVET centre management:
  - ◇ TVET centre management:
  - ◇ Support with the realisation of the educational measure
  - ◇ Room planning, substitution in case of illness etc.
  - ◇ Budgeting, allocation of teacher hours
  - ◇ Teacher team:
  - ◇ Compulsory information of TVET centre management
  - ◇ Allocates the tasks and the hours, obligation to provide proof
  - ◇ Pledges to base the preparation of and the instruction itself on the basis of the pedagogical team concept.

Figure 11: Possibilities of the implementation of a pedagogical team concept – the phases of implementation



4. Key Points

Important questions for clarification before work with the team starts

Summary, Questions and To Do	Check
Summary	
1. Quality Management and Quality for TVET differs. In quality, concepts for TVET learning and teaching have to be the focus.	
2. RADAR - Results, Approaches, Development and Review helps, to analyse a situation in teaching and learning to develop ideas for better quality.	
3. Learning Culture – A human centred position in shaping the TVET centre organisation, the learning and teaching visions, the management style and the social structure.	
4. Creation of quality within all areas of the organisation and participation of all members of the centre.	
5. Environment of the TVET centre is oriented on the approach of "student centred learning" and quality improvement.	
6. Mission – guides the TVET centre and learning and teaching.	
7. Vision – is a future oriented direction of a TVET centre, accepted by all members.	
Questions	
8. In which field will the teams be created?	
9. Which are the crystallisation cores, the attractors, for team building?	
10. What will be the degree of autonomy granted to the teams?	
11. What will be the consequences for working conditions and the field of tasks of a team?	
12. Which ranking is assigned to the development of instruction?	
13. How will the teams be embedded in the TVET centre structure?	
14. How can an institutionalised dialogue of the team/ teams with the TVET centre committees and above all the TVET centre management be assured?	
15. Which incentive systems should be created?	
16. Which supporting working groups should be implemented and how should they be structurally installed?	
17. Will the triggered process be continuously evaluated and adjusted if necessary?	

Summary, Questions and To Do	Check
To Do	
18. Develop a Vision and Mission for your Centre and develop an implementation plan.	
19. Check, how your TVET centre needs to be re-organised to implement the developed Vision and Mission.	
20. Analyse the "3 x 12 arguments" under the question: how to make use of it for implementation and how it supports a new, user friendly structure and learning and teaching.	

5. Checklist

Please use the "Quality Check List" together with your partner to reflect on the training quality. Please determine the strengths and possible needs for action and decide at which points you would propose improvements.

Quality Check List
Meaning of the scale:
++ everything is fine;
-- action is needed for improvement;
+ everything is satisfactory
- improvement is proposed

Mission and vision for TVET centres	--	-	+	++
The power of a mission and vision for TVET centres is very helpful for improvement				
The staff members should define a mission and vision of their TVET centres				
A mission and vision show the medium-term development of a TVET centre				
The impact of the mission and vision for the improvement of outcome quality is ensured				
Team concepts for a new dynamic in TVET centres				
New roles of management when team concepts are established				
Role of staff members when a team concept is established				
Different types of team approaches and their advantage and disadvantage				
How is the interrelation between team concepts and output quality of teaching?				
In a team structure cooperation in teams has high priorities – are team members prepared for this?				

Mission and vision for TVET centres	--	-	+	++
Team concepts and change management				
It exists a close relation between team work und change of the organizational structure				
Via Change Management many innovative movements can be initiated in TVET centres				
Changes of the structure of TVET centres are needed for successful work in team concepts				
Team approaches in TVET centres can be only implemented successfully if the traditional form of work organization is changing				
The 12 principles of Change Management form the frame to support teamwork				
A successful team organization requires flat hierarchies in TVET centres because of high autonomy of the teams				
Team concepts in a TVET centre need a team culture which has to be developed. Dialogue, communication, participation and cooperation as prerequisites for a team culture				
Team concept and learning and teaching				
The main advantage of team concepts is the higher autonomy and working within flat hierarchy				
Team concepts are a positive way for better quality in teaching and learning				
Team concepts put the students in the centre of all actions				
Teaching staff is prepared for work in a team concept				
Teams and their organization				
The line organisation of TVET centres are in a position to allow for coping with complex tasks				
The multi-centrally structured organisations are better foundations for dynamic TVET centres and team work				
The staff in TVET centres is prepared to support changes and to work in teams?				
What type of team structure might be the most sufficient for TVET centres?				
The TVET centres prepare themselves for initiating team concepts?				

CHAPTER 3: QUALITY TOOLS FOR THEMATIC AREAS

Thematic Area 2:

Paradigm Shift in Learning and teaching at TVET institutes - Quality Development

1. Introduction

Purpose

Quality Assurance (QA) is well known as a pillar of the work in TVET centres. Quality Development (QD) ensures improvement of quality of each student in TVET with the help of the learning and teaching process.

When to use it

QD ability must become an important issue for the learning process because many parameters are available within learning that exert an impact on the quality of the outcome. QD must become part of the daily routines of TVET practitioners.

Setting

Learning and teaching methods, support of digital media and learning environment have to be designed in a way to support learning in the best possible way.

Facilities and Materials

Pin boards, workshop materials (cards, markers etc.), projector, visualization board, working materials (from the teachers), teaching aids, digital media, laboratories…

Notes

Examples and "best practice" models are helpful to demonstrate how quality can be developed in TVET centres.

Firstly, Quality Development ability highlights the demand for quality development. Secondly, the progress of QD has to be verified. Quality in this sense means that it was developed in the process of learning and teaching which is first of all influenced by the applied teaching methods. QD during the process of learning and teaching is one of the three pillars of Quality in TVET institutes. The other two pillars are Quality Management (QM) and Quality Assurance (QA).

The topic helps to develop competences to make successful use of QA, QM and QD approaches to support learning and teaching processes and the pivotal role of teachers and managers in shaping quality improvement processes. The topic aims at enhancing the capacity of TVET teachers and managers on quality systems at the operational level.

2. Objectives

The objectives of this thematic area are to …

- differentiate between Quality, Quality Management, Quality Assurance, Quality Development and Quality Development ability;
- describe the different pedagogical models for quality improvement;
- arrange learning processes and modern and innovative learning methods to ensure outcome quality;
- explain the essentials as teachers and/or TVET centre managers in shaping the quality assurance and quality development in TVET provision;
- design output- and outcome-based QA and QD instruments for learning and teaching processes,

These objectives are guidelines for working with the thematic area. For the participants they give an orientation of what should be reached within the training activities.

3. Quality Tools

Why developing quality?

Quality development requires commitment and time. First, it is necessary to start talking about quality. This initial step must be stimulated and accompanied – equally by everybody involved in vocational education and training[8]. Second, teaching approaches in relation to quality must be discussed under the aspect of quality development within learning processes. Some guiding questions are mentioned in Q-tool 5.

Q-tool 5: Key questions on the importance of quality

Questions	Check
The importance of quality	
1. Is a common quality understanding for TVET centres needed and how should it be designed?	
2. What are the most important development areas in TVET centres and why?	
3. What is the understanding of quality in the further development of TVET centres?	
4. Why quality development is so important?	
5. What is the role of the paradigm shift and its implications?	
6. Is there any advantage in the shift of paradigm?	

Quality development in TVET centres: focus on three areas

Changes in science and technology continue to take place in order to meet the increasing range of human needs in the shortest time and in the best way possible. From the 1990s, it is evident that reengineering, strategic management and Total Quality Management (TQM) approaches have become more attractive and fashionable for institutions than the other alternative management approaches.

The "adventure" of TQM started in industry with the "Quality Examination". After that, it continued with "Quality Control" and "Quality Assurance". Following implementation of these, external factors such as competition, quality, change and client expectations have formed the basis for the "Total Quality Concept" in the management science literature. With some changes, TVET institutions followed the idea of quality improvement mainly via "Quality Assurance", but the three areas below were identified as the most important for quality improvement in TVET centres (See. Table 3). Not all of the three areas are covered by QA.

Table 3: Overview of Quality areas in TVET centres

Area: Teaching/Instruction Development (TD):
Aims:
Shaping of a learning culture,
New positioning of the roles of teachers and students,
Introduction of standards for continuing quality management.

Area: Personnel Development (PD):
Aims:
Identification with the service role of teachers/instructors;
Development and implementation of teaching-oriented management structures,
above all support for teambuilding;
Consideration of a personnel development concept by management and Government.

Area: Organization Development (OD):
Aims:
Needs orientation as the central principle of initial and further training;
Test of structural principles such as modularization, flexibility and decentralized management.

The three areas are:
- teaching/Instruction development (TD)
- personnel development (PD)
- organization development (OD)

After some years of experience with different quality approaches more and more approaches were developed with a close link to the needs of TVET centres and their teaching processes. In this context all the three areas are highly relevant. Additionally, in most of the approaches two further topics are missing:
- learning itself, and
- shaping of the learning processes.

Shaping quality is a permanent requirement in different areas of TVET. This means that quality standards and development processes need to be readjusted again. To achieve this, it can be helpful to distinguish between quality fields. They describe the areas in which improvements are aspired to. Such areas are those mentioned above extended to include the shaping of the learning processes and learning itself.

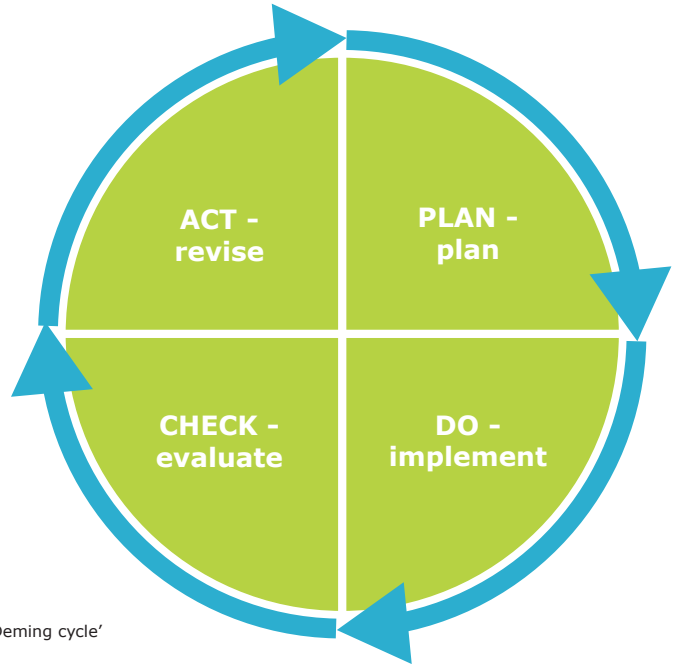
For further planning, a quality loop might be helpful. The most used one is the so called PDCA cycle (cf. Deming 1982) of Figure 12. It can be launched for each quality area. The quality loop enables people to deal with requirements or problems systematically, to plan measures and to find solutions.

A quality circle is a process that facilitates productive discussions about questions arising in the context of such a quality loop. The participants come from different fields of vocational education and training. The intro¬duction of quality circles in the company creates time and space for commu¬nication about problems in training quality and possible solutions. At the same time, a quality circle is a procedure suitable for raising awareness of quality issues – and for developing such quality awareness among all parties involved in vocational education and training.

The work on a quality area can be described as a sequence of four steps [8]:

Plan - You identify needs for action: What should be improved? How can it be improved?
Do – You put the improvements into practice
Check – You evaluate and assess what has been achieved: How successful have the measures been? Is there potential for improvement? Are there better solutions?
Act – You carry out necessary adjustments and take measures to secure what has been achieved.

Figure 12: Quality loop PDCA



Based on the Deming cycle'

To clarify the requirements relevant for quality development, the questions in Q-tool 6 should be answered by the staff of TVET centres.

Q-tool 6: Key questions on the various requirements of quality development processes

Questions	Check
The variety of requirements of quality development processes	
1. What is the focus of the three pillars for quality and why are all three important?	
2. Which standard areas for quality development in TVET centres are in the focus and which dimensions are missing?	
3. In which situations is the PDCA cycle helpful? How might it be used?	
4. How can the output quality (outcome quality) of a TVET centre be improved?	
5. What is the interrelationship between quality development and change in organizations?	
6. How should TVET management support the process of quality development?	
7. In what ways is a quality development framework helpful?	
8. How should quality development and other quality approaches be linked?	

Principles of Quality Development

To enhance Quality Development as a core activity, with a focus on the shaping of teaching processes, a number of different activities are needed. 12 key questions (See. Q-tool 7) must first be answered to initiate a process of development. The text below serves as a manual which introduces a Quality Development Framework (QDF).

Q-tool 7: 12 key questions about quality development

Questions	Check
12 Questions about quality development	
1. What is a QDF?	
2. What is a QDF used for?	
3. Who can use a QDF?	
4. What are the core or essential elements and issues of a QDF?	
5. Why is the team concept a central element of a QDF?	

Questions	Check
12 Questions about quality development	
6. How is a QDF linked to other existing quality systems?	
7. What is the benefit gained from a QDF?	
8. Do you require support from TVET centre management to implement the QDF?	
9. How do I include teachers in the QDF, and motivate them to implement it?	
10. Which resources do I need to implement the QDF?	
11. Why should we implement the QDF in our TVET centres?	
12. Does the QDF require a change in organisation?	

The Quality Development Framework (QDF): Core Questions[7]

What are the core elements/issues of QDF?

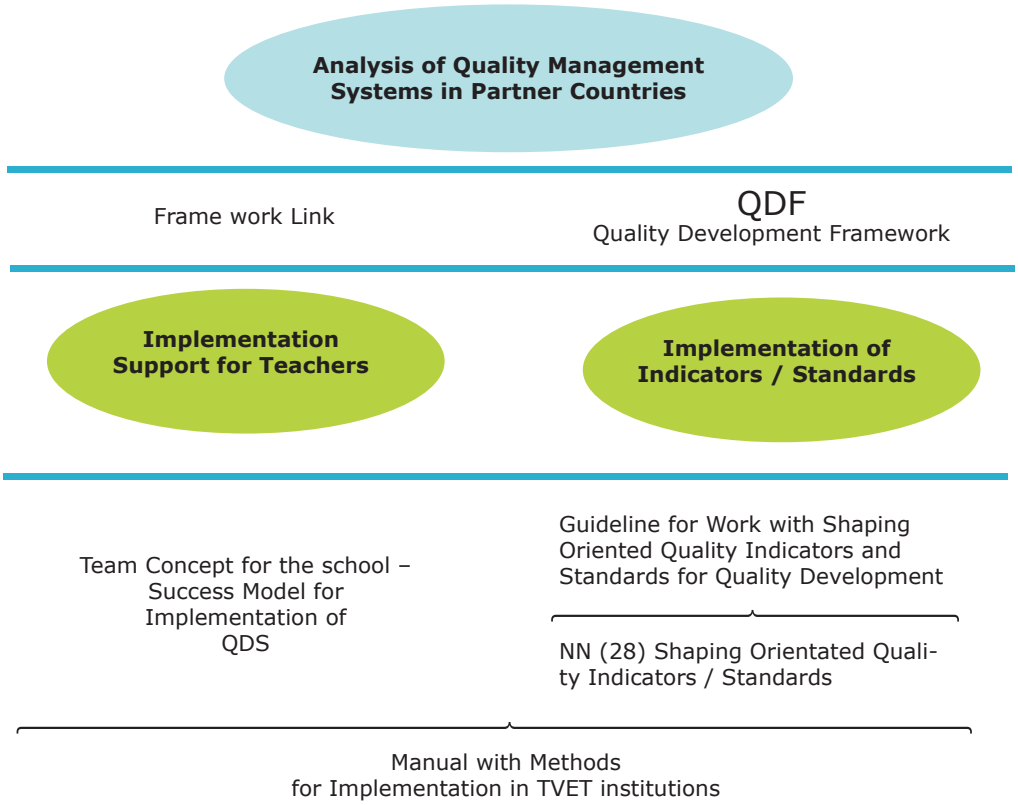
> *The elements of QDF are: a set of indicators (e. g. 28) to detect adequate shaping measures ("developing standards"), a guideline to explain the framework concept and approaches to implement team concepts.*

Figure 13 below presents the entire QDF. It shows at the top, as a starting point the empirical work of developments in the management fields of partner countries: the analysis of existing quality management practice in the fields or sectors. In the context of the RECOTVET project, every partner should analyse the quality management concepts applied to TVET centres in their country. The aim of the analysis is to get an exact image of the success of quality management in TVET within the countries. Within the analysis of a TVET institution, the focus of interviews should be in gathering basic data on its cooperation with companies, the role of existing quality management systems, the current status, problems, previous approaches, outcomes as well as suggestions for actual quality management applications. These results from the empirical basis for the development of the QDF.

7. The project "Quality Development and Quality Assurance" with Labour Market Reference for the Vocational Education and Training System was funded by the European Commission: Leonardo da Vinci. The paper was extensively modified by Georg Spoettl for use in RECOTVET.

Authors: "Quality Development and Quality Assurance" Project Group (Spöttl, Georg; Becker, Matthias; Blings, Jessica; Gessler, Michael; Michek Stanislav). Head of Project: Georg Spöttl

Figure 13: The Quality Development Framework (QDF)



The Framework consists of four main components which are the tools for the two processes to be developed in TVET centres. One process is the optimization of teaching, the other process is the optimization of organization by implementing a team structure.

These processes are supported by

- A guideline as a theoretical basis for a new approach of the QDF. This guideline is meant to support trainers and teachers working in the TVET sector (e. g. teacher training) to identify and transfer shaping measures for an improvement of their training and instruction quality. The theoretical basis of a new quality understanding is outlined. At the centre of the concept is the learning process; this is the crystallization of all the quality related ideas.
- A set of shaping-oriented indicators. These (28) indicators will help teachers and trainers to do a self-assessment of their professional practice together with the identification and development of new teaching and learning practices. Characteristics and quality areas are defined in such a way that they do not focus on the detectability or measurability of a condition but that the changeability/ shaping of a discrepancy between the actual situation and the target state should be the centre of interest. This becomes obvious with the nomination of the QDF quality areas[8]:
  - ◇ the role of the trainers and teachers,
  - ◇ the learning processes,
  - ◇ the training and teaching methods,
  - ◇ the training and teaching contents,
  - ◇ learning environment and the conditions for training in companies and teaching in college and finally,
  - ◇ the reflection on training and teaching.

8. To put different areas into the focus is possible.

Each of these areas is further elaborated using several "shapeable indicators", which are designed to be used by the teachers for their development. These indicators form the framework, by which teachers could self-assess; or in other words, think about their work and performance from different viewpoints.

Characteristics of "shapeable indicators" (See Table 4):
The "shapeable indicators" allow multiple ways to reach the target state described by this indicator. This means that there are many ways how to the reach the objective set up by this indicator.

The indicator suggests, how to approach the opportunity for improvement (problem).

More important than the fulfilment of the indicator is the process of solving the opportunity for improvement itself – "also the way is the goal" – and in here it is especially true. Even if not all the expectations will be fulfilled, any movement forward is valuable and it is the precondition of further growth.

Table 4: Structure of the "shapeable indicators" (example)

Quality area: Role of trainers and teachers			
Key questions	**Practices requiring improvement**	**Desired aim**	**Standards: Adequate shaping measures**
Do lecturers work in teams when preparing to impart specialised contents in their field of technology (and in related fields of occupational activities)?	Lecturers tend to work alone in their own fields of technology (and only consider the occupational activities of their 'clients' that are related to their own specialisation).	Lecturers should also adhere to the team concept when it comes to specialised contents and always consider the related didactical aspects, e.g. of cross-disciplinary learning.	Lecturers • Should be further trained in order to acquire the ability to work in teams, • TVET centre organisation and class schedule planning at TVET centre will be switched to teamwork. • Teams develop their own guidelines for a high quality of instruction. • Teams jointly plan and prepare their instruction

The concrete relation of the indicators to occupational acting implies that the description should lay down the changes with regard to actual situations. Standards, on the other hand, name the requirements for changes.

This element of the shaping-oriented indicators within the development framework is methodologically based on the self-assessment of the teachers/trainers and on the searching for approaches how to develop themselves in some areas of the work. So, it assumes that the teacher/trainers themselves know best what their qualities are, and in which areas, and how to improve.

During the self-assessment in individual areas, the teachers/trainers think of their situation in answering the "key question". They note their current situation in the "present situation" column and compare it with the "desired aim". Several situations may occur during the comparison:

The teachers/trainers find out that the situation is better or the same as the situation described in the "desired aim" column. In this case, they will try to think, if they could improve using any of the procedures specified in the "Standards: Adequate shaping measures" column. If yes, they will note this approach to the "my/our future approach/procedure".

The teachers/trainers find out that they still are not in the "desired aim". The difference between the "present situation" and the "desired aim" situation is different for every teacher/trainer which means there is an opportunity for improvement for the teachers/trainers. They could seize this opportunity in different ways – for example, those that are specified in the "adequate shaping measures". They should then note the procedure for improvement into the "my/our future approach/procedure". If it is found that there is some obstacle in the way in making an improvement, it should be noted as well as providing documentation for further discussion within TVET centre/company (See. Table 5).

Table 5: Work table shaping oriented indicators for teachers/trainers (example)

Quality area: Role of trainers and teachers					
Key questions	**Practices requiring improvement**	**Present situation**	**Desired aim**	**Standards: Adequate shaping measures**	**My/our future approach/ procedure**
Do lecturers work in teams when preparing to impart specialised contents in their field of technology (and in related fields of occupational activities)?	Lecturers tend to work alone in their own fields of technology (and only consider the occupational activities of their 'clients' that are related to their own specialisa-tion).	The capability of teachers for cooperation is not well developed.	Lecturers adhere to the team concept when it comes to special-ised contents and always consider the related didactical aspects, e.g. of cross-disciplinary learning.	Lecturers • Should be further trained to acquire the ability to work in teams. • TVET centre organisation and class schedule planning at TVET centre will be switched to teamwork. • Teams develop their own guidelines for a high quality of instruction. • Teams jointly plan and prepare their instruction.	An open and dynamic culture in the TVET centre where transparency and cooperation is established

A team concept as a success model for implementation. Determined team structures are a crucial element to increasing the efficiency of instruction as a core area of college quality. New curricula require a higher amount of coordination between teachers. The QDR team concept explains the most important principles for change management in colleges which are based on empirical research in colleges.

Last but not least, this publication is meant to support the key players who are interested in imple-menting the QDF with the necessary practical and theoretical information to understand what this QDF is about.

At this stage, it is useful to provide an overview of current requirements of teachers at vocational training TVET centres. Pedagogical aspects of these include:

- shaping of teaching situations in heterogeneous learning groups,

- learning fields and development of learning situations,
- individual learning arrangements,
- diagnosis and forecasting security,
- practice of cooperative learning and teamwork in learning groups,
- forms of cooperation with the objective of improving teaching,
- standards and assessments.

In addition, there are curricular and organisational issues, TVET centre development measures and regional cooperation relations, as well as further and continued training.

Against a backdrop of current societal and economic pressure for continuous quality improvement, the individual teacher cannot sufficiently fulfil the tasks presented to the breadth and depth required. Teaching alone, which expects those learning to accept responsibility for their learning process, requires forms of cooperation and a space for reflection among teachers and with the company partner in order to create a common pedagogical learning foundation in learning groups, and to continuously enhance this foundation. This requires a suitable form of cooperation of teacher teams, which has already proven itself (see Chapter "Quality Culture).

Note for users

In this text the term "shapeable indicators" is used for the description of standards.

Please study the explanations and talk to your partners about their understanding of the term. Try to transfer the term to different situations of learning and teaching in your subject area and define indicators for optimizing the outcome of learning and teaching.

How is QDF linked to other existing quality systems?

QDF is explicit for the work of teachers and trainers at the "classroom level" and the shaping of educational processes and completes the quality assurance approaches of quality management concepts at the level of VET providers.

The Quality Development Framework is based on experience with the application of quality management systems (e.g. ISO 9001:2000, excellence model EFQM, EQAVET model, AQAF model), but it focuses above all on the educational process and on other factors such as teachers, teaching methods, training and teaching reflection, training content, curriculum, outer conditions of learning and conditions for training in the companies and for the teaching in classes), which affect it.

The framework is based on the self-assessment of the work of an actual teacher and on the specification of the development path by the teacher him/herself. It is a framework oriented to the practitioners of a company or college. It can be applied alone or in combination with other quality management systems.

The European Quality Assurance Reference Framework for VET (EQARFVET) claims to cover "at the same time … all the core criteria for promoting quality in VET" and also respects the different local choices within each Member State. This is, also the fate of the AQAF. With this postulation, the AQAF can only remain vague and does not even answer the basic question of quality in TVET centres. Even though the idea of amending the European Qualification Framework (EQF) by an EQAVET is very interesting, it should be stated that the entire character of the EQAVET has so far been formulated in a very abstract way.

Therefore, it is crucial to influence the shaping process from a concrete vocational pedagogical perspective whenever relevant and to add a notion of quality, which is not only clearly describes the term, but which also places the issue of competence development in young people at the centre of all reflections and actual implementation measures.

What is the benefit gained from the QDF?

> The QDF provides clear additional value since it is directly oriented to teaching situations, supports defining concrete actions for improving quality out of the teachers/trainers own professional judgement and leads the user through central and quality-relevant elements of teaching.

Quality management systems often claim to represent a situation-related quality term, but in the concrete implementation of the model, it is mostly abstract terms which are used, separated from teacher-learner situations. A second alternative is that management processes are described which are very remote from the real teaching scenario. The QDF provides clear additional value since criteria and indicators are always directly oriented to concrete teaching situations and have been developed for quality improvement, using teaching as a core element.

Another problem of quality management system is that analytical instruments are often provided to assess current situations. Such instruments vary in nature. Questionnaires have been drawn up for different forms of TVET centre, for different age groups and different groups of persons (learners, teachers, parents, extra-TVET centre facilities). However, once such data has been compiled, the user interested in development faces a key question: What happens now? This step is left incomplete by most systems, since the prevailing opinion is that each person should define his quality himself. We agree with this in principle. The cultural, social and material conditions at various TVET centres are so different that it is not possible to define one single standard which can always be valid everywhere. However, we have not given up a claim with the QDF that such a model could provide orientation and, as such, a statement is therefore required concerning how teaching should be applied. A conceptional objective is always specified as an option in the model: Not as a standard, but as orientation; Not as a statutory requirement, but as a platform for ideas.

This links to the third additional value of the model: reflection. The QDF model systematically leads the user through central and quality-relevant elements of teaching. The questions help the respective teacher, for example, to think about his/her own role or his/her own method. Additionally, the model is scalable: you can use it alone as well as in a team. In general, we feel that individual reflection holds larger risks. It is often the case that developments in one section alone are not possible, since the interlinking of various teaching contents and teaching blocks represent a relevant quality aspect. Simultaneous development of teaching quality and context structures (especially teamwork) creates a greater sustained yield, and it generates greater pleasure and less stress within the team. However, if the conditions at your TVET centres are not oriented to teamwork, you can still benefit from this model. Just try and take the first step.

Do you require support from TVET centres management to implement the QDF?

> Management support is needed to a greater or lesser extent depending upon whether you use the model individually, as a basis for your team work, or as a model in your TVET centre.

The answer can be both yes and no. As already mentioned in item 7, the model is scalable. You can use the model individually, as a basis for your team work, or as a model in your TVET centres. Depending on the range of use required, management support is needed to a greater or lesser extent. Management means the planning, coordination, control, evaluation and improvement of different working processes oriented towards a common objective, in order to achieve added value which would not be possible individually. The basic principle is quality improvement via specialization and professionalization, as well as quality improvement via coordination of partial performances oriented to integrated processes which are aimed at the object of providing service. In an education facility, this relates to education itself, and in a TVET centre it is the tuition or the teachers as the means of

organisation of the TVET centre, and the participants as actors in the learning process.

Management in TVET centres does not serve to generate profits, which is why, in contrast to business-oriented systems, the benefit does not peak at the top (or for the investor), but at the base, where those who learn are located. It is for this reason that management in TVET centres should be planned bottom-up, even if it is implemented in a top-down mode. This is also the reason why we recommend that the model be incorporated in team-oriented work. Management support is given in a team, even if such support is understood differently than the classical idea of management, that is, not as a gradation of division of labour processes in hierarchical structures.

Education in a liberal society should itself reflect the principle of democracy and should make the democratic experience possible for all participants. However, in some TVET centres there are structures which resemble the days of absolutism. In such TVET centres, quality improvement processes are difficult, since responsibility for the system is always shifted from one level up to the next, until it finally reaches the TVET centre director and TVET centre administration. Such a system is dissociated from the claim to provide and develop quality. In such a system the quality claim has to be arranged top-down and controlled, and such a system quality development is difficult to implement without the support or permission of the TVET centres' management. Our leitmotif, however, is a mature TVET centre within a liberal society. Management support is then the task of all participants and not an individual claim to leadership; and quality is not a control task, but a task of creating trust. In some systems this requires a change which includes a change in values. Which brings us to the next question:

How do I include teachers into the QDF, and motivate them to implement it?

> We would like to answer the question with an idea from Kurt Lewin - it is not a question of making the participants feel affected, it is a question of making those affected become participants.

This question addresses the issue of motivation and commitment. Three basic forces foster motivation: (1) Autonomy: that is, to question to what extent decisions can be made by the actor himself and to what extent decisions are experienced as self-determined. (2) Self-efficacy: to what extent can the system provide feedback – feedback from work itself and from participants, and to what extent does the actor feel that his actions have an effect. Finally: (3) Social inclusion: to what extent do I experience social vicinity, support and appreciation, and feel that I belong to a team.

These three conditions are conditions of context: is autonomy possible, can self-efficacy be experienced, and is there any social inclusion? The answer differs from TVET centre to TVET centre and in different levels; the level of autonomy, level of self-efficacy and level of social inclusion is not only different from TVET centre to TVET centre, but also within different TVET centre units, and such levels are subject to dynamics or time waves. Here, we are referring to the natural change of phases of positive and negative atmospheres.

A Worst-Case scenario: Freedom of decision is restricted, feedback is seldom given, and staff are divided. In such conditions, there are more important objectives than the implementation of a new teaching system. First, conditions must be created which enable committed work, or de-motivating factors need be removed. The starting point for quality improvement in such a system would probably be social inclusion, which would then enable feedback and create a basis of trust for more autonomy.

This issue addresses the central element concerning how teachers can be involved and committed in a system which provides favourable starting conditions. We are referring to understanding. An understanding of the idea that a person requires honest, interested and open communication. Without mutual understanding, without the knowledge of the reasons for rejection or approval,

without dialogue, participation is not possible; and without participation there is no foundation for professional arguments as to why and how quality development in teaching is possible. The answer to the question of motivation and commitment therefore ends with a fundamental and classic finding, namely that the relationship bears the issue, while good factual contents cannot be related without solid relationships. To cite an idea of Kurt Lewin, it is not a question of making the participants feel affected, it is a question of making those affected become participants.

Which resources do I need to implement the QDF?

> Important roles are at play concerning the teachers/trainers: time for reflection, a schedule and material resources: a place for team meetings and basic equipment is required in order to be able to demonstrate certain problems in relation to the real professional work processes.

Central resources were addressed in question 9. However, it should not be assumed that only social resources are important and material resources (especially finance) are of subordinate significance. The idea of a company suggestion scheme, for example, arose in a period when organisations had to function with a lack of resources. The lack of external resources referred itself back to the organisations themselves and forced them to activate their hidden resources. These especially involved intellectual resources. The creativity of the teacher provides a variety of possibilities. However, a TVET centre cannot generate permanent top-quality, if it continuously struggles with resource bottlenecks and has to invest all its creativity into the question of how to solve the problem of insufficient teacher numbers, room equipment and materials. As such, a TVET centre cannot bear the responsibility for quality development alone, and the political question must be raised as to how much a future is worth to a society.

Reflection requires time, and teachers should all be given the same amount of time, just as the scheduling of teaching units is also a self-evident factor. Quality development requires a place for team meetings, and team rooms should be a normal aspect, just as teaching would also not be possible without an appropriate classroom. Also, teachers should be relieved of administrative work, which is why well–functioning infrastructure and professional management should provide support externally. Finally, basic equipment is required to be able to demonstrate certain problems in relation to the real professional work processes. For example, learning of automation techniques is simply not possible without this. You cannot have quality free of charge, even if the wave of political quality appeals often conceals this aspect, and responsibility is placed wholly on the back of teachers.

Why should we implement the QDF in our TVET centres?

> Quality development has up to now often been an individualized task and was the responsibility of the respective teacher. This is the new aspect: quality improvement is now seen as a common task, in terms of a complete action (planning, execution, improvement), and is a natural part of teaching.

Our QDF model is not dogma. You can also achieve quality with other QM systems. You can incorporate this model into existing QM systems, or you can make the first step to quality improvement starting with this model.

We would like to distance ourselves from two misunderstandings: Quality improvement is not rhetorical cliché in times of financial cutbacks, in terms of a shifting of responsibility of the quality aspect onto the shoulders of teachers. Quality improvement is not an accusation made by teachers, that up to now this concept had not been present, and only with the introduction of QDF has quality development become a perceived development task.

Quality development has up to now often been an individualized task and was the responsibility of the respective teacher. This is the new aspect: quality improvement is now seen as a common task,

in terms of a complete action (planning, execution, improvement), and is a natural part of teaching. Instruments are provided which, up to now, have not been available. They are part of a reflective modernisation which enhances the scope of tasks of the teacher, which, in addition to the role of content mediator, teacher, consultant and assessor, also includes the role of innovator.

After a long period of constancy, education systems, as well as TVET centres embedded in educational systems, are in a phase of renewal. The implementation of a QDF system is one component of overall development. The European model we are presenting will, we hope, form a part of this development and be of assistance for your work in TVET centres.

Does the QDF require a change in organisation?

> The answer can only be, 'it depends'. For one TVET centre it can be a re-start and for another TVET centre a component in a system already implemented.

To allay any fears, it would be useful at this stage to claim that nothing will change when introducing the QDF. However, such a claim would be dishonest and false. Of course, something will change. However, the question raised here is whether the change of organisation forms a necessary pre-condition. The answer can only be, 'it depends'. Starting positions are different at every TVET centre. It is not only different education traditions and developed structures which affect the education system and grow from this system, but also the history of the TVET centre itself, the environment and the experience of actors which form a basic foundation which can either foster or impede the discourse concerning quality. For one TVET centre it can be a re-start and for another TVET centre a component in a system already implemented.

The extent to which the organisation itself is an issue in QDF depends on the range of application envisaged and the opportunities available. A difference must be drawn here between the criteria system and the team model: While the criteria-system is extensively neutral in terms of organisation, since it is consistently conceived from the teaching standpoint, the team model requires a development process of the TVET centre organisation. The coupling of both elements is useful and, we feel, the better overall model. Therefore, the answer can be stated more accurately: If a TVET centre already operates on a team-based foundation, the organisational framework already exists. If a TVET centre has not yet implemented the team concept, the development task is more demanding. The discussion concerning the extent to which to which a TVET centre is capable of such development is already part of an incipient QDF process.

Exercise: Change of Organization because of QDF

Example of Quality Development: Change of Organisation because of QDF

Assignment ("open, innovative")

Question: Does the QDF require a change in organisation?

The implementation of a Quality Development Framework needs to change an organisation because learning and teaching processes are in the centre of optimization and quality enhancement. This

is different to traditional approaches in which, for teaching and learning processes, a regulated framework is established. Analyze which organisational framework is needed and has to be ensured by management for a successful learning and teaching process in which participants and teachers are in the centre of activities.

Duration: ½ day

Learn and work organization: team of five participantes – teacher as a moderater

Target group: Teacher and TVET Centre Manager; Multiplier Training (further training)

Learning and working aids

The following questions and advice will guide you in completing this assignment.

Informing/analyzing

1. Analyze the structure of your TVET centre.
2. Ask colleagues about barriers to optimized teaching processes.
3. Ask colleagues what has to be changed to get maximum support for learning and teaching.
4. Clarify in which way the organization has to be changed to support teaching and learning.
5. Develop recommendations for a teaching and learning friendly organization.

Planning and decision-making

1. Plan to analyse the infrastructure of your TVET centre.
2. Plan the topics you will dicuss with your colleagues and how?.
3. Plan for the deep involvement of your colleagues in the process of analysing the situation.
4. Develop recommendations together with your colleagues for rearranging the organizational framework to optimize learning and teaching.
5. Present your reccomendations and an implementation plan to management.
6. Offer a time frame for the implementation process.

Execution

Monitoring criteria should be taken into account at all stages of the planned work process.

Evaluation

1. Write an assignment report an d prepare a presentation for all members of the TVET centre.
2. Present your recommendations and the implementation plan (within 30 minutes):
    - demonstrate the advantages of your recommendations.
    - discuss the changes resulting from your recommendations.

4. Key Points

Important questions for clarification before work with team start

Summary, Questions and To Do	Check
Summary	
1. Quality Development should be understood as improvement of quality by successful teaching and learning.	
2. Quality development ensures the improvement of quality of each student in TVET with the help of learning and innovative teaching.	
3. A prerequisite of Quality Development is the willingness to learn.	
4. A quality circle is a process that facilitates productive discussions about questions which arise in the context of such a quality loop. The quality loop enables people to deal with requirements or problems systematically, to plan measures and to find solutions.	
5. Total Management approaches have become more attractive and fashionable for institutions than other management approaches.	
6. Total Quality Management forms the basis for the development of Quality Assurance in TVET institutions.	
7. The three areas – Training Development, Personnel Development, Organisation Development – form the most important areas for quality improvement in TVET centres.	
Questions	
8. What are the three core pillars in TVET centres for Quality Development and why?	
9. Is a Quality Development framework helpful for TVET centres?	
10. What are the core elements of a Quality Development Framework and what role quality indicators take over?	
11. Has the implementation of a team concept in TVET centres any advantages? Which one?	
12. Why shaping oriented indicators are so important within the development of an innovative teaching and learning processes.	
13. What are the so called "quality areas" of a Quality Development Framework? How the indicators must be defined?	
14. Does the QDF require a change in organisation?	
To Do	
15. Define quality areas, quality indicators and standards for further development of your TVET centre.	
16. Develop a team concept for your TVET centre including an implementation strategy.	
17. Develop strategies to ensure the support of the whole staff of a TVET centre for the implementation of innovative learning and teaching methods.	

5. Checklist

Not all of the quality areas are of equal importance for quality development. Please use the "Quality Check List" together with your partner to reflect on the quality of the training and training material. Please determine the strengths and possible needs for action and decide at which points you would propose improvements.

Quality Check List
Meaning of the scale:
++ everything is fine;
-- action is needed for improvement;
+ everything is satisfactory
- improvement is proposed

Mission and vision for TVET centres	--	-	+	++
Developing understanding of quality				
The three pillars of quality and their shortages for the development of TVET centres				
Difference between QM, QA and QD				
Use of approaches to facilitate and improve coordination processes and how to strengthen teamwork for QA				
Impact of the three areas of quality development to improve quality				
Quality management concepts				
Management skills to manage cooperation with industry				
Quality based management concepts and a quality culture in their TVET centres.				
Essentials for teachers and/or TVET centre managers in shaping the quality assurance and quality development in TVET provision				
Strategies to involve the business sector in the QA processes				
Operate quality measures encompassing planning, organisation, implementation and evaluation in TVET centres				
Using quality frameworks				
Role of QM, QA and QDF				
Advantage/disadvantage of QM, QA and QDF				
Implementation of QM, QA and QDF				
Impact of frameworks on quality improvement				

Mission and vision for TVET centres	--	-	+	++
Improving the quality of learning				
Analyse pedagogical models for efficient learning				
Power of different pedagogical models for quality improvement				
Support of learning processes with modern and innovative learning methods to ensure outcome quality				
Motivate participants towards the acceptance of QA and QD processes				
Design of output- and outcome-based QA and QD instruments for learning and teaching process				
Use of self-reliant-learning to support performance of participants				
The methods of training and the self-reliant-learning approach are adapted to the LWAs to support quality				
The course of training is transparent to the participants				
The trainers providing train¬ing who accompany the participants in their learning processes and are available as contact persons				
Securing learning outcomes				
At the end of a learning phase, feed¬back talks are held in which the participants can give and receive feedback regarding their training				
Learning goals are agreed on and evaluated at regu¬lar intervals				
The participants obtain information about the requirements of quality				
Precise insight into the process of self-reliant-learning was given				
Lesson planning using self-reliant-learning was provided				

CHAPTER 3: QUALITY TOOLS FOR THEMATIC AREAS

Thematic Area 3:

Shaping Oriented Quality Indicators and Standards for Quality Development[17]

1. Introduction

Purpose

The successful implementation of Quality Indicators and Standards is based on systems which continuously improve human resources, such as motivating teaching staff, guiding them, providing learner centred teaching which aims to increase their level of knowledge and skills and enriching their work. These are very important parameters.

When to use it

Quality Development in learning and teaching must become an important issue for the development process of TVET centres. Many parameters are highly relevant within this transition. The most important must be integrated with the daily routines of TVET practitioners.

Setting

The Indicators and Standards have an impact on the shaping of learning and the use of learning methods. The learning environment must be designed in a way which supports a development-oriented, self-reliant and student-centred learning culture with people at the centre.

Facilities and Materials

Pin boards, workshop materials (cards, markers etc.), projector, visualization board, working materials (from the teachers). Areas for communication and learning activities to practice cooperation, digital media, laboratories etc.

Notes

Examples are helpful to demonstrate how quality standards can be developed in TVET centres

Guiding ideas for quality: Quality Development – Indicators and Standards

The basic idea of all quality models is the same: Quality management should not only be confined to technical functions safeguarding product quality. Moreover, it is defined with a view to the relationship between the enterprise and its customers. According to Philip B. Crosby, quality is the fulfilment of requirements. The most prominent goal is customer satisfaction which. As stated earlier, this can only be sustainably guaranteed by a long-term development of enterprises or TVET centres. In this sense, this statement is also highly relevant for TVET.

One of the most important ideas is to continuously optimize one's own acting and one's own results and benchmark them against similar or better-quality results achieved in TVET centres.

2. Objectives

The objectives of this thematic area are to:

- express the model of "shaping oriented quality" in TVET;
- explain the impact of quality related standards and indicators in their TVET institutions;
- characterise the crystallization fields of quality development in TVET centres;
- prepare standards and indicators to develop quality in learning and teaching processes;
- differentiate the standards into certain requirements within "quality areas" with the help of key questions; and,
- ensure that the standards are "measurable".

These objectives are guidelines for working with the thematic area. For the participants they give an orientation of what should be reached within the training activities.

3. Quality Tools

Description of a Model of Quality Based on Standards and Indicators

The "Quality Development Framework" includes instruments located at the system level and the level of system providers. It also includes a measurement tool (a reference set of quality indicators) for the purpose of quality improvement of TVET systems and other providers. The approaches developed are very similar to those from common quality management systems which leave the gap to those who are working at the level of the classrooms and training places. The forgotten group in this consideration are the teachers, trainers and the learners themselves. This guideline shows how the learning offered in TVET in a selected sector (e. g. teacher training) can be improved with the aid of "shaping oriented quality indicators" and related standards.

An innovative conception of the development of quality will be described. This is necessary because national and international discussions often concentrate on the aspect of quality assurance for the application of instruments which are intended to help to improve the quality in vocational education and training at a system level. The Quality Development Framework (QDF), however, aims at creating an instrument which will promote quality development based on a set of quality indicators. At a cursory glance, this model may lead to a confusion of terms because the current measurement of quality and result oriented quality objectives have been the methodological focus of quality in TVET. However, this guideline will describe how the quality vocabulary such as quality area, quality characteristic, quality indicator and standards should be used to describe quality improvement and related shaping measures.

What are the guidelines for?

The guideline is meant to support trainers and teachers working in the TVET field to identify and transfer shaping measures for an improvement in the quality of their training and instruction. It follows that the quality of the learning process is the crystallization of all quality related ideas in this paper. In addition to the existing Common Frameworks, AQAF, EQAVET etc. the focus is not only (with the help of the PDCA cycle) on the statement of output and context oriented quality characteristics at the system level but at the level of the TVET provider (cf. http://ec.europa.eu/education/policies/2010/qualitynet_en.html). The following question must be answered looking to these developments for support at the ASEAN level: Where are the supporting tools for the main promoters of quality, the teachers and trainers?

Based on EQAVET in 2010 and the AQAF in 2014 – as a supporting tool to help member states promote and monitor quality improvement of TVET systems – most countries started to develop and implement quality management systems. These frameworks include instruments located at the system level and at the level of system providers. It also includes a measurement tool (a reference set of quality indicators) for the purpose of quality improvement of TVET systems and/or providers (Table

6). The approaches developed are very similar to those from common quality management systems which leaves a gap to those who are working at the level of the classrooms and training places. The forgotten group in this consideration are the teachers, trainers and the learners themselves.

Table 6 demonstrates the different characters of the most QA/QM approaches compared to the QDF approach explained in this guideline. A system-oriented design is compared to a learning process-oriented design. Moreover, the key players will be involved in the quality discussion at the beginning and throughout (i.e. in the learning environment; at the place of learning). The shaping measures are described in the form of standards in order to support the methodology for the change process. Thus, above all an answer is given to the key question "What strategies assure the implementation of change?" Quality development is firstly a "bottom up" process driven by persons who are able to implement change to improve learning.

Table 6: Quality approach of QDF

Approach	Main Objective	Application
System level	Measurement of outputs and outcomes of VET.	QM/QA approaches
Level of VET provider	Measurement of "activities" of institutions to improve quality.	QM/QA approaches
Level of learning processes in VET	Measurement of development activities of teachers, trainers and learners. Measurement of the process of change with a focus on the learning process.	QDF trainers and teachers

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[9] of educational measures which exert an influence on quality and to join their forces. A considerable disadvantage of this approach is that a lot of attention is paid to the determination of a certain grade of quality for each named characteristic and that the acting persons in TVET centres cannot clearly determine what has to be done in order to achieve an increase in quality. For example, in the 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" [4] or Quality Indicator: "Formally recognised figures or ratios which are used as yardsticks to judge and assess quality performance" (ibid.). 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 only consider the formal framework conditions.

Therefore, quality characteristics are developed in the course of the QDF (under RECOTVET) aiming at the change/ the improvement/ 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/ the measurability of a condition but that the changeability/ 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 QDF quality areas:

9 With reference to Altrichter und Posch (1990) these are named input, process and output/outcome qualities in most of the quality management systems for TVET centres.

- the role of the trainers and teachers,
- the learning processes,
- the training and teaching methods,
- the training and teaching contents,
- learning environments and the conditions for training in companies and teaching in class and finally
- the reflection on training and teaching.

The list in Figure 14 shows the general understanding of quality terminology we 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 15). For example: If an instruction method is changed, this entails different learning processes. Despite the interdependencies characteristics, that is, shapeable characteristics, can be named which aim especially at changing a certain aspect of the quality area.

Figure 14: Terminology for quality terms in the QDF

Fundamental Quality Terminology

Characteristic

The property of a person and/or the denomination of an activity or an institution.
Characteristic, touchstone, criterion, feature, specialty, attribute, status symbol (Duden).
Example: The TVET centre is big. "Big" is the characteristic or the TVET Centre.

Indicator

Evidence for the property and/or the designation.
Characteristic serving as a (convincing) evidence or as a hint to something else. (Duden)
Example: The number of students is an indicator for the size of the TVET centre.

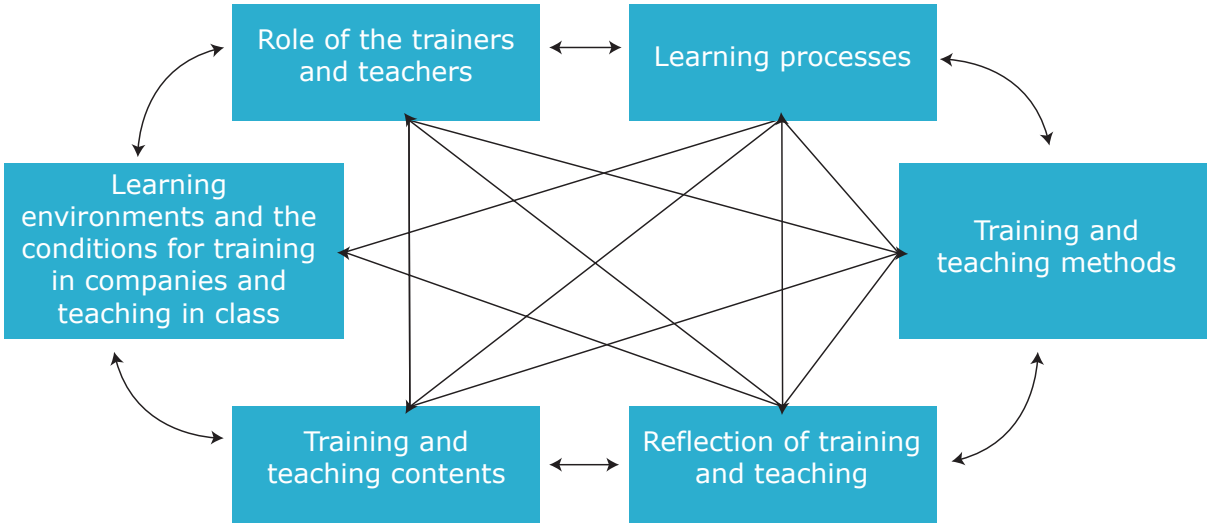
Criterion

A specific characteristic.
Touchstone, differentiatin characteristic, characteristic (Dunden).
Example: The TVET centre has 1000 students, "1000 students" is the criterion that helps to differ between small and large schools.

Standard

The minimum requirement for the specifiable characteristic/criterion. It can also mean a maximum requirement or a medium requirement level.
1. Standard measure, average condition, guideline. 2. General standard for performance, quality, lifestyle , standard of living (Duden).
Example: The TVET centre has more than 100 students. ">1000 students" is the standard for the property "big".

Figure 15: Quality areas in QDF - example: learning and teaching



With regard to the terminology of the quality terms we rely on the fundamental definitions in Figure 14 – 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.

These quality areas in Figure 15 are shapeable areas – see also Table 7. NN (in a concretisation 28) quality indicators are described in these six quality areas which have the function to give support to the key players to shape the circumstances for learning.

Table 7: Links between different quality areas

Quality area	Shapeable area/ addresses for change
1	**The role of trainers and teachers**. It is presumed that a changed self-conception and different ways of acting by teachers and trainers will improve training and class quality. **Key question:** What kind of self-conception supports training quality? **Guideline:** The trainer/ teacher paves the way for a good training
2	**Learning processes/ role of participants.** The design of learning processes has an immediate impact on the learning results and puts the learner at the centre. Trainers and teachers have a strong influence on whether learning processes can take place and can direct them to a certain extent. **Key question:** How is the student placed in the centre of the learning process? **Guideline:** Learning processes support learner needs

Quality area	Shapeable area/ addresses for change
3	**Training and teaching methods:** The central objective of training and the 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 quality improvement need to be determined. The methods also reflect the underlying didactic orientations. **Key question:** Which method characteristics improve the quality of teaching? **Guideline:** The training and teaching methods support the performance of the learners/apprentices depending on their capacity
4	**Training and teaching content:** 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. **Key question:** Which of the structural characteristics of training contents result in competence development in the participants according to their development level? **Guideline:** The teaching content is work process oriented, adapted to the development level of the participants and the result of structuring processes in teamwork.
5	**Learning environments and the conditions for training in companies and teaching in class:** By shaping the learning environment, by cooperating with the company/ TVET centre partner, by influencing the conditions of teaching and training, teachers and trainers have an immediate influence on the improvement of training and teaching quality. The characteristics of that quality focus on achievable objectives that make the development of training and teaching possible. **Key question:** How must learning environments be shaped to improve the quality of training and teaching? **Guideline:** All dimensions of the TVET centre environment support learning processes
6	**Reflecting on training and teaching** will be taken into consideration as a transversal area for these quality areas. Reflecting on teaching and learning processes yields findings which can be used for continuous improvement. **Key question:** What kind of reflection leads to an optimisation of learning in the selected (metal) sector? **Guideline:** Reflection provides a systematic way of detecting possible actions for improvement.

Quality Indicators and Shaping Measures as Standards for Quality Development

When it comes to work with standards[10], a number of questions are relevant. These key questions are asked in Q-tool 8. To answer the questions, you must read the text below the table.

Q-tool 8: Key questions on design of model of quality based on Standards and Indicators

Key Questions	Check
Design of Model of Quality based on Standards and Indicators	
1. What is the innovative dimension of the "Quality Development Framework"?	
2. Does the "Quality Development Framework" help to put the importance of learning and teaching at the centre of quality development in TVET centres?	
3. What do you understand is under "shaping oriented quality" in TVET?	
4. When it comes to quality in TVET centres – in which field/area do you propose to start with quality development?	
5. What would you characterize as the crystallization fields for quality development in TVET centres?	
6. What kind of role do management and teachers have to take over to ensure quality development?	
7. What are the most important areas for quality development?	
8. How you would define quality with a link to learning and teaching?	
9. What is the impact of teaching staff on quality development?	
10. How would you define standards and indicators to ensure quality?	

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 measurement and the determination of a certain grade of quality is not 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 despite interdependencies between quality areas, the changes have to be made by the addressee. In the example below: the teacher and his or her behaviour is

Note for users

The description offered for the development of quality based on quality areas, indicators and standards is very comprehensive.

Please check, whether the quality areas cover all the important areas of learning and teaching.

Please check the definition of the quality indicators and standards. Think of further optimization with a relation to the shaping of the learning processes.

10 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.

the addressee (quality area 1, Table 8: Example of a Quality Indicator oriented to changes). 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 TVET centre "should generally be based on concrete occupational acting".

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

The clear addresses of the change in the named quality area of Table 8 is the teacher even if, as mentioned above, the necessary changes in implementation certainly entail changes in other quality areas as well. Corresponding to this example, the addressee of change in the other areas are expressly "the learning process", "training and teaching methods", "training and teaching contents", "the learning environment" and "reflection on training and teaching". Within the definition of standards, these implications have to be considered.

Therefore, standards are described in a way that clearly shows which changes should be envisaged in terms of 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"* [4].

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

Standards are, however, not curricula: the latter are developed based on standards. Nevertheless, they must name both the change processes and the targeted learning result.

Table 8: Example of a Quality Indicator oriented to changes

Quality area 1: Role of trainers and teachers		
Quality indicator:		**Standard: Adequate shaping measure**
Practices requiring improvement (examples of actual situations)	Desired aim (possible role of teachers and trainers)	
The teacher elaborates topic-related tasks and confronts the participants 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 class.

The **desired aim** of the standard (see Table 9) is based on a decision for the target situation which must 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 VET institution and results from a key question, an event, or an identified problem and represents **practices requiring improvement** (see Table 9).

Standards 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 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 and Asian countries already work with this amended concept of standards which may contribute to the development of better teaching processes. The novelty is the focussing on the development and the changes in lieu of evaluation.

With shaping oriented standards, QDF will pave new ways to initiate development processes for improved instruction. The freedom of shaping by the teachers is not reduced, as it might be presumed from 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, i.e. the learning process, the process of the shaping of the environment, the process of the application of methods and others. 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. This means that they are shapeable. Thus, a certain dynamic should be promoted to avoid static procedures. Standards therefore should describe what participants, 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.

Format of Standards and Indicators

Indicators and standards characterise the quality requirements for TVET centres, participants, teachers etc. They are structured according to the following six quality areas and are specified with the aid of a description scheme:

1. Role of teachers and trainers,
2. Role of participants/ learning processes,
3. Training and teaching methods,
4. Training and teaching contents,
5. Learning environments and framework conditions for training in the company and TVET centre,
6. Reflection on training and teaching.

The specification of the indicators and standards is done according to Table 9 and Table 10. Thus, the problem and/or the core requirement in the field of TVET actions in the field related to the indicator is described.

Table 9: Formal definition of Standards

	Indicator		Standard
Key questions	Practices requiring improvement	Desired aim	Adequate shaping measures

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 TVET centre, the TVET centre organisation, corporate learning environments, participants, teaching staff and organisations should know and be able to do/ensure as a result of the study process or the contents or the shaping of learning environments etc.

Standards should name action references for TVET 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 TVET centre, the characteristic of shapeable standards can be explained: During the TVET training course e. g. for metal technicians, the apprentices have to solve a technological control task for the control of a rolling gate for a garage. In order to reach a high quality in 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 the teacher to play a certain role,
- the available period of time, the available equipment and the prerequisites for participants and trainers who prefer a certain approach and certain process structures.

With the aid of indicator NN, for example, it will be possible to name quality indicators and shaping measures. 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 achieving the quality demands. The power of standards will be demonstrated by answering the questions in Q-tool 9.

Table 10: Standards – Requirements for Change

Quality Area 4: Training and Teaching Contents/Teamwork			
	Indicator		**Standard**
Key questions	**Practices requiring improvement**	**Desired aim**	**Adequate shaping measures (standards)** Describing concrete examples of the current project
Do teachers/ trainers work in a team when preparing to impart specialized contents in metal technology?	Teachers/ trainers would rather work alone in their specialised field (here: metal technology).	Teachers/ trainers also adhere to the team concept when it comes to specialised contents.	Specialized contents • are negotiated via teams and teachers/trainers are further trained in order to acquire the ability to work in teams; • TVET centre organisation and work planning at TVET centre will be switched to teamwork. • Teams develop their own guidelines for a high quality of instruction;

Q-tool 9: The power of standards and indicators

Key Questions	Check
The power of standards and indicators	
1. Should standards deal with innovative aspects? If yes, why?	
2. If you implement quality concepts in your centre a lot of change will go on. How might you ensure movement in the direction of quality production?	
3. Which action might be helpful if the quality development process does not work as expected?	
4. Are the "quality indicators" as structured above helpful for quality development in learning and teaching?	
5. How is the specific understanding of standards explained in this chapter?	
6. Do you see any advantage in the definition of standards in the way it is explained here?	
7. Ensures the way of the proposed definition of standards and indicators a certain dynamic in competence development?	

Exercise: Define standards and indicators

Define standards for change following the structure of Table 10 above:

- **First:** check the following six key questions (see below) which are related to the six "quality areas" of learning and teaching!
- **Second:** Add additional key questions (3 to 4) to each quality area to cover a wider range of requirements for improvement. Finally, each "quality area" should exist of 3 to 5 key questions.
- **Third:** Define the "practices requiring improvement"!
- **Forth:** Define the "desired aim (desired role of teachers/ trainers)".
- **Fifth:** Define the "adequate shaping measures (standards)" (the standards should be measurable).

The six key questions of the six "quality areas":

1. **Role of teachers and trainers:** Do teachers/trainers consider vocational education as an important phase of the educational career of the apprentices/trainees? (Holistic access to teaching).
   Guideline: The training and teaching methods support for the learners'/apprentices' tasks depending on their capacity.
2. **The role of the participants/ learning processes:** Do participants see direct links between training measures and their work requirements? (Authenticity)
   Guideline: Learning processes support the learners needs.
3. **Training and teaching methods:** How are personal and social competencies promoted? Are there selected initiatives for this goal? (Support of personal and social competen¬ces)
   Guideline: The training and teaching methods support for the apprentices' tasks depending of their capacity.
4. **Training and teaching contents:** Do teachers/ trainers work in a team when preparing to impart specialized contents in metal technology? (Cooperative work)
   Guideline: The teaching contents are work process oriented, adapted to the development level of the participants and the result of structuring processes in team work.

5. **The shaping of the learning environments and the framework** conditions for training in the company and teaching at TVET centre: Do the teachers, headmaster and the participants show respect for each other's roles and the learning environment? (Respectfulness)
   Guideline: All dimensions of the TVET centre environment support the learning processes.
6. **Reflection of training and teaching:** Do teachers/ trainers use any possibilities for supervision and coaching? (Supervision and Coaching)
   Guideline: Reflection provides a systematic way of detecting possible actions to improve.

4. Key Points

Important questions for clarification before work with a team starts

Summary, Questions & To Do	Check
Summary	
1. The learning process is the crystallization of all quality related ideas. In addition to the common frameworks, the focus is not only (with the help of the PDCA cycle) on the statement of output and context-oriented quality characteristics. Shaping measures are an improvement of the quality of training and instruction.	
2. Quality indicators and standards are designed to improve the human factor.	
3. The overall idea of quality is to continuously optimize one's own actions and results towards better quality.	
4. Quality Development has the forgotten group in focus: the teachers, the trainers and the learners themselves.	
5. The Quality Development Framework however, aims at creating an instrument which will promote quality development based on a set of quality indicators.	
6. Quality development is first of all a "bottom up" process driven by the persons who are able to implement change to improve learning.	
Questions	
7. What are indicators?	
8. How do you design indicators and standards?	
9. What are Standards? What are dynamic standards?	
10. Why is it so important to have dynamic standards?	
11. How you might ensure the participation of all teachers/instructors in the quality development process?	
12. How do you identify the most important questions to deal with to ensure quality development in your centre?	
13. How must curricula be changed after the definition of standards and indicators?	
14. How do you initiate the necessary changes at your TVET centre?	

Summary, Questions & To Do	Check
To Do	
15. Design indicators and standards for a certain quality area of work areas of teachers.	
16. Analyse the quality areas which are explained in the text above and decide whether all areas of learning and teaching are covered.	
17. Develop an implementation strategy for indicators and standards that enhances the quality of learning and teaching.	

5. Checklist

Please use the "Standards and Indicators Check List" together with your partner to reflect on the training quality. Please determine the strengths and possible needs for action and decide at which points you would propose improvements.

Standards and Indicators Check List

Meaning of the scale:

++ everything is fine;
+ everything is satisfactory
-- action is needed for improvement;
- improvement is proposed

Standards and Indicators Check List	--	-	+	++
Standards and indicators for TVET centres				
The power of indicators and standards for learning and teaching processes is very helpful for improvement				
Staff members should define the standards and indicators of their "quality area" of teaching				
Standards and indicators help to demonstrate the development of the quality of learning and teaching				
The impact of indicators and standards for the improvement of outcome quality is ensured				
Standards and indicators support a certain dynamic in TVET centres				
New work habits of teaching staff are needed when indicators and standards are established				
Staff members must ensure the development process of indicators and standards in all fields/sectors				
Different types of learning and teaching approaches need to be discussed (advantages and disadvantages)				
The interrelation between indicators/standards and output quality of teaching and learning must be clarified				
All the developed standards and indicators should be digitalized to support transparency				

Standards and Indicators Check List	--	-	+	++
Standards and indicators and change management				
The relationship between indicators/standards and outcome becomes transparent				
Via standards and indicators, innovative movements in learning and teaching are possible				
Standards and indicators make it easier for teaching staff to cooperate because of transparency				
The higher transparency of the outcome of learning and teaching based on standards supports change management processes in TVET centres				
Standards and learning and teaching				
Standards and indicators allow higher autonomy for teaching staff				
Standards and indicators are prerequisites for self-reliant learning				
Standards and indicators place the participants at the centre of all actions				
Teaching staff must learn to work with standards and indicators				
Standards and indicators within TVET centres				
The staff in TVET centres must be prepared to support and work with standards and indicators				
If TVET centres follow their work standards and indicators, the focus on quality improvement will be enhanced				
Staff members have a transparent platform for cooperation if all are following indicators and standards				

CHAPTER 3: QUALITY TOOLS FOR THEMATIC AREAS

Thematic Area 4:
Classroom Instructional Methods[11]

1. Introduction

Purpose

This thematic area is designed to help teachers select teaching methods that fit desired learning outcomes. The application of teaching methods is a key factor that determines the effectiveness of the learning process to acquire intended competencies. The description of steps to apply the methods guides teachers to take decisions on ways the quality of a student's learning can be managed and assured.

When to use it

The selection and application of instructional methods is included as one of the core functions of teachers and becomes a part of their daily routine in delivering training. The ability to select appropriate methods reflects the level of professionalism of teaching staff in dealing with different learning outcomes and student learning styles. This thematic area may be of great assistance whenever teachers seek a tool to help design learning processes for their students.

Setting

The selection of adequate methods can be decided by an individual or a team. Depending on the content and the intended outcome, a reflection and exchange round among teaching staff will contribute significantly to the appropriateness of method selection. In fact, learning organization requires multidisciplinary learning approaches to address different learning styles. Team work which promotes group dynamics in designing instruction is highly recommended.

Facilities and Materials

Pin boards, workshop materials (cards, markers etc.), projectors, visualization boards, working materials (from teachers), areas for communication and learning activities to practice cooperation, digital media, laboratories etc.

Notes

11. The material was used within teaching processes, quality control and quality assurance in GMI but deeply modified for a use in this handbook for quality toolbox.

The term "method" that is used under this thematic area is a general term and has no accepted definition or procedure. It suggests ways, strategies or approaches to promote and stimulate learning processes that foster independent learning. It also provides ideas to shape the ability and readiness of an individual to act successfully in an unstructured or complex situation. A very wide definition of method best fits this requirement.

Changes in technology are no longer linear but have somehow moved exponentially. This has disrupted "the way we used to do things" or in this case "the way we used to teach these things". Teachers are no longer seen as the sage on the stage but more of a guide by the side.

The traditionalist teachers in learning and teaching need to migrate and adopt and adapt skills to meet the needs of digital native learners. The development of skills in the digitized and digitalized world requires a new way of thinking, shifting from receptive, passive learning and teaching methods to action oriented self-reliant approaches in learning and teaching methods. Therefore, the following tendencies when using teaching and learning methods of vocational education and training may be deduced:

- Increased use of activities to stimulate learning;
- Change towards self-oriented learning;
- Change towards process-based methods;
- Change in the orientation of learning and teaching towards the development of competence;
- Change for integration, a comprehensive and blended learning and teaching methods

2. Objectives

The objectives of this thematic area are to: provide criteria for selecting effective instructional methods to achieve the outcomes; and provide the characteristics of methods that foster student centred learning, self-reliant learning and teamwork.

3. Quality Tools

The classroom instructional methods that are recommended to be used by TVET instructors include:

i. Project based learning;
ii. Problem based learning;
iii. Case studies;
iv Action learning;
v. Practical demonstrations; and
vi. Lectures.

i. Project based learning

The content of the project and the success of the project are relevant, but the focus is directed at the process of learning. Results from their actions, their failures, overcoming differences as a group, overcoming conflict, working together, presenting work to strangers, dealing with time and different types of pressure from many sources are amongst the desired outcomes.

All participants of a project are responsible for the project's result. There are times, in case of necessity, when groups have to be strengthened, reassembled, dissolved, regrouped or built entirely anew, if they do not function or if this is required.

The primary objective in using projects as an instructional method is to enable learners to organize and implement learning processes independently. The fundamental characteristics of projects are:

- Orientation towards operational problems;

- Self-determination (self-organization and cooperative learning);
- Reference to experience;
- Orientation towards objectives and products.

In economics, administration and training, in identifying intentions or task setting, projects include:

- The development of a solution for something new;
- A new or changed product;
- A new or changed procedure;
- Types of services;
- Organization or realization of an event;
- Testing of a solution;
- Improvement of a process or workflow;
- Providing solutions or improvements in costing and time management;
- The practical implementation of solutions.

Note for users

During a structured training course, a project may be arranged into a teaching unit, ranging from several weeks up to the duration of an entire training year.

Teachers/project supervisors stand outside the learning circle; having an advisory, consultation and supporting function only; staying mainly in the background.

The projects given to learners are defined by their characteristics. The Q-tool 10 below provides some characteristics of a project to be used in TVET institutions.

Q-tool 10: Characteristics for creating projects

No.	Item	Check
1.	The project is suitable for the processing of complex problems or sets of tasks	
2.	Tasks to be implemented have a real connection to operational problems	
3.	Limited/specified time is provided for the implementation of the project.	
4.	Learners prepare proposals (explaining the processes involved or the flow to produce a product or perform a service)	
5.	Has a complete cycle. The project starts with planning, continues with implementation and goes on until the realization and presentation of the result.	
6.	The project group is solely responsible for the project result	

Just like any assignment, there must be some guidelines provided to ensure the output of the assignment is consistent and reliable. Projects are no different. Ensure that projects created are consistent throughout the groups or programmes offered. Consistency can be in terms of the difficulty level, the usage of material or the relevance to the programme or industry. Q-tool 11 below provides some information that can be used as a guideline when preparing projects.

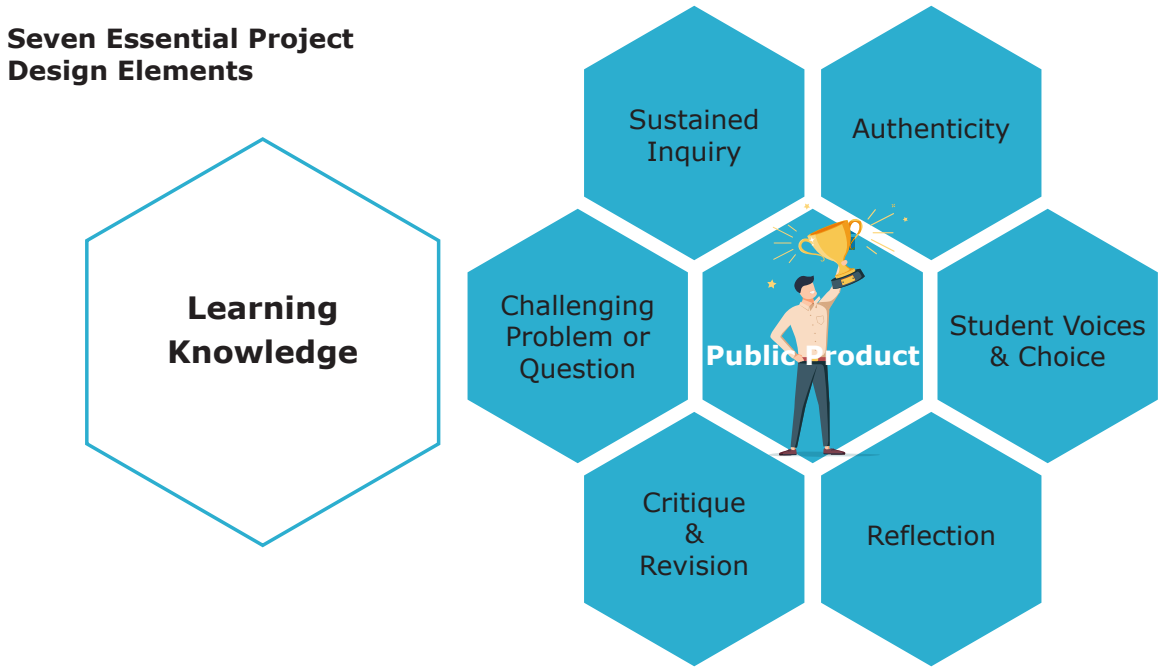
Q-tool 11: Guidelines for preparing projects

	Content	Additions/remarks
Prepara-tion	• Selection of learning content and deduction of project topics • Which are the targets of the project? • Which skills are to be communicated? • Assure professional/practical connection	• Structure the project topics mentally, setting up a time frame for the project, • Control materials and resources, • Development of documents/work sheets • Coordination with specialized colleagues – connection with other teaching fields
Planning	• Initiation of project work • Introduction of work tasks • Clarification of task setting, questions regarding the implementation of the task • Joint development of a task setting for the project and setting of an objective for the project • Assembly of groups	• Introduction into Projects • Preconditions – resources and materials • See group work methods • Objective criteria – take into account assembly of groups
Decision	• Gathering of information and struc-turing of project • Create a work plan • Work steps, • Time planning, • Persons • Resources • Methods	• Take into account the diversity of solutions • Who is in charge of which task? • Take into account activity and assignment of roles • Structured approach • Prepare work sheets, work plans • Support the application of methods
Selection	• Selection of ideas • Methods of decision-making • Compilation of work plan • Intermediate results	•Take into account decision making in the group •Is the plan in accordance with project objectives?
Imple-mentation	• Execution of tasks in individual work and small groups • Well scheduled fulfilment of tasks based on the division of labour • Independent and responsible acting by the learners	• Advisory and supportive role of teachers • Take into account activity and task distribution of trainees • Check intermediate results, correct if necessary • Conflicts in group and motivation
Assess-ment	• Compilation of acquired information • Selecting and structuring content • Selecting the form of presentation • Presentation of results • Discussion of results • Theoretical consolidation of topics	• Take into account project objectives • In addition: reflection on the group process (social skills) • Assessment based on developed objective criteria • Promote evaluation by learners
Transfer	• Assessment of learning experiences • Clarify connections between profes-sional theory and practice • Discussion of process • Make connections to other teaching and learning content	• Discuss success factors and mistakes • Show action alternatives • Connection with professional practice • Transferability to practical cases

There are several design elements that TVET instructors should apply when creating the project. The graphic given in Figure 16 below shows **seven (7) essential project design elements.** These elements listed in random order are:

- challenging problem or question;
- ustained inquiry;
- authenticity;
- student voices and choices;
- reflection;
- critic and revision;
- public product.

Figure 16: Project design elements



Users may use the checklist provided in Q-tool 12 and Q-tool 13 below to help them design projects having the desired project design elements.

Q-tool 12: Checklist for project design

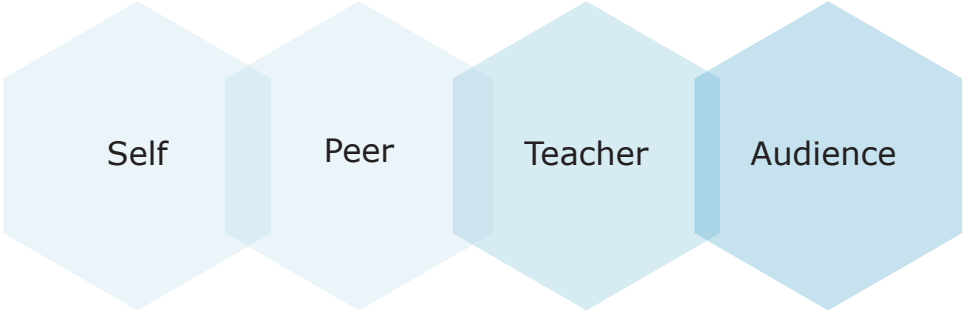
No.	Item	Check
1.	**A Challenging Problem or Question** The project is framed by a meaningful problem to be solved or a question to answer, at the appropriate level of challenge	
2.	**Sustained Inquiry** Participants engage in a rigorous, extended process of posing questions, finding resources, and applying information.	
3.	**Authenticity** The project involves a real-world context, tasks and tools, quality standards, or impact, or the project speaks to personal concerns, interests, and issues in participants' lives.	
4.	**Student Voice and Choice** Participants make some decisions about the project, including how they work and what they create.	
5.	**Reflection** Participants and teachers reflect on the learning, the effectiveness of their inquiry and project activities, the quality of student work, and obstacles that arise and strategies for overcoming them.	
6.	**Critique and Revision** Participants give, receive, and apply feedback to improve their process and products.	
7.	**Public Product** Participants make their project work public by explaining, displaying and/or presenting it to audiences beyond the classroom.	

The use of projects in learning and teaching processes has elevated classroom learning. However, instructors need to design, plan, manage, coach and assess the project. This requires a management skill set. Instructors can use the following checklist to ensure the project can be managed according to the time allocated.

Q-tool 13: Checklist to manage project

No.	Item	Check
1.	**Design and Plan** Teachers create or adapt a project for their context and participants and plan its implementation from launch to culmination while allowing for some degree of student voice and choice.	
2.	**Align to Standards** Teachers use standards to plan the project and make sure it addresses key knowledge and understandings from subject areas are included.	
3.	**Build the Culture** Teachers explicitly and implicitly promote student independence and growth, open-ended inquiry, team spirit, and attention to quality.	
4.	**Manage Activities** Teachers work with participants to organize tasks and schedules, set checkpoints and deadlines, find and use resources, create products and make them public.	
5.	**Scaffold Student Learning** Teachers employ a variety of lessons, tools, and instructional strategies to support all participants in reaching project goals.	
6.	**Assess Student Learning** Teachers use formative and summative assessments of knowledge, understanding, and success skills, and include self and peer assessment of team and individual work.	
7.	**Engage and Coach** Teachers engage in learning and creating alongside participants, and identify when they need skill-building, redirection, encouragement, and celebration.	

Student projects in TVET have a special significance when compared to other assignments completed by participants. Projects cover a substantial amount of learning outcomes and integrate content from various disciplines. The result is meaningful learning. However, there is a need to assess the amount of learning acquired by the participants from various dimensions. In project based-learning, evaluation/assessment should have four dimensions:



Self-Evaluation
It serves as an important piece of summative evaluation because it taps into higher-level thinking and awareness of the materials, processes, and final product. It makes participants think about their successes, mistakes, and goals for the next time.

Peer Evaluation
It facilitates a better, more collaborative process because participants experiences are taken into consideration. We can use this information to modify the workflow in the next project and hold participants accountable for their work (effort, constructive contributions to the team, etc.).

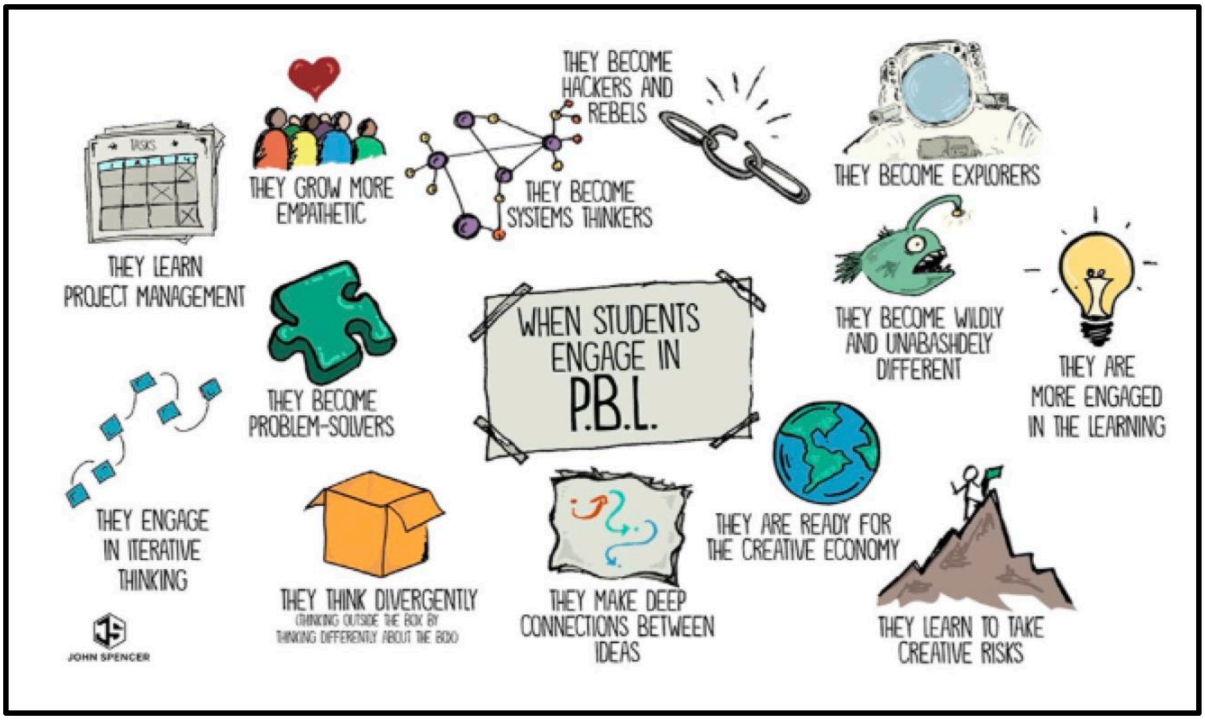
Teacher Evaluation
Rubric score sheets can be a quick, efficient way of providing feedback to a big class; oral and written feedback is more personal and specific. Private evaluations, like self-reflections and teacher feedback, can address confidential information about teammates that allows participants to be honest about their peers and themselves. Find a combination of both public and private evaluations that you feel is right for the participants or the project.

Audience Evaluation
Ideally, project-based learning is an authentic experience, whether for the class or an audience beyond the classroom walls. So, we need to allow for audience feedback to evaluate that project's levels of success. Public critiques (such as comments on blog posts) and class discussion help provide wider perspective and may even carry more meaning for the student than teacher feedback. Consider having a content-area professional or college professor provide critiques for added credibility.

Users may refer to thematic area 5 classroom assessment, for further details and examples of Q-tools that can be applied to assess problem-based learning (PBL).

ii. Problem-based learning
PBL is a student-centred approach to learning that encourages participants to be self-directed, interdependent and independent as they attempt to solve the set problem. Throughout PBL, participants need to identify, think critically, analyse, collect data, identify the best solutions, make decisions and implement decisions in solving a given problem. The outcome of using PBL is shown in Figure 17 below.

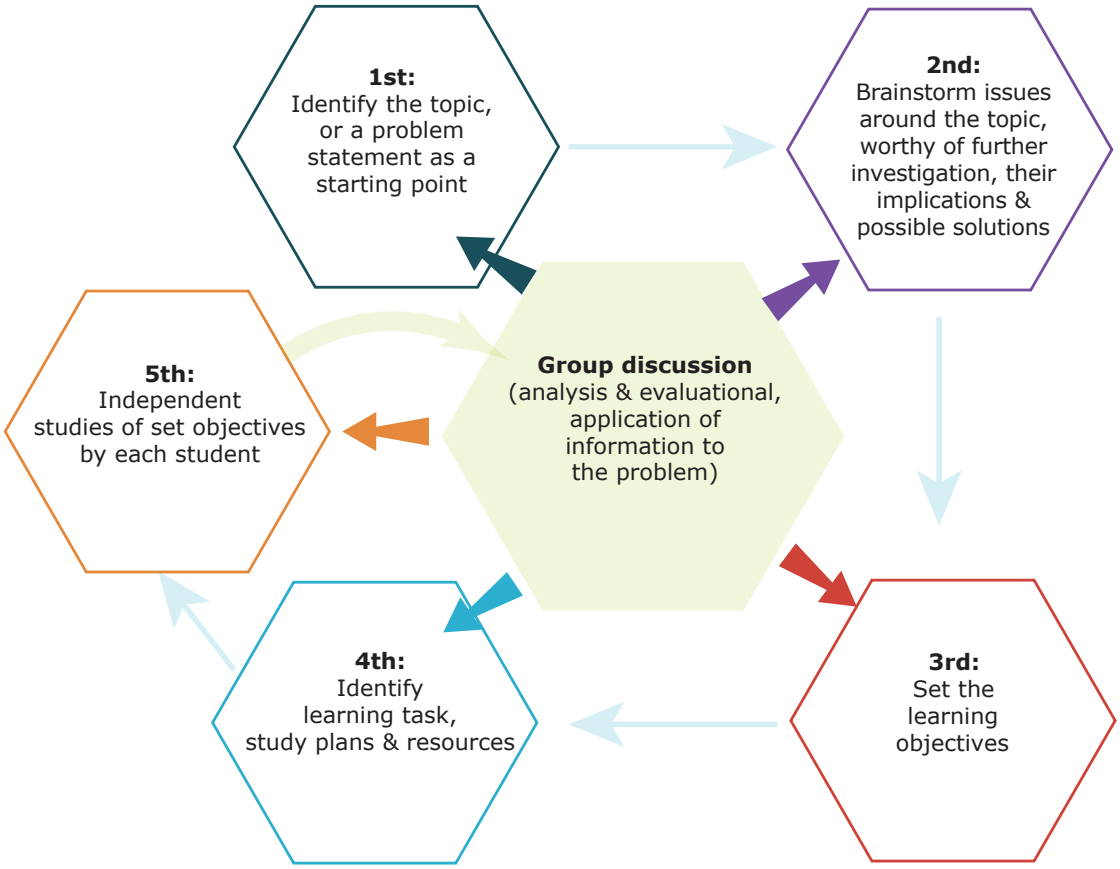
Figure 17: Outcome of PBL



Problem-based learning (PBL) is a method of learning and teaching which allows participants to focus on how and what they will learn. An unfamiliar problem, situation or task is presented to the participants (by the lecturer) and participants are required to determine for themselves how they will go about solving the problem. This occurs through small group work and allows participants to utilize their prior knowledge in the topic area and identify the gaps in their knowledge as they attempt to solve the problem.

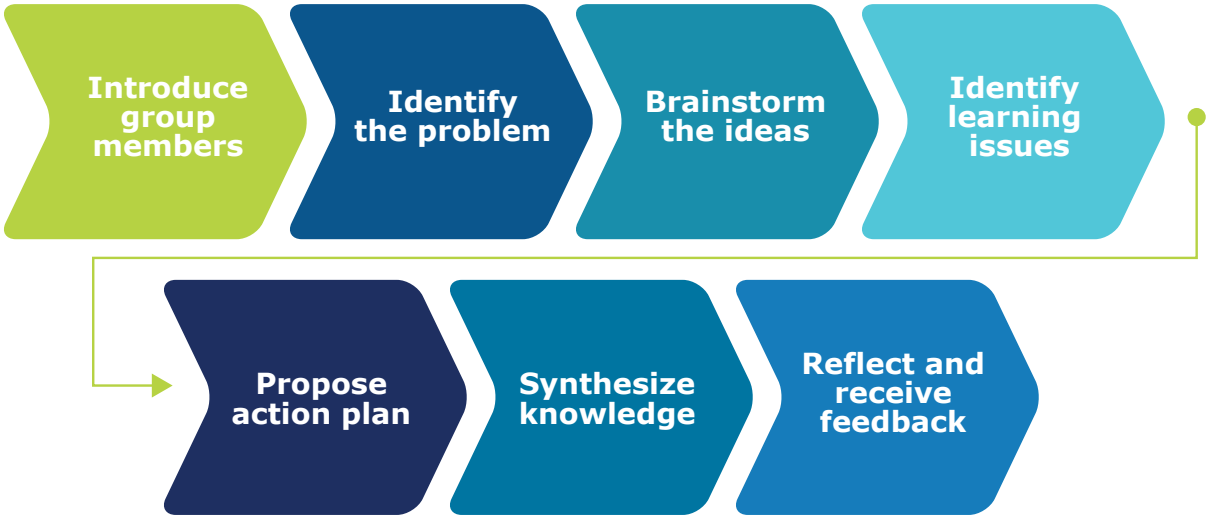
In order to design the task, instructors may use the following steps. Instructors are advised to master the art of problem crafting. This skill is important to ensure effective use of PBL and bring about the desired results. Follow the steps shown in Figure 18 below to design or craft the problem.

Figure 18: Steps to craft the problem



In order to implement PBL at TVET institutes, users need to perform several activities before, during and after implementation. There are 7 main activities involved in the process of implementing PBL. For the effective implementation of the PBL process, users need to follow the series of activities shown in the Figure 19 below.

Figure 19: Activities involved in implementing PBL



Prior to implementing PBL, one of the most important factors is to ensure the problem crafted can help students acquire significant knowledge, skills and attitude regarding the subject. PBL is similar to project-based learning where participants developed competencies and in-depth knowledge regarding the subject. When a project allows participants to be creative and innovative, PBL is more structured and guides participants throughout the learning process. In PBL, the big question or primary driving question is the key to the transfer of knowledge and skills as well as attitude in PBL. Participants are exposed to decision making skills, choosing the product and materials as well as planning and when to place urgency above priority and importance. This allows student to be creative as well as analytical. Users may use the table provided below, to evaluate the quality of the problem crafted by referring to the suggested assessment criteria.

Q-tool 14: Criteria for problem crafting

No.	Item	Check
1.	**Significant Content** At its core, the project is focused on teaching participants important knowledge and skills, derived from standards and key concepts at the heart of academic subjects.	
2.	**21st century competencies** Participants build competencies valuable for today's world, such as problem solving, critical thinking, collaboration, communication, and creativity/innovation, which are explicitly taught and assessed.	
3.	**In-Depth Inquiry** Participants are engaged in an extended, rigorous process of asking questions, using resources, and developing answers.	
4.	**Driving Question** Project work is focused by an open-ended question that participants understand and find intriguing, which captures their task or frames their exploration.	

No.	Item	Check
5.	**Need to Know** Participants see the need to gain knowledge, understand concepts, and apply skills in order to answer the Driving Question and create project products, beginning with an Entry Event that generates interest and curiosity.	
6.	**Voice and Choice** Participants are allowed to make some choices about the products to be created, how they work, and how they use their time, guided by the teacher and depending on age level and PBL experience.	
7.	**Critique and Revision** The project includes processes for participants to give and receive feedback on the quality of their work, leading them to make revisions or conduct further inquiries.	

iii. Case study

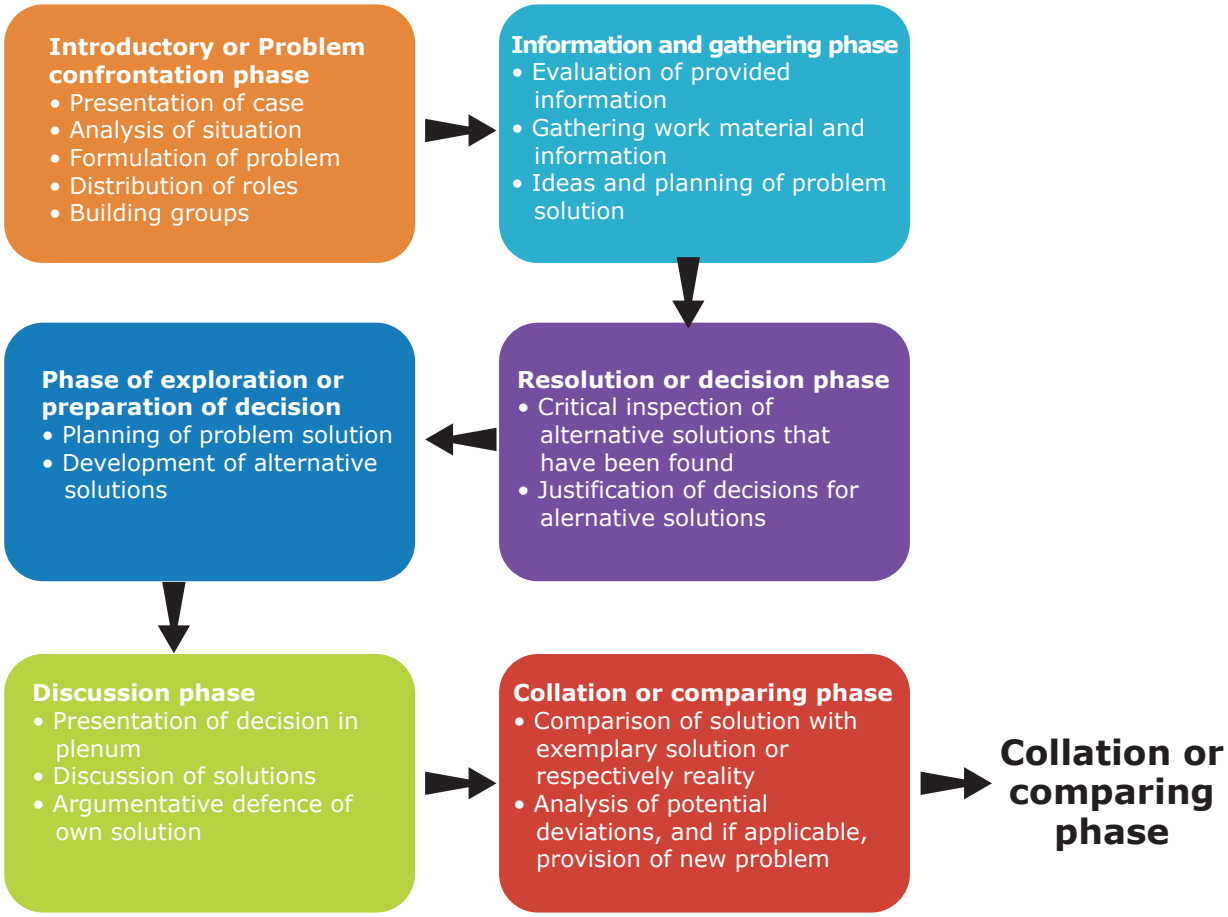
Learners are confronted with a case taken from professional practice or from their environment. They discuss the case, look for alternative solutions relating to the situation in the case, decide on an alternative, justify it and compare it with the reality of the decision made. The case study method gears learning directly towards situations taken from life or work that can be practically experienced. During the case analysis, learners acquire knowledge regarding the world of work and the business world. This is a much-preferred method when it comes to integration and application of knowledge into real life problems that can be done in a classroom setting.

Note for users

Materials required for case study are: information regarding the case study, presentation material and media. Case studies should be based on real events, and create meaningful learning.

Case studies aim to allow learners to acquire the ability to make decisions and to solve problems by application of theory, laws, principles or concept in a real or simulated scenario. Due to a close connection with reality and practice, the development of skills with regard to professional issues is supported at an individual level. Because of its strong problem orientation, the individual problem-solving and decision-making ability of the learners is developed. Users may follow the 6-steps approach given in Q-tool 15 to apply case study in the classroom. However, the depth of the case under study is totally depending on the need of the learning outcomes to be acquired.

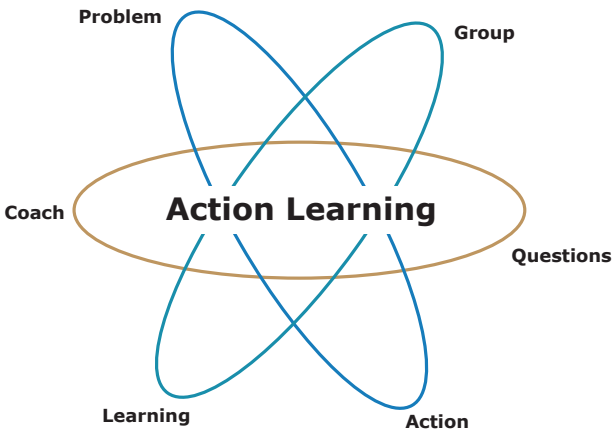
Q-tool 15: The 6-Step approach to case study



iv. Action Learning

Action learning is an approach to solving real-life problems. It involves taking action and reflecting upon the results. This helps improve the problem-solving process as well as to simplify solutions developed by the team.

- The action learning process includes:
- a real problem that is important, critical, and usually complex;
- a diverse problem-solving team or "set";
- a process that promotes curiosity, inquiry, and reflection;
- a requirement that talk be converted into action and, ultimately, a solution;
- commitment to learning.



In most forms of action learning, a coach is included and is responsible for promoting and facilitating learning, as well as encouraging the team to be self-managing. Action Learning is a process of insightful questioning and reflective listening. Action Learning tackles problems through a process of:

- asking questions to clarify the exact nature of the problem;
- reflecting and identifying possible solutions;
- taking action.

Action learning aims to:

- solve problems and develop leaders simultaneously;
- allow participants to think critically and work collaboratively;
- solve complex problems that may appear unsolvable;
- allow participants to elevate the norms, the collaboration, the creativity, and the courage of groups;
- allow participants to reflect on the advancement of their group functioning, rather than on their problem solving.

Users may refer to the suggested quality tool given below to assist in using action learning as a teaching method. Do take note that the action learning coach here is a "certified coach". However, users may apply the hints and guidance provided to promote action learning in the classroom, even though the user may not be a certified action learning coach. The quality tool in Q-tool 16 below is a checklist for the application of action learning as an instructional method.

Q-tool 16: Checklist to implement action learning

No.	Item	Check
1.	**Create a problem** Should be urgent, significant and the responsibility of the team to resolve.	
2.	**Develop an action learning group or team** Ideally composed of 4-8 people, ideally with diverse backgrounds and experiences.	
3.	**Plan a process /session of insightful questioning and reflective listening** Action is taken after reflecting and identifying possible solutions Questions build group dialogue and cohesiveness, generating innovative and systems thinking.	
4.	**Take action on the problem** Requires that the group be able to take action on the problem it is working on not just merely giving recommendations.	
5.	**Create a commitment of learning** PExperience gained through problem solving will enhance learning among each group member.	
6.	**Appoint an action learning coach** Helps the team members reflect on both what they are learning and how they are solving problems Enables group members to reflect on how they listen Reframe the problem, and give feedback on how the team plans and works together Helps the team focus on what they find difficult, what processes they employ, and the implications of these processes on what they achieve.	

Action learning involves activities. Activities add fun to learning. Learning needs to be fun, however, fun alone doesn't promote learning. The content to be delivered must be the hero in action learning. The proposed activities can be incorporated in the session:

- Free Writing/Minute Paper/Question of the Day Exercise;
- Ice Breakers;
- Think–Pair–Share;
- Case Studies and Problem-Based Learning;
- Debate;
- Interview or Role Play;
- Interactive Demonstrations;
- Jigsaw.

Note for users

Resources needed for effective action learning

• A problem
• An action learning group or team
• A process of insightful questioning and reflective listening
• Action taken on the problem
• A commitment to learning
• An action learning coach (a certified coach)

Learning sessions need to be wrapped up with an assessment of the learning outcomes. In order to increase the reliability of assessment, assessment need to be administered. One of the key questions is, who is best placed to do the assessment? The following people, or a combination of the following, may be best placed:

- The teacher or facilitator
- To capture evidence appropriately by systematically observing and monitoring the learner using criteria and activities designed
- A student's peers (especially in group-based activities)
- To help participants in a group to focus quickly on contributing to a collective task
- Self-assessment

To observe, assess and confirm self-achievement by setting out evidence of, and reflecting on, their contribution in a highly structured way, against well-written criteria

v. Practical demonstration

Demonstration can be defined as a practical exhibition and explanation of how something works or is performed. It is commonly used as a combination of a verbal explanation with a live display using an apparatus or in a simulation for presenting important facts, flow, concepts and ideas.

There are two types of demonstration;

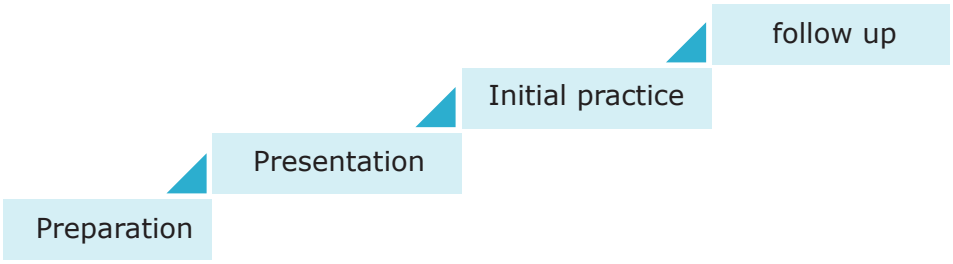
A. Demonstrating skills

Teaching a skill, especially workshop skills are usually performed through demonstrations by the teacher, followed by practice by the participants (Refer Figure 20). So, largely it involves getting participants to do things, and this is shifting the responsibility to learn to participants.

A skill is therefore:

- Knowledge of the method to perform a task manually;
- Effective application of the knowledge when performing.

Figure 20: Basic steps to demonstrate a skill



Preparation – preparing learners for the session and motivating them to watch, ask and learn. The preparation step consists of a variety of activities that are planned to prepare the learners so that they are receptive and ready to learn what the trainer is about to demonstrate. The trainer must make sure that the learners see a need for the skill that is about to be presented. The trainer must secure and maintain the attention and interest of the learners. From an instructional perspective, the more successful the trainer is in meeting the needs of the learners, the more motivated they will be to learn.

Presentation of the demonstration - showing learners the sequence of steps and exploring the key points that make the operation a success.

Note for users

Practical demonstration is an effective way of communicating information. However, it is a challenge to teachers and instructors because different students have different speeds in processing information and learning speeds. Moreover, an audio-visual is a supportive medium to a skills demonstration. However, making sure that every student has a good view may take a little experience in handling a crowd.

This is show time! Ensure all learners are able to observe the demonstration. Remember, the closer the learners are to the demonstration the more they will be able to learn and retain the information. The demonstration is used to present new skills and procedures to learners. In a demonstration, the trainer uses actual tools, machines, and materials to show the learners what they are supposed to do by actually performing the task or operation. The demonstration includes an explanation of the steps, key points, and safety factors required to successfully complete a task. Use questions during the demonstration to check the understanding level of the learners' and to stimulate interest. Demonstrate the actual process at the normal production speed and then repeat the demonstration at a slower speed and explain each step. Possibly repeat the demonstration again at normal speed. Emphasize safety precautions at the time that the elements of danger occur in the demonstration.

Initial practice – learners practices skills under supervision and monitoring. Learner manipulates skills.

As the learners practice the skills on their own, trainers need to keep a careful check at this stage to ensure that the correct procedures are being used. Have the learners repeat the "how" and "why" points to make sure they understand how the task is done. Encourage and compliment learners to build their self-confidence. Have the learner repeat the task over and over until you are sure that they can do it according to required standard.

Follow-up – further practice to develop speed and precision and evaluate performance.
The final stage involves further practice to increase speed and competence with the skill. It is important to evaluate the learners' work during this stage to give positive feedback on its effectiveness. The evaluation step enables both the trainer and the learners to determine if the session learning outcomes have been met. Develop an evaluation sheet or chart to use in rating the learner's work.

These steps are designed to enable the instructor to teach and the learners to learn skills in a logical order. In summary, the instructor must:

(a) prepare the learner; then
(b) present the skill by showing, demonstrating, telling, and illustrating, one point at a time; then
(c) help the learner apply the new skill until the standard is met; and finally
(d) test the success of the learning-teaching process.

When using demonstration, teachers need to:
It looks like there is a lot of preparation to be done by instructors before the practical lesson. In

helping instructors organise the session, the Q-tool 17: Preparing for skills demonstration checklist might be helpful.

Q-tool 17: Preparing for skills demonstration checklist

No.	Item	Check
Preparation Stage		
1.	Check lesson learning outcomes to ensure it is in the skill /psychomotor domain	
2.	Identify the item to be demonstrated	
3.	Decide what information is needed by participants before the start of demonstration	
4.	Skill broken down into steps for easy demonstration and understanding	
5.	Lesson plan prepared showing each step-in sequence	
6.	Key points identified and noted for easy reference	
7.	Formulate questions or worksheets as an activity during demonstration	
8.	Materials, tools and equipment arranged to reduce demonstration time	
9.	Physical setting arranged.	
10.	Participants position allow them to see the demonstration and hear the explanations clearly	

No.	Item	Check
11.	Participants safety (hazard free) and comfort taken into consideration	
12.	Check equipment /process functionality prior to demonstration	
Presentation of the demonstration		
13.	Presentation able to create interest.	
14.	Presentation shows relevance of skill to student progress	
15.	Skill demonstrated at normal speed, using the same equipment that students will use,	
16.	Demonstration repeated slowly.	
17.	Key points emphasised	
18.	Only one method and correct way demonstrated. No other options given/explained	
19.	Questions posted to measure student understanding	
20.	Key points summarised	
21.	Opportunity for participants to imitate action	
22.	Opportunity for participants to explain the demonstration	
23.	Feedback provided	
24.	Opportunity for participants for initial practice	
25.	Some form of assessment conducted during demonstration performed.	

B. Demonstrating concept or principle

A concept is an idea that is tied to an experience. Every concept has a referent; something to which it refers. For example, a concept of a table is that it has general features like a top and legs, which define all tables. When explaining a concept like muscle contraction and relaxation in allowing movement during demonstration, a different set of items need to be checked. The Q-tool 18: Preparing for concept /principle demonstration checklist shared below can be used as a guide to assist instructors in lesson preparation.

Q-tool 18: Preparing for concept /principle demonstration checklist

No.	Item	Check
Preparation Stage		
1.	Summarise concept/key points	
2.	Concept can be demonstrated * If you cannot think of one, perhaps a demonstration is not the way to be used as an instructional process.	
3.	Steps to be followed during demonstration listed in correct order	
4.	Key points to be emphasised listed	
5.	Tools, equipment and materials needed listed	
6.	Review questions listed	
7.	Visual aids set up and materials listed on plan	
8.	Participants position allow easy access to hear and see	
9.	Physical setting arranged.	
Presentation of the demonstration		
10.	Principles related to student's previous knowledge	
11.	Interesting and aroused curiosity	
12.	Background information provided	
13.	New terms defined	
14.	Demonstration performed in steps. Each step explained.	
15.	Participants involvement (such as taking readings or measurements) encouraged	
16.	Key points reviewed	
17.	Questions posed to participants to measure understanding	
18.	Demonstration repeated, (when necessary)	

vi. Lecture

The popularity of the lecture method in imparting knowledge has been established for many centuries, its origin perhaps being the conversation between a master and an apprentice in times when the manuscript and textbook were virtually unknown. The lecture continues to be the most widely-used tool, particularly when there is a need to transfer new information to large numbers of people. It is still seen as a low-cost method; talk and chalk or in most cases merely talk. Instructors find it easy to lecture as they are in control of what they want to say.

A lecture is also defined as a period of interrupted talk. However, in TVET institutions today, with the assistance of technology more virtual aids are used, the length of time that a teacher talks uninterrupted is less. Perhaps even lesser with the application of instructional technology.


Note for users

When preparing for a lecture,

- Keep it short and simple; you can have it sweet too.
- Be selective with your content, include the "must haves".
- Keep the content moderate
- Engage your listeners
- Use media for support not distraction
- Turn lecture into active learning
- Involve learners
- Use questioning techniques

Advantages of a lecture:

- Economical – one teacher can instruct a larger number of participants;
- Communicates new material which is not contained in text books, experience related and where the information quickly becomes outdated;
- Desired by certain type or learners and learning style;
- Good during briefing.

Limitations of a lecture:

- Passive means of learning;
- Inefficient for retention of information;
- Challenging to keep main points in sight;
- Of little value to practical oriented participants;
- Challenged by critical thinking.

In addition to the notes for use given above, the template in Q-tool 19 below may become handy when preparing contents for a lecture.

Q-tool 19: Template for preparing lecture notes

Topic	Principles related to student's previous knowledge		
Outcomes	Interesting and aroused curiosity		
Group	Background information provided		
Duration (minutes)	Key point	Things to consider/ explore	Reference
00	1. a. b. c. d.		
15	1. a. b. c. d.		
30	1. a. b. c. d.		
45	1. a. b. c. d.		

An interesting lecture is a product of many good strategies. The guidelines given in Q-tool 20 below on Do's and don'ts when presenting a lecture when used strategically, not only cover the material but help engage learners and promote learning.

Q-tool 20: Do's and don'ts when presenting a lecture

Do	Don't
Preparation	
Outline the lecture for moderate content	Overload content, not everything is important
Practice delivery	Take for granted, even when you have done it before.
Prepare backups	Over optimistic
Delivery	
Speak clearly and loudly	Swallow words or mumble
Refer to notes when in doubt	Read from the slides or handouts
Maintain eye contact	Be shifty or intimidate the learners
Be enthusiastic about the topic	Use distracting mannerisms
Use gestures appropriately	Exaggerate /overdo gestures
Use visual aids when words are limited	Let visual aids take control
Handling Questions	
One question at a time, short and clear.	Long sentence structure, all in one.
Distribute questions	Let a few participants dominate session
Apply wait times	Give answers straight away or respond immediately

4. Key Points

The following table provides some ideas on the use of instructional methods that will promote self-reliant learning and develop the skills of a competent worker.

Do	Don't
Project	Application of integration of knowledge and skills to provide a solution to a problem or materialise an idea.
Case study	To get participants to discuss a real example of an issue, its application and implications or any other areas of interest
Demonstration (skill)	A link between explanation and practice using equipment to show what takes place, where and when
Lecture	Teacher speaks to group of participants (large or small) to introduce a topic or provide a briefing
Discussion	Either a small group or the whole class discussed specific aspects of a lesson
Brainstorming	To obtain large number of ideas from group of participants in a short time
Role play	Acting out specific and assigned roles in order to understand a problem or application of principles.
Computer aided learning	Step-by-step learning with the aid of a computer programme
Seminar	Method of presenting student work on a given topic.
Workshop practice	Use of tool, equipment and materials to produce an article.
Independent learning	Participants work on their own, based on task assigned
Laboratory work	Participants use equipment to prove or discover principles
Question and answer	Teacher asks verbal questions to which participants respond or vice versa
Simulation	Realistic practice in a safe virtual environment

General criteria for selecting methods of instruction depend on the following:

- Learning outcomes;
- Learner learning styles;
- Learning activities;
- ype of learners;
- Availability of resources;
- Time /duration;
- Instructor's preference;

5. Checklist

Please use the "Classroom Instructional Methods Check List" together with your partner to reflect on training quality. Please determine the strengths and possible needs for action and decide which points you would propose improvements.

Classroom Instructional Method Check List

Standards and Indicators Check List
Meaning of the scale:
++ everything is fine; + everything is satisfactory
-- action is needed for improvement; - improvement is proposed

Classroom Instructional Method Check List	--	-	+	++
Standards and indicators for TVET centres				
The coverage of the thematic area is comprehensive				
The objectives of the thematic area are well formulated				
The quality tools provided are helpful				
The description of project-based learning is clear				
We are clear on how to implement project-based learning				
The description of project-based learning is clear				
We are clear on how to implement the project-based learning				
The description of problem-based learning is clear				
We are clear on how to implement problem-based learning				
The description of case studies as a classroom instruction method is clear				
We are clear on how to implement case studies as a classroom instruction method				
The description of action learning as a classroom instruction method is clear				
We are clear on how to implement action learning as a classroom instruction method				
The description of the lecture method as a classroom instruction method is clear				
We are clear on how to make lectures interesting and interactive as a classroom instruction method				

CHAPTER 3: QUALITY TOOLS FOR THEMATIC AREAS

Thematic Area 5:

Assessment of Student and Teacher Performance[12]

1. Introduction

Purpose

The inclusion of teachers and students in quality development is very crucial. The assessment of their performance will provide a baseline data for continuous improvement of TVET delivery. For this purpose, this thematic area provides tools that can be used to measure the effectiveness of classroom learning and teaching.

When to use it

Teachers may refer to the tools offered in this thematic area when a tool or guidelines is needed to conduct or develop classroom assessment. To fit better it to the existing context, teachers may need to do reasonable adjustment, adopt and adapt the tools so that they are fit for purpose.

Setting

Assessment principles are to be applied to ensure the assessment administered meets its objectives. Third party involvement may come into play with respect to open coordination beforehand.

Facilities and Materials

Pin boards, workshop materials (cards, markers etc.), projector, visualization board, working materials (from the teachers), areas for communication and learning activities to practice cooperation, digital media, laboratories etc.?

Notes

Peer discussion and joint reflection might help more to overcome limitations during the assessment process.

Learning and teaching have both evolved from objective based to outcome based. What used to be teacher centred now focuses on participant performance. The premise of assessment is as described by Banta, T. W.et al is that assessment efforts should not be concerned about valuing what can be measured but, instead, about measuring that which is valued. Content, instructional methods, availability of resources and assessment are variables that have an immediate impact on determining their value in learning and teaching. Another factor that needs to be re-examined and given extra attention is the performance of teachers and instructors. Teacher performance, characterised by attributes such as preparedness, and competency in the learning and teaching process, and assessment, contribute significantly to the participant's performance. Thus, there is a need to understand

12. The material was used within classroom assessments and evaluation, quality control and quality assurance in GMI but deeply modified for a use in this handbook for quality toolbox.

the mechanics of assessment in learning and teaching and its contribution to determining graduate employment and marketability.

This thematic area provides some tools that can be used to help develop or enhance the quality of assessment in learning and teaching.

Assessment of student performance
Refers to any process of information gathering on the participant's performance in relation to the acquisition of learning outcomes. This includes assessment of knowledge, skills and attitude. They measure and quantify a student's performance against the stipulated learning outcomes through either systematic tests procedure (written, oral or practical) or non-test procedures (dissertations, presentations, assignments, projects, surveys, and portfolios). Results of assessment carried out by different entities serve different purposes.

- Teachers use information gathered from various assessment methods for such purposes as developing better future programmes and more successful learning interventions, or making modifications to the current training initiatives to
    - ◇ revise learning outcomes;
    - ◇ change learning materials;
    - ◇ make adjustments to better reflect students' differing learning styles
    - ◇ improve communication and delivery style;
    - ◇ create more interactive teacher-student activities; and,
    - ◇ diagnose specific participant performance issues.
- Training centres use assessment against occupational competencies to recognize the achievement of their participants through awards and recognition, and to market training programmes.
- Administrators and governors are interested in getting a return on their investment in training. This enables them to make sound decisions in allocating training resources.
- Industry depends on the TVET centres as feeder to their workforce. Assessment matters to them by ensuring the quality of training provided meets the requirements identified in the industry standards.

Assessment of student learning (assessment for learning) is more commonly known as formative assessment and provides diagnostic assessments which are used to improve a student's performance. Ultimately, the use of all assessments undertaken is to measure a student's learning progress during a unit or block of instruction. Teachers are now afforded the opportunity to tailor classroom instruction to the needs of the participants. Similarly, participants are provided with valuable feedback on their own learning. Student's performance is gathered and recorded through various assessment methods. This is done continuously throughout and within the duration of training.

Assessment of learning on the other hand, is for the purpose of certification. It is the use of a task or an activity to measure, record and report on a student's level of achievement in regard to specific learning expectations. This is also known as summative assessment. Tests and exam results are analysed and graded according to the established assessment grading structure. This is done once and at the end of the training. Depending on the assessment structure, the decision to certify maybe based solely on the student's performance during the final test/exam. In some centres/courses the assessment weighting is applied. Some assessments are weighted more than the others, and therefore the raw scores for these assessments will contribute differently to the overall scores for certification.

Assessment as learning is the use of a task or an activity to allow participants the opportunity to use assessment to further their own learning. It helps to develop and support their metacognitive

skills. Self and peer assessments allow participants to reflect on their own learning and identify areas of strength and need, learning to make sense of information they gathered, relate it to the existing knowledge, expand their schema and construct new learning. These tasks offer participants the chance to set their own personal goals, develop a sense of ownership and advocate for their own learning.

Assessment of teacher performance

Teacher performance in learning and teaching can be assessed from many areas. One area that needs attention is the preparation of the class. How the class is planned will determine how the class will end. Clear outcomes and strategies deployed to achieve the outcomes and the methods applied in assessing these outcomes are areas that should be weighted differently. However, the tools recommended for this thematic area are on session planning and teacher/instructor delivery during a class.

2. Objectives

The objectives of this thematic area are to

- provide instructors with guidelines for test and test items construction
- make available different types of assessment tools such as checklists, rating scales and rubrics that can be applied for assessing participants' work.
- provide basic tools for assessing teacher performance

3. Quality Tools

Student assessment reflects the true performance of the learners. Therefore, assessment tools such as prepared tests must at least satisfy the principles of validity and reliability. The Q-tool 21 below suggest some actions and guidelines that can be used to increase the validity and reliability of test items and test construction for assessing knowledge.

Q-tool 21: Steps for Test Paper Preparation

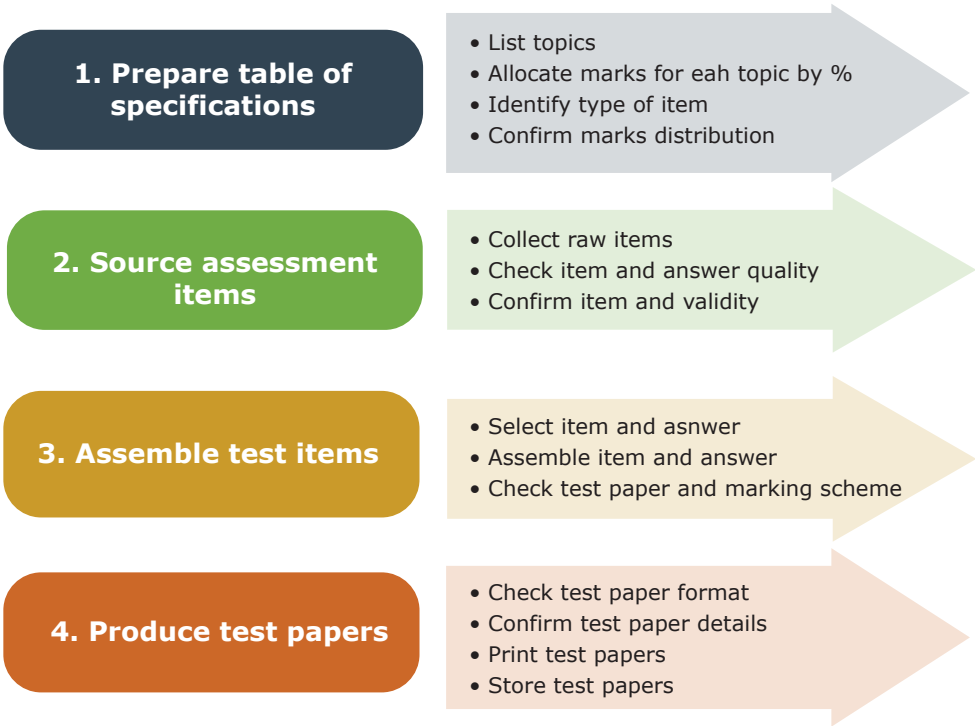


Table of specifications

It is recommended that each course or subject taught should have the specifications spelled out. This table is developed by the teacher /subject matter expert. This table is constructed to

- define as clearly as possible the scope and emphasis of the test
- relate the objectives to the content
- construct a balance test (different abilities)
- improve the content validity of the test

Assessment items

These include questions, instructions and statements use in the test papers. These items can be constructed in a way that the test participants respond either by selecting the best answer or by supplying the answer. Hence, the items are named selection type or supply type.

Items of selection type include:

Multiple choice - Consists of two parts: a stem and several alternatives. The stem is the question or statement which must be answered or completed by one of the alternatives. The alternatives are plausible answers or concluding statements from which one only must be selected.

The guidelines and checklist for preparing multiple choice items are given in Q-tool 22 and Q-tool 23 below.

Q-tool 22: Guidelines for constructing multiple choice items

Description		Check
Stem	presented in the form of a question, direction or of a statement to be completed	
	when an incomplete statement format is used, the options should come at the end	
	be presented as a single idea	
	be expressed clearly, avoiding grammatical errors and ambiguity	
	written in detail	
	words like "always" and "never" should be avoided	
Options	is a word, phrase, numbers, symbols, etc.	
	arranged in a consistent format	
	follow grammatically from the stem	
	expressed in a simple understandable way	
	have only one correct as the key answer	
	have definitely incorrect but plausible distracters	
	provide no verbal clues which might enable the participants to select the correct answer or to eliminate an incorrect option	
	"all of the above" or "none of the above" should be avoided	

Q-tool 23: Checklist for multiple choice item

Checklist for Multiple Choice Item		Check
1.	The item measures an important learning outcome	
2.	For an incomplete statement format, the option comes at the end of the statement	
3.	The stem poses a single, clearly formulated problem	
4.	The language used is clear enough to be understood by all test participants	
5.	Has the stem written in a positive form	
6.	The key is correct and clearly the best option	
7.	Item is grammatically consistent	
8.	Item free from clues	
9.	All the distracters are plausible	
10.	Usage of "all of the above" and "none of the above" has been avoided	

Items of supply type include:

Short answer-The time needed to answer this type of question should not be longer than five minutes (Refer Q-tool 24). Two types of short answer questions are i) a question is posed and the student supplies the answer by using a word or phrase; and ii) an incomplete sentence is given and participants must complete the sentence by inserting the appropriate word or phrase.

Q-tool 24: Checklist for short answer item

Checklist for short answer item		Check
1.	The item measures an important learning outcome	
2.	Direct questions used as much as possible	
3.	Fill-in-the-blank statements used only when a direct question is inappropriate	
4.	Precise questions written; only one answer is possible	
5.	Only one or two blank spaces used to avoid ambiguous statements	
6.	Blanks placed at the end, rather than at the beginning of a statement	
7.	Avoid reproducing statements verbatim from textbooks or your lecture notes	
8.	Enough space is provided for participants to answer questions	
9.	If choice of answers is to be given, it must be greater than the number of questions (e.g.: 8 questions, 12 choice of answers)	
10.	Item statement is clear and able to guide/direct candidate to select the best possible answer	

Structured essay - For these type of items, participants are limited in the nature of the answer they must give. Participants are told the specific content in which they must answer the item. This type includes calculation questions. This type of question takes fifteen to twenty-five minutes to answer.

Extended essay - In the extended response essay item, no restrictions or limits are placed on participants' responses. Participants are free to answer this item in any way they wish. In technical subjects, this may include calculations, drawing of graphs or circuits.

The following Q-tool 25 provides some guidelines when preparing the essay test items.

Q-tool 25: Checklist for Essay Item

Checklist for structured essay item		**Check**
1.	Design each item to measure an important learning outcome	
2.	Keep the questions brief and to the point	
3.	Write the questions in simple language	
4.	Tell participants how long their answer should be	
Checklist for extended response essay item		
5.	Design each item to measure an important learning outcome	
6.	Use essay questions only for higher learning outcomes which cannot be satisfactorily measured by other types of tests	
7.	Write questions which clearly tell your participants what they must do	
8.	Avoid giving optional questions. No choosing; answer all	
9.	Provide a time limit for participants to answer the questions	
Checklist for extended response essay item		
10.	Group together Selection Type items and Supply Type items	
11.	Arrange items from easy to difficult and from simple to complex	
12.	Space the items. Double spacing between items. It is easier to read and clearly differentiates items.	
13.	Keep items, figures and alternatives on the same page.	
14.	Place all figures, charts, tables and etc. above the items	
15.	Check all answer keys are correct and available when selecting and while assembling.	
16.	Determine how participants will record their answers	
17.	Check test directions. These are instructions at the top of each part of the examination format	

Rubric

Rubric is "a scoring/ grading tool that contains a list of criteria and benchmark standards and used to score or grade assessment tasks or learning outcomes. (MQA, 2017). Rubrics are best use when using non-test methods for assessing participants' performance such as presentation, assignment, projects, survey, or group work.

Rubrics can be created in a variety of forms and levels of complexity, but they all:

- focus on measuring a stated learning outcome of the assessment (each assessment method has been mapped earlier to which learning outcome to achieve)
- use a range to rate performance
- contain specific performance criteria
- performance criteria indicate the degree to which a standard has been met

Note for users

When using rubrics,

- Keep the language simple and parallel.
- Make it clear and transparent; avoid ambiguous statements.
- Write in conversational tone.
- Organise the content. The reader should understand what is needed.
- Be specific and descriptive. Avoid generalising.
- Customise rubrics. No one rubric fits all.

Rubrics provide instructors with an effective means of feedback and evaluation of student work. As instructional tools, rubrics enable participants to gauge the strengths and weaknesses of their work and learning. As assessment tools, rubrics enable faculty to provide detailed and informative evaluations of participants' work.

- Advantages of using rubrics:
- allow assessment to be more objective and consistent.
- clarify the instructor's criteria in specific terms.
- clearly show participants how their work will be evaluated and what is expected.
- promote awareness of the criteria to use when participants assess peer performance.
- provide benchmarks against which to measure progress.
- reduce the amount of time TTOs spend evaluating student work by allowing them to simply circle an item in the rubric.
- increase participants' sense of responsibility for their own work

Types of Rubrics

A Holistic Rubric involves one global, holistic rating with a single score (does not list separate levels of performance for each criterion) for an entire performance based on an overall impression. These are useful for summative assessment where an overall performance rating (grading) is needed, for example, portfolios. Some examples on use of rubrics are given in the quality tools (Q-tool 26 to Q-tool 33) below.

Q-tool 26: Holistic Rubric (Data Analysis)

Score	Description
4	Makes accurate estimations. Uses appropriate mathematical operations with no mistakes. Draws logical conclusions supported by graphs. Sound explanations of thinking.
3	Makes good estimations. Uses appropriate mathematical operations with few mistakes. Draws logical conclusions supported by graph. Good explanations of thinking
2	Attempts estimations, although many inaccurate. Uses inappropriate mathematical operations, but with no mistakes. Draws conclusions not supported by graph. Offers little explanation
1	Makes inaccurate estimations. Uses inappropriate mathematical operations. Draws no conclusions related to graph. Offers no explanations of thinking
0	No response/task not attempted

Q-tool 27: Holistic Rubric (Rubric to Assess Entrepreneurial Skill)

Score	Criteria	Range of scores
4	Very little, if any, successful attempt to analyse or evaluate information before making decisions Limited ability to apply the skills of enterprise to the identification of a suitable project or activity No variety in the methods of communication employed, or the communication was not suitable for the intended audience Some knowledge of enterprise concepts and terminology	1-4
3	Some attempt to analyse information before making decisions Reasonable ability to apply the skills of enterprise to the identification of a suitable project or activity A variety of communication methods employed, but not completely suitable for the audience	5-7
2	Ability to analyse information and evaluate courses of action before making decisions Good ability to apply the skills of enterprise to the identification of a suitable project or activity A variety of communication methods employed, fully suitable for the audience	8-10

Mark Band		Description
1	1 - 4	Work at this level is likely to be incomplete. The candidate may present only one of the two required pieces or two partially completed pieces of work. The work presented may be written notes rather than the formats requested. To gain marks in this task, however, there must be some use of relevant business concepts and terminology To achieve 4 marks candidates must show some evidence of the identification of a suitable project. Therefore, candidates who present only the wall chart are unlikely to gain higher than 3 marks as they will not be demonstrating this aspect.
2	5 - 7	Work at this level will provide evidence that both required tasks have been attempted. The wall chart/information leaflet and report will not be entirely suitable for the audience – there may be errors in the layout, spelling or language used. There will be evidence to show how the problem or need was identified and evidence of some attempt to evaluate their own entrepreneurial skills
3	8 - 10	To achieve Mark Band 3, candidates must produce evidence for both required tasks. In the report they will consider both the advantages and disadvantages of each project before making a decision. Candidates at this level will have used relevant terminology from the syllabus in their evidence and will have presented their materials using the required layouts. The language and layouts chosen will be suitable for the chosen audiences

An analytical rubric divides a performance into essential traits that are judged separately and then combining each judgement to make a decision on the quality of the response. They are usually more useful for formative assessment (that support learning during course or programme) since they provide more detailed and precise feedback to the student.

Q-tool 28: Analytic Rubric (Rubric to Assess Research /Project Proposal)

Criteria for Evaluation	Incompetent				Highly competent
INTRODUCTION					
1. Identifies research problems and key issues.	1	2	3	4	5
2. Appropriateness of objectives/purpose given the purpose, design and methods of study.	1	2	3	4	5
3. Appropriateness of research problems/hypotheses.	1	2	3	4	5
4. Clarity of operational definitions for all variables studied.	1	2	3	4	5

Criteria for Evaluation	Incompetent				Highly competent
LITERATURE REVIEW					
5. Provides comprehensive analysis of literature.	1	2	3	4	5
6. Demonstrates ability to critically evaluate past literature.	1	2	3	4	5
7. Shows ability in presenting literature review and forming themes.	1	2	3	4	5
8. Provides a strong theoretical framework of study.	1	2	3	4	5
METHODOLOGY					
9. Appropriateness of research design.	1	2	3	4	5
10. Appropriateness of target population and selection of samples.	1	2	3	4	5
11. Appropriateness of sample size and sampling procedure for the research questions and methodology.	1	2	3	4	5
12. Appropriateness of instruments/methods for gathering data.	1	2	3	4	5
13. Validity of instruments.	1	2	3	4	5
14. Reliability of instruments.	1	2	3	4	5
15. Appropriateness of data gathering procedures.	1	2	3	4	5
16. Appropriateness of data analysis.	1	2	3	4	5
OVERALL					
17. Utilizes appropriate language and grammar.	1	2	3	4	5
18. Citation structure and format follow acceptable protocols.	1	2	3	4	5
19. Viability of study.	1	2	3	4	5
20. Coherence of purpose, questions, interventions, data gathering methods, and data analysis methods.	1	2	3	4	5
TOTAL MARKS					

The following examples are rubrics that instructors can use for assessing project documentation, presentation, workshop report and assignment.

Q-tool 29: Marking scheme and rubrics for project documentation

Content	13 Marks
Format	2 Marks
Language	5 Marks
Total	20 Marks

Criteria	Component	Mark	Descriptor
Content	Project Title	1	-
2	Project Background -Paragraph 1 -Paragraph 2	1 2 1 2	Broad topic sentence 2 supporting statements More specific topic sentence (project title) 2 supporting statements
	Problem Statement	2	Problem statement directly derived from Project Background, clear and easily understood Deduct 1 mark if problem statement carries part of project objective
	Project Objective	1-3	Lead-in sentence after subchapter provided Maximum 3 objectives and must be in the infinitive form of a verb ('to' + verb) Deduct 0.5 mark for every objective provided not in the infinitive form
Format		2	Paragraphing in Project Background and Problem Statement + bulleted points in Project Objectives Deduct 0.5 mark for absence of each indentation (to indicate paragraphing) and bullet
Language		4/5	Good use of language that is clear and suitable for a report Correct and consistent use of appropriate tense Accurate spelling and effective use of punctuation Apparent cohesiveness and coherence Free from major grammar errors and carries minimal minor errors
		2–3 /	Fair use of language that is clear and suitable for a report Correct and consistent use of appropriate tense Few minor misspellings and adequate use of punctuation Fair display of cohesiveness and coherence Few major grammar errors and some minor errors
		0 – 1	Poor use of language and not suitable for a report Does not use appropriate tense Several major misspellings and incompetent use of punctuation Poor display of cohesiveness and coherence Many major and minor grammar errors

Q-tool 30: Marking Scheme and rubrics for presentation

Area	Total Score	Scoring Band	Criteria
Format	10	8-10 Exceeding Expectations	1) The presentation slide has all the sections presented in a neat and tidy manner.
		4-7 Meeting Expectation	2) The presentation slide has most sections presented in a neat and tidy manner.
		0-3 Not Meeting Expectation	3) Inadequate sections presented in a messy manner.
Content	20	15-20 Exceeding Expectations	1) Accurate information shared using multiple pieces of evidence (logical arguments, data or graphs). 2) Student able to answer or suggest resources to answer questions. 3) Audience can restate purpose of presentation.
		10-14 Meeting Expectation	1) Accurate information using evidence (logical arguments, data or graphs). 2) Student is able to accurately answer most questions posed by audience. 3) Audience can restate purpose of presentation.
		0-9 Not Meeting Expectation	1) Information is often inaccurate and/or irrelevant. 2) Student is unable to accurately answer questions posed by the audience. 3) Audience does not know purpose of presentation.
Creativity	30	20-30 Exceeding Expectations	1) Pictures on each slide as a presentation aid. 2) Included presentation with good video and good audio as an aid of presentation. 3) Attractive layout of presentation.
		11-19 Meeting Expectation	1) Most pictures on presentation slide as a presentation aid. 2) May included video or audio. 3) Good layout of presentation.
Creativity	30	0-10 Not Meeting Expectation	1) No pictures, only word on presentation slide. 2) Not also included with video or audio. 3) Messy layout of presentation

Area	Total Score	Scoring Band	Criteria
Presenta-tion skill	40	30-40 Exceeding Expectations	1) Awareness of audience demonstrated through form, language, and presence. 2) Innovatively or expertly advances the presentation with well-researched evidence and documentation. 3) Effective organization contributes to full development of presentation. 4) Eye contact is used to gauge reactions and understanding. 5) Creates enthusiasm about topic in others.
		20-30 Meeting Expectation	1) Sense of audience wavers. 2) Advances argument with sound evidence and references. 3) Moves beyond surface understanding and demonstrates facility with topical and disciplinary knowledge and vocabulary. 4) Appropriate eye contact is made with audience. 5) Shows enthusiasm for topic.
		0-19 Not Meeting Expectation	1) Unfocused sense of audience 2) Inappropriate or insufficient details to support ideas. 3) Does not demonstrate understanding of the presentation topics. 4) Look and read only at notes/slide or away from audience. 5) Lacks interest in the topic.

Q-tool 31: Marking scheme and rubrics for workshop report

Area	Total Score	Scoring Band	Criteria
Format	10	8-10 Meeting Expectations	1) The report has all the sections presented in a neat and tidy manner as per the workshop report guidelines and style.
		4-7 Approaching Expectation	2) The report has most sections presented in a neat and tidy manner as per the laboratory report guideline.
		0-3 Not Meeting Expectation	3) Inadequate sections presented in a messy manner and do not follow the laboratory report guidelines and style.
Introduction	15	10-15 Meeting Expectations	1) Introduction shows clearly objective of practical provides with all the necessary background, the scientific theory behind the practical and basic background needed to understand the practical discussed in the laboratory report.
		4-9 Approaching Expectation	2) The introduction does not clearly state the objective of the practical and background information.
		0-3 Not Meeting Expectation	3) Introduction states no theory background, scientific theory, and basic background of the practical. 4) Introductions are imitated from another group or person.
Methodol-ogies and Material	15	10-15 Meeting Expectation	1) Detailing of material for practical set up and clear explanation of procedure by assisted with figures and Figure.
		4-9 Approaching Expectation	2) List of material for practical set up and procedure are not clearly described.
		0-3 Not Meeting Expectation	3) Material and method are copied and pasted from practical procedure. 4) Material and method are plagiarised from another group or person.

Area	Total Score	Scoring Band	Criteria
Result and Discussion	50	35-50 Meeting Expectation	1) Complete collection of data using table and figure with titled/numbered and properly labelled at axis of figures. Discussion of the results in tabular format with prudent judgments. Have comparison of the measured results with theoretical value and citation from the peer-reviewed resources.
		15-34 Approaching Expectation	2) Result and discussion shows some understanding of what the practical was about.
		0 – 15 Not Meeting Expectation	3) Only restatement of the result without commenting on the expected key point. Incorrect judgment/arguments are used. Result and Discussion are plagiarised from another group or person.
Conclusion and References/ Appendix	10	8-10 Meeting Expectation	1) State whether the aim of practical has been achieved or not, summaries the key features of the method used, and summaries the most important results. State complete references to any book, articles and websites with indicating cited in the body of report with correct referencing format.
		4-7 Approaching Expectation	2) A conclusion is drawn, but not supported by practical evidence. Incomplete references to the books or any other sources used in the report and the references do not cited to the place in the report where the sources were used.
		0-3 Not Meeting Expectation	3) No sensible conclusion. The referencing is presented in wrong format. No evidence, attachments, appendices are attached. Online referencing was cited. Conclusion and References/ Appendix are plagiarised from another group or person.

Q-tool 32: Marking scheme and rubrics for assignment

Area	Total Score	Scoring Band	Criteria
Format	10	8-10 Exceeding Expectations	1) The assignment has all the sections presented in a neat and tidy manner as per the assignment report guidelines and style.
		4-7 Meeting Expectation	2) The assignment report has most sections presented in a neat and tidy manner as per the assignment report guideline.
		0-3 Not Meeting Expectation	3) Inadequate sections presented in a messy manner and do not follow the assignment report guidelines and style.

Area	Total Score	Scoring Band	Criteria
Intro-duction	20	15-20 Exceeding Expectations	1) Introduction show clearly objective of assignment provides with all the necessary background, the scientific theory behind the assignment and basic background needed to understand the assignment topic.
		10-14 Meeting Expectation	2) The introduction does not clearly state the objective of the assignment and background information.
		0-9 Not Meeting Expectation	3) Introduction states no theory background, scientific theory, and basic background of the assignment. Introductions are imitated from another group or person.
Content	55	45-55 Exceeding Expectations	1) The student response addresses all aspects of the assignment. 2) All directions are followed. 3) Appropriate and accurate specific examples are cited and explained. 4) Sound reasoning is employed. 5) Use of the skills of evaluation, analysis, and synthesis is apparent.
		35-45 Meeting Expectation	1) The student response addresses most aspects of the assignment. 2) Most directions are followed. 3) Appropriate examples are cited and explained, however, some inaccurate information is included. 4) Reasoning employed is on the inferential level. 5) Use of the skills of synthesis and analysis is apparent.
		0-34 Not Meeting Expectation	1) The student response addresses some aspects of the assignment. 2) Some directions are followed. 3) Some examples may be cited, may attempt to be explained, and inaccurate information is included. 4) Reasoning employed is on the concrete level. 5) Use of literal skills is apparent. 6) Content are imitated from another group or person.
Conclu-sion and Refer-ences/ Appen-dix	15	10-15 Exceeding Expectations	State whether the aim of practical has been achieved or not, summaries the key features of the method used, and summaries the most important results. State complete references to any book, articles and websites with indicating cited in the body of report with correct referencing format.
		4-9 Meeting Expectation	A conclusion is drawn, but not supported by practical evidence. Incomplete references to the books or any other sources used in the report and the references do not cited to the place in the report where the sources were used.
		0-3 Not Meeting Expectation	1) No sensible conclusion. The referencing is presented in wrong format. No evidence, attachments, appendices are attached. Online referencing was cited. 2) Conclusion and References/Appendix are plagiarised from another group or person.

Q-tool 33: General rubrics

Component	Part	Sub Criteria	1
Communication Skills	Report	Describing Idea	Fails to describe the ideas fully.
		Conclusion	No conclusions
		Delivering Sentence	Fails to deliver correctly
	Presentation	Eye Contact	Ignore of the eye contact with audiences
		Presentation Tools	"Chalk and talk" only.
		Confidence	No confidence
		Body language	bad uses of body postures and movements, inert and boring
Teamwork Skills	Interview	Group Cooperation	Members work in isolation
		Decision Responsibility	Responsibility for group decisions is shirked (to avoid)

2	3	4	Marks
Describes the ideas but mumbles.	Describes the ideas	Clearly describes the ideas	
Conclusions are stated but supporting information is not strong as 4 and 3.	The conclusion is drawn and described.	The conclusions are drawn and described.	
The delivery and sentence structure are generally correct.	The delivery and sentence structure are generally correct.	The delivery is engaging, and sentence structure is consistently correct.	
Eye contact to audience can be improved.	Concern of eye contact with the audiences	Eye contact is made and sustained throughout the presentation.	
Only using slide of overhead projector (OHP).	Just presented with Microsoft PowerPoint only present with limited use of multimedia	Present with multimedia software that enhanced presentation	
Lack of confidence	The confidence level sometime gone wobbly/ unstable/shaky	Presentation is full of confidence	
Suitable uses of body postures and movements, shaky all the time	Good uses of body postures and movements, discontinue a little bit	Excellent uses of body postures and movements, smooth and convincing	
Some members of group cooperate	All members of group cooperate	High level of cooperation between all members of group	
Responsibility for group decisions is not always shared by group	Responsibility for task is shared by group	All members shared responsibility for group decision	
		TOTAL (36)	

Checklist and rating scales

Various types of tools are used to measure student performance. Written tests are designed to measure student's knowledge performance rather than skill performance. When assessing skills performance, it is observed that there is a higher objectivity when scoring is done based on a standard assessment criterion. The scoring for the services or products has a higher objectivity and reliability. The common tools to assess services performed or product produced in TVET are checklists and rating scales.


Note for users

Notice that the items in the checklist can be written both in a statement form or a question. This is a matter of preference.

Checklist

There are many ways to produce a checklist. It can reflect the presence or absence of the knowledge; skills or attitude being measured. Checklist contains items listed in a sequence or an order. These items are listed according to a particular task directly observed (know how) or statements assessing the knowledge regarding the task (know why).

Characteristic of checklist.

In a checklist given in Q-tool 34 , the items to be measured/ assessed are written/ available on the left block and the scoring is done on the right. A tick or a cross are symbols that are used to mark the presence or absence of the desired knowledge, skills and attitude

Q-tool 34: Checklist for developing checklist

Item		Check
1.	Have criteria to be assessed based on outcomes	
2.	Decide on the method to respond	
3.	Tasks are practical and short	
4.	Difficult sequence disaggregated into simple and logical steps	
5.	Critical steps in the task highlighted	
6.	Statements are clear and direct	
7.	Review statements to ensure clarity	
8.	Statements written in observable/measurable terms	
9.	Format the checklist	
10.	The checklist is reviewed	

Given below is an example of assessing session planning using checklist. Please check the appropriate box if the observed item is present. Otherwise put a cross.

Item		Check
1.	Is the physical learning environment conducive to promoting learning?	
2.	Are the resources used able to meet the learning needs?	
3.	Is the learning engaging?	
4.	Are the activities designed to promote teamwork?	
5.	Is the social and methodological competence integrated in the learning?	
6.	Are the tasks designed authentic?	
7.	Are the tasks able to measure deep understanding?	
8.	Are the criteria for assessment clear and free from ambiguity?	
9.	Is the assessment comprehensive?	
10.	Is there any application of the assessment principles?	

Rating scales

A rating scale is a tool used for assessing the performance of tasks, skill levels, procedures, processes, qualities, quantities, or end products, such as reports, drawings, and computer programs. These are judged at a defined level within a stated range. Rating scales are similar to checklists except that they indicate the degree of accomplishment rather than just a short response; Yes or No.

Rating scales list performance statements in one column and the descriptions of what the learners are expected to achieve. They can be written either using or not using numerical scales, in another column on the right. This column /s on the right, form "the scale" and can indicate a range of achievement, from poor to excellent, never to always, superficial to exemplary, or strongly disagree to strongly agree.

In ensuring, consistency in developing the rating scales, Q-tool 35 is recommended.

Q-tool 35: Checklist for rating scales

Item		Check
1.	Written based on expected outcomes	
2.	Have clearly defined, detailed statements that show the different levels of achievement.	
3.	Participants can compare their work to the set standards	
4.	Statements are disaggregated into logical sections or flow sequentially	
5.	Wording is clear with numbers when a number scale is used	
6.	The range of numbers should be the same for all rows within a section	
7.	The range of numbers should either always increase or always decrease	
8.	Have specific, clearly distinguishable terms	
9.	Short enough to be practical	
10.	Highlight critical tasks or skills	
11.	Indicate levels of success required before proceeding further	
12.	Have space for other information	
13.	Reviewed by other instructors	

The example tool below is an example of a rating scale use to measure the following learning outcome: "The trainee is able to present the task in front of the class".

Rating scale for presentation skills

Item	Strongly disagree 1	Disagree 2	Slightly Disagree 3	Slightly Agree 4	Agree 5	Strongly Agree 6
Voice projection clear and loud						
Voice tone varied						
Gesture appropriate						
Pacing controlled						
Eye contact maintained						
Pronunciation clear						

Assessment of teacher performance

An established mechanism on assessing teacher performance is central to improving teaching delivery quality. Classroom sit-in is more commonly known as teacher classroom delivery evaluation (refer Q-tool 36) and is one method that can be used to assess level of teacher performance or identifying performance gap in teaching delivery. This enables the teacher to identify room for improvement by reflecting his/her own session or from another person's (peer) view. It is important to recognize that, for teaching to be effective, what is expected of teachers and how the teachers are expected to perform needs to be communicated. The criteria to be fulfilled, performance standards to be achieved or indicators should be clear and objective. Another important area is on assessing participants' performance. This include the preparation of test and test items as well as the reliability of scoring the participants' test scripts. Teachers and managers can use the following tool (Q-tool 36 or Q-tool 37) if and when necessary or applicable (in some countries only a person who is authorised by the regulatory body can evaluate the teacher in the classroom).

Q-tool 36: Teacher classroom delivery evaluation form

Trainer Name		**Assessor Name**	
Date		**Date**	
Overall Performance			
Criteria	**Maximum Score**	**Given Score**	**Remarks**
Session Plan • Learning outcomes • Session introduction • Session development • Session conclusion	10		
	10		
Session opening	5		
Application of delivery methods	10		
Selection of activities	10		
Use of audio-visual aids	10		
Session flow and management	10		
Trainer's engagement with participants	10		
Participant involvement during session	10		
Question handling	10		
Closing	5		
	80		
Assessment of learning outcomes	10		
	10		
Total	**100**		

Q-tool 37: Teacher performance in preparing test papers and scoring

Teacher Performance Assessment Form							
Note for resource person Indicate the level of the teachers' accomplishment by placing an X in the appropriate box under the LEVEL OF COMPETENCE heading. If the performance component is not relevant, place an x in the NA box.		Name					
		Date					
		Resource person					
		LEVEL OF PERFORMANCE					
		N/A	None	Weak	Fair	Good	Excellent
The assessment teacher developed							
1.	is valid						
2.	sampled student performance of the course learning outcomes						
3.	weighted the relative contribution of each type of the performance based on the assessment scheme						
4.	shows details of scoring						
5.	conform to the TVET centre grading policy						
In scoring, the teacher							
6.	is clear on what and how to assess.						
7.	award marks according to marking scheme						
8.	is well informed of the scoring methods and techniques						
9.	is competent; marking and scoring technique is reliable						
10.	Recorded the scores according to TVET centre requirements						
Remarks							

4. Key Points

- Assessment is a process of gathering information on student and teacher performance. The information gathered is used in the process form value judgement and make decision.
- There are many tools that can be used for measurement of knowledge, skills and attitude.
- There are three purposes of assessment; assessment for learning, assessment of learning and assessment as learning.
- Student performance is measured through knowledge assessment (knowledge and attitude domain) or performance assessment (knowledge, skills and attitude domain).
- The type of assessment tool used very much depends on the objective and purpose of performing the assessment.
- When performing assessment, it is important to ensure that the assessment is valid and reliable.
- There are many types of items to be used for assessing knowledge. Each item has its own characteristics.
- Selection type item has a higher objectivity of scoring as compared to supply type item. The higher objectivity of scoring for supply type item is obtained by using marking scheme.
- Rubrics, checklist and rating scales are assessment tools use in assignment commonly presentation, assignment, projects, survey or group work.

5. Checklist

Please use the "Assessment of Student and Teacher Performance Check List" together with your partner to reflect on the training quality. Please determine the strengths and possible needs for action and decide at which points you would propose improvements.

Standards and Indicators Check List

Meaning of the scale:

++ everything is fine;
+ everything is satisfactory
-- action is needed for improvement;
- improvement is proposed

Classroom Instructional Method Check List	--	-	+	++
Standards and indicators for TVET centres				
The coverage of the thematic area is comprehensive				
The objectives of the thematic area are well formulated				
The steps for test paper preparation are helpful				
The method to develop a table of specifications for assessment is clear				
We are clear on the principles of assessment regarding validity and reliability				
We are competent in developing quality test and/or test/ examination papers				
We are competent in developing quality marking schemes for test/examination papers				
We possess the knowledge to construct all types of items for assessment				
We can analyse the effectiveness of the items constructed				
We are clear on how to perform scoring of items				
We are competent and able to develop rating scales				
We are competent and able to develop rubrics				

CHAPTER 3: QUALITY TOOLS FOR THEMATIC AREAS

Thematic Area 6:

Cooperation with the business sector to improve TVET quality

1. Introduction

Purpose

Successful implementation of **Cooperation with Industry** is based on the interests of industry in participating in technical and vocational education and the willingness of TVET centres for demand-driven training and education approaches. The two "partners" have to find a means of cooperation to achieve quality-oriented teaching and learning processes which provide knowledge and skills to enrich work.

When to use it

The implementation of cooperation with industry must become a primary issue in the development of TVET centres. Many strategies can be availed upon to achieve this outcome and be detailed in the practical activities of the centre and, most importantly, in companies in industry.

Setting

Cooperation with industry strongly influences the design and application of learning methods and the learning environment. The context of learning must be designed in a way which supports a development-oriented learning process to build up relevant competencies.

Facilities and Materials

Pin boards, workshop materials (cards, markers etc.), projector, visualization board, working materials (from the teachers). Areas for communication and learning activities to practice cooperation.

Notes

Examples are helpful to demonstrate how cooperation works.

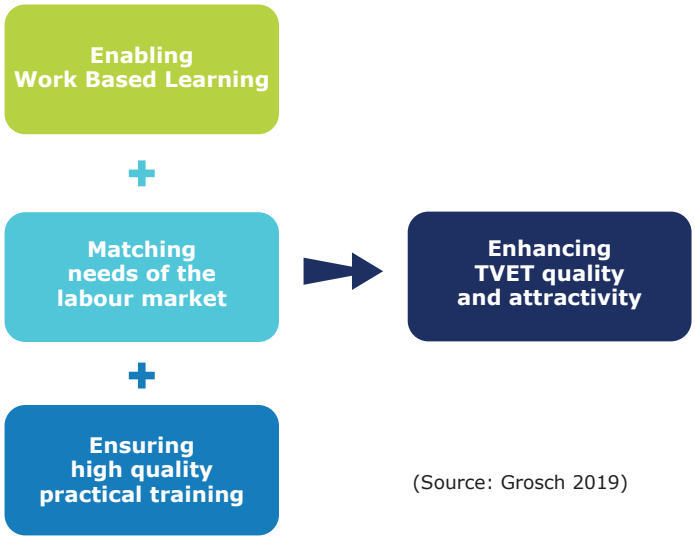
Implementing linkages with the business sector to secure the quality of training in TVET

Nowadays, we face rapid changes in the workplace and consequently training programmes have to be designed in a way that enables trainees to cope with these changing requirements. No longer are "small skills" sufficient for coping successfully with the challenges of the workplace. Instead, we need "broad competencies" to provide flexibility to trainees. Enhancing TVET QUALITY is a highly relevant issue and a continuing requirement (cf. Figure 21). Three parameters are the focus of this requirement:

- enabling work-based learning (WBL),
- ensuring high quality practical training and
- matching the needs of the labour market with the training system.

All three parameters are very complex and underpin "Linking TVET with the Business Sector" (Grosch 2019) as an important step in operationalizing these three parameters of quality. Linking TVET with the business sector means establishing close cooperation between TVET centres, companies and other business fields. Linkages between TVET and the business sector is a specific form of Public Private Partnership.

Figure 21: Industry Linkage Benefits [21]



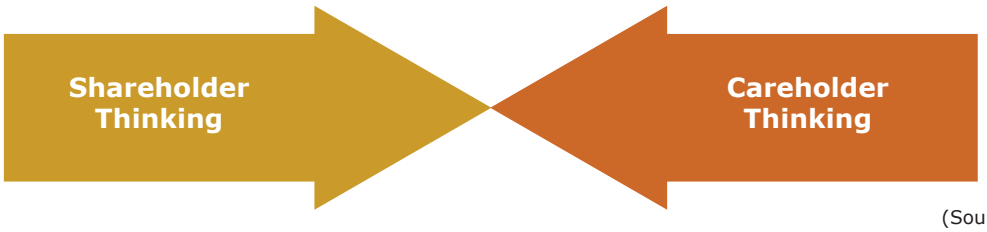
(Source: Grosch 2019)

For the design of training programs, it is necessary to stay in close touch with developments in the workplace. This favours arrangements which promote possible interrelationships between government, as the main agent in providing training, and private sector establishments – commonly known as public-private partnerships (PPPs) or industry/business linkages[12]. However, this relationship is not free of tension (cf. Figure 22):

- In many countries, the business sector is reluctant to engage in education;
- Public colleges can be reluctant to engage with companies;
- Cooperation is often just an idea, not a reality;
- School-based and academic systems are not always motivated to cooperate with industry/business;
- A tradition of training qualified skilled labour in cooperation with industry/businesses is missing;
- TVET is defined as a public task and companies are not training organizations;
- The business sector usually does not see it as a positive cost-benefit relationship; and
- If companies engage, they prefer to cooperate with higher education institutions.

These statements demonstrate that a cooperation with the industry/business needs specific effort to succeed. But there is no other way as to proactively convince the companies to engage.

Figure 22: Partnership and Conflicts [21]



(Source: Grosch 2019)

12 The role of a government in linkages between TVET centres and the business sector is in shaping infrastructure to support these activities. An overall term used for these activities is public private partnership.

Any partnership-program must be aware that the government's prime aim is the achievement of a well-trained workforce, while it is the business sector's legitimate prime aim to make a profit. There must not be any discrepancy between these two prime goals. Therefore, the main objective in designing cooperation between training centres and companies is to ensure that the goals of the public and private domains are as identical as possible. This makes a real symbiosis possible. On the one hand, the skilfulness of the workforce is an important factor in any production process, and, on the other hand, the quality of training is to quite some degree dependent on the involvement of the trainee in the actual production process.

Consequently, linkages in the context of TVET are not only possible but are in fact desirable. If properly designed, they can be a very successful instrument in providing quality training.

Note for users

For the design of training programs, it is necessary to stay in close touch with the workplace. The workplace defines training requirements. This favours arrangements which promote possible interrelationships between the private sector and TVET centres – including the participation of the government commonly known as public-private partnerships (PPPs) or industry/business linkages. However, these relationships are not free of tensions in many countries because the business sector is reluctant to engage in education, and public colleges can be reluctant to engage with companies!

It is not sufficient to just place trainees in the prodtion process. This approach, which is occasionally named a "new apprenticeship" lacks the important component of guided training by companies and senior skilled workers in the workplace.

Successful linkages between TVET centres and business sectors require a more manifold relationship between the private sector and formal and non-formal training programs offered by public institutions. This cannot easily be achieved, as the private sector is traditionally hesitant to open its doors to cooperation with TVET centres.

2. Objectives

The objectives of this thematic area are that TVET teachers and mangers will be able to:

Identify key elements and the scope of cooperation between TVET institutions and the industry/business sectors;

- Identify and articulate arguments to address cooperation requirements between TVET institutions and industry/businesses, for different stakeholders and purposes;
- Differentiate stakeholders and their interests, the potential and limitations in cooperating with TVET institutions;
- Apply appropriate methods, tools and instruments for addressing key elements in designing and implementing work-based TVET in cooperation between TVET institutions and industry/business sector;
- Apply national law and regulations (e.g. opportunities regarding incentives and recognition) in the development of approaches for cooperation between TVET institutions and industry;
- Illustrate that qualified in-company trainers are a necessary precondition for cooperative TVET, and
- Describe the costs and benefits of cooperative TVET models.

One of the most important milestones is the "Engagement in business cooperation … to take in more market demand related perspectives in TVET education and training programs … and strengthen the quality of TVET personnel". This includes the design of study courses considering industry needs, access to the private sector, quality requirements of the labour market, and innovations in collaboration with the private sector. The overall requirement is to assure the sustainability of the contribution.

3. Quality Tools

Initiating Linkages with the industry / business sector

What are the "learning environments" and core requirement of cooperation?

Within a framework of industry/business linkages, there needs to be developed a basis for a profound understanding of the cultural background underlying work and training. In this context, the ultimate goal must be to provide trainees with first hand work-process experiences at well-organized and appropriately equipped workplaces. The trainees should be involved there as junior partners, working together with senior skilled workers who guide them in achieving the necessary competence.

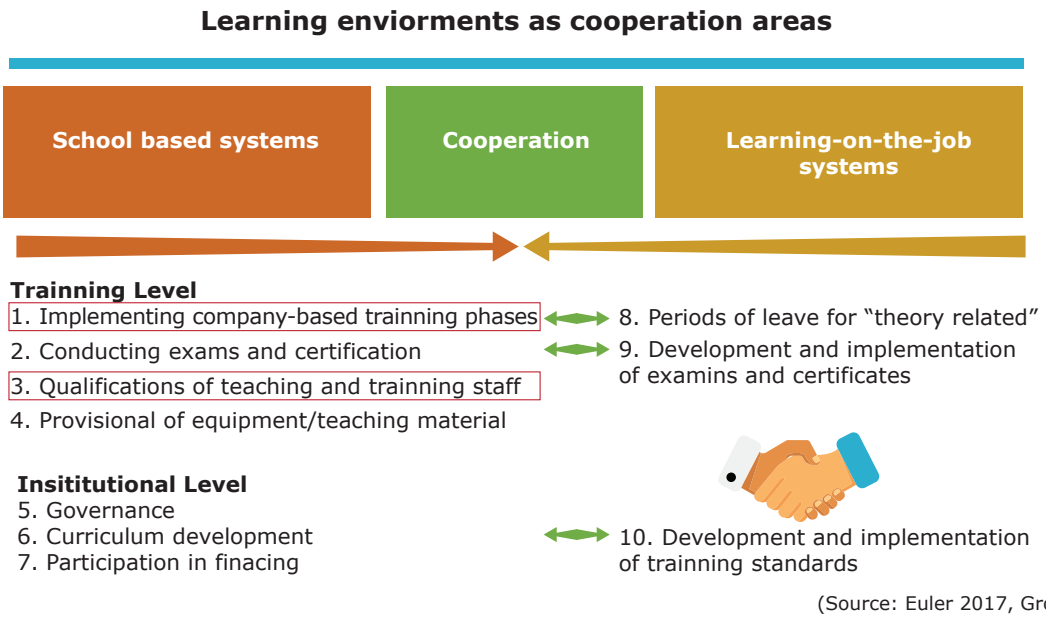
A successful industry/business linkage in training must therefore (a) offer trainees appropriate access to a well-equipped and demanding work-process, where (b) senior skilled workers provide guidance in acquiring the necessary competences and where (c) supplementary theoretical instruction in an institutional setting must be offered. The key component of such a partnership is the provision of "guided involvement of trainees in actual work-processes". If this can be achieved, a linkage with the business sector can be the setting for a real win-win situation where trainees are offered optimum quality training while the business sector enjoys the advantages of a well-trained workforce.

Firstly, a relevant framework of conditions needs to be analysed:

- companies/business sector: ownership (state owned, private, foreign, local); size (micro, small, medium, large); economic sector; staff recruitment (local, regional, national, foreign);
- umbrella organizations: business associations, federations, chambers, guilds and employee representatives can play and essential role in cooperation,
- which challenges might arise during the implementation of a cooperation model? (cf. Grosch 2019).

One of the core questions for clarification is: which forms/areas of cooperation should be considered? A core target has to be partners actively engaged in cooperation with the business sector (cooperation between training institutes and companies/business) to take a more labour market demand-related perspective in TVET education and training programs, and eventually strengthen the quality of TVET personnel. If partners intend to achieve this core target, ten fields are relevant for cooperation (cf. Figure 23). These fields demonstrate the complexity and diversity of important parameters which must be considered.

Figure 23: Ten fields relevant for cooperation



(Source: Euler 2017, Grosch 2019)

An overview of areas for cooperation is set out in Figure 23 The starting points for cooperation might be characterized as follows:

a) Development of
- Standards of curricula;
- Concepts in using equipment and teaching material (e. g. digital media);
- Concepts for company-based training phases;
- Concepts of teaching and training teaching staff;
- Concepts of leave for "theory related" TVET stages.

b) Guidance (Governance):
- Supervision of program implementation in TVET centres:
- Supervision of the implementation of exams and certification and to bring it in operation:
- Supervision in the concept development and ensuring financing.

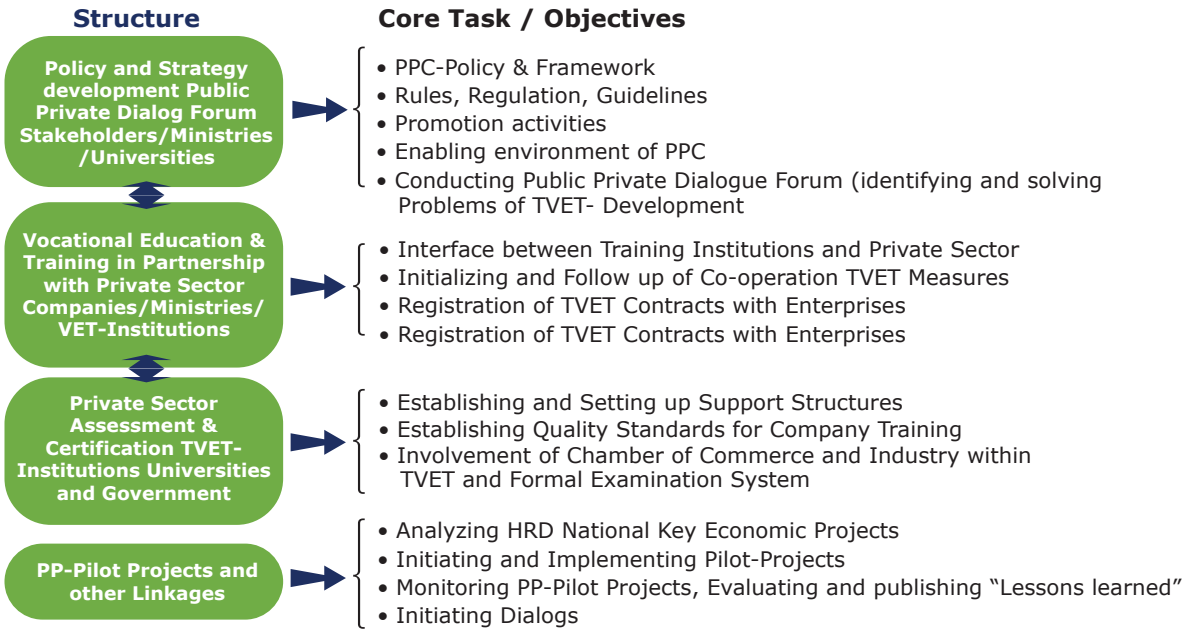
c) Evaluation:
- Program evaluation in companies and in TVET centres;

d) Quality Assurance
- Implementation of QA and QD approaches in TVET centres; and
- Development of quality in the context of training etc.

Points c) and d) are not listed as fields relevant for cooperation. However, these two points are important in ensuring quality development and must be a permanent part of all cooperation activities to strengthen the quality of TVET target groups.

Consequently, linkages with the business sector in the context of TVET are not only possible but are in fact desirable. If properly designed, they can be a very successful instrument for providing quality training. Figure 24 provides an overview of the institutional partners and their main objectives. At different levels and with different interests, the institutions play a role in cooperation with industry. To better benefit companies, all the institutions have to support the concept of linkages with the business sector to help to improve the quality of training.

Figure 24: Institutional groups and core objectives for cooperation



What are the principles of cooperation at the institutional level?

Public institutions aim to facilitate innovative TVET developments in line with educational, social, economic and industrial developments in respective countries and the needs of the business sector. Two of the most important questions are:

- how to cooperate with the business sector? and
- what are the main areas for cooperation?

For "how to cooperate", it is important that any initiative include the following actions:

- identify the most relevant sectors and sub sectors for your institution;
- identify suitable companies as possible partners;
- initiate cooperation: make contact, convince the company, create trusting relationships, make an agreement.

These actions are the most important first steps in starting cooperation between institutes and industry. After the identification of industry sectors and companies, the potential of companies must be analyzed (cf. Table 11). As an orientation for this important step, questions are listed in Table 11. This identification work must be done by teachers from the TVET centres and by company partners (e.g. trainers). Government institutions might support this step without interrupting the selection process.

Table 11: Company visits - Questionnaire [13]

General information
What size is the company (employees, revenue, locations etc.)? What is the range of products? Does it lack workforce in certain areas? What are the degree levels of staff in work profiles/career levels? What kind of support is given by the government? Is the company owned by foreigners or nationals? Other important general information
Training
What types of training are conducted for new employees? What certification do the trainers hold? How long do the courses take? Do they have internal or external trainers? Other important information concerning training
Recruitment
What are the company's requirements for recruitment? What types of employees are needed? What competencies, knowledge, skills, attitudes do the employees need? What is the company doing to recruit new employees? Does the company go to job fairs at universities/colleges/TVET centres? Does the company receive visits from student/teacher groups? Other information regarding recruitment
Curriculum
How could joint curriculum (TVET centre-company) be created? How does the company develop their curriculum? How could the TVET centre improve its curriculum to match the company's needs? How could the gap between theory and practice be closed? Other information regarding curriculum

13 Developed by participants of the so called "Multiplier Training 2019" and modified by the authors.

Internship
Does the company have an internship program? How could the company help TVET centres to create internship places? How could sustainable internship activities be developed? How many students can be taken on as interns per year? How many students are currently involved in internship programs? How long is the internship program? Other information regarding internship
Mutual Benefits
What difficulties does the company face when developing cooperation with a TVET institute? How could joint research between TVET and company be conducted? How could cooperation be "realised" (from MoU to real activities?) Is there a CSR (Corporate Social Responsibility) unit at the company? Are there any established institutional and personal relationships with universities, colleges, TVET centres? Other information regarding mutual benefits
Final comments:
Based on what you learned at the company, can you provide any recommendations for specific projects for cooperation?

Another issue is how to support and improve the quality of TVET personnel regarding their qualifications:

- definition of regional standards for education and training of vocational personnel / instructors,
- knowledge transfer between TVET centres and the private sector,
- qualifications of TVET personnel in partner countries through recommendations for reform.

Q-tool 38 summarizes the necessary development steps to consider in undertaking an initiative for better linkages between TVET centres and businesses. Both partners need qualified teachers and training staff to manage the 13 steps.

Q-tool 38: Preparation of cooperation

Item		Check
Preparation Stage: Development of:		
1.	Synchronize and adapt standards and curricula to make them ready for use in any cooperation between TVET centres and business	
2.	Concepts using equipment and teaching material (e. g. digital media …)	
3.	Concepts for company-based training phases	
4.	Concepts of teaching and training for teaching staff	
5.	Concepts of leave for "Theory related" TVET stages	

Item		Check
Preparation Stage: Guidance (Governance)		
6.	Supervision of program implementation in TVET centres	
7.	Supervision of the implementation of exams and certification and its operationalization	
8.	Supervision in concept development and ensuring financing	
Preparation Stage: Company visits		
9.	Questionnaire see above	
Preparation Stage: Evaluation		
10.	Program evaluation in companies and TVET centers	
11.	Evaluation of training programs in training centers etc.	
Preparation Stage: Quality Assurance		
12.	Implementation of QA and QD approaches in TVET centres	
13.	Development of quality in the context of training etc.	

TVET personnel – a pillar for cooperation

TVET personnel of TVET centres and companies play a key role in the implementation of a partnership. These groups must be prepared for initiating and establishing cooperation.

Roles and Tasks of TVET personnel:

1. **TVET personnel:** The qualification of TVET personnel at universities or in-service must adhere to scientific standards. Additionally, it is obvious that TVET personnel must also be prepared to develop successful interlinkages between TVET centres and business sectors.

2. **Standards:** The development of standards for the qualification of TVET personnel must adhere to professional and/or scientific criteria. Clearly, surveys should be conducted on quality requirements in the private sector and in public institutions about the need for qualified TVET personnel. Managing cooperation opportunities must be one of the pillars of TVET staff.

3. **Innovation:** Initiating innovative developments in TVET can only be achieved through close cooperation with the business/industry sector with the following objectives:
   - identify where and which innovations (further developments) are necessary;
   - how they could be reached; and
   - who should be involved?

These innovations could refer to the development of TVET itself and could lead to greater acceptance in companies.

Success factors for cooperation between TVET centres and industry

Some key issues for the success of cooperation are:

- the existence of qualification profiles for TVET personnel able to manage cooperation between TVET centres and industry/business;
- theoretically underpinned needs-driven standards which support cooperation between TVET centres and industry/business; and
- a high level of sensitivity by TVET personnel and those qualified within the TVET system for initiating cooperation.

The qualifications of TVET personnel are important pre-requisites in initiating and running cooperation with industry. Qualification areas are set out in Figure 5. The German standards for in-company trainers might be helpful. An adapted version provides an orientation for the ASEAN countries about the need for qualified TVET personnel in supporting partnerships between TVET institutions and industry. The existing ASEAN standards should be used to set the standards for TVET personnel involved in the shaping process of cooperation between a business and a TVET centre. Barriers for cooperation include:

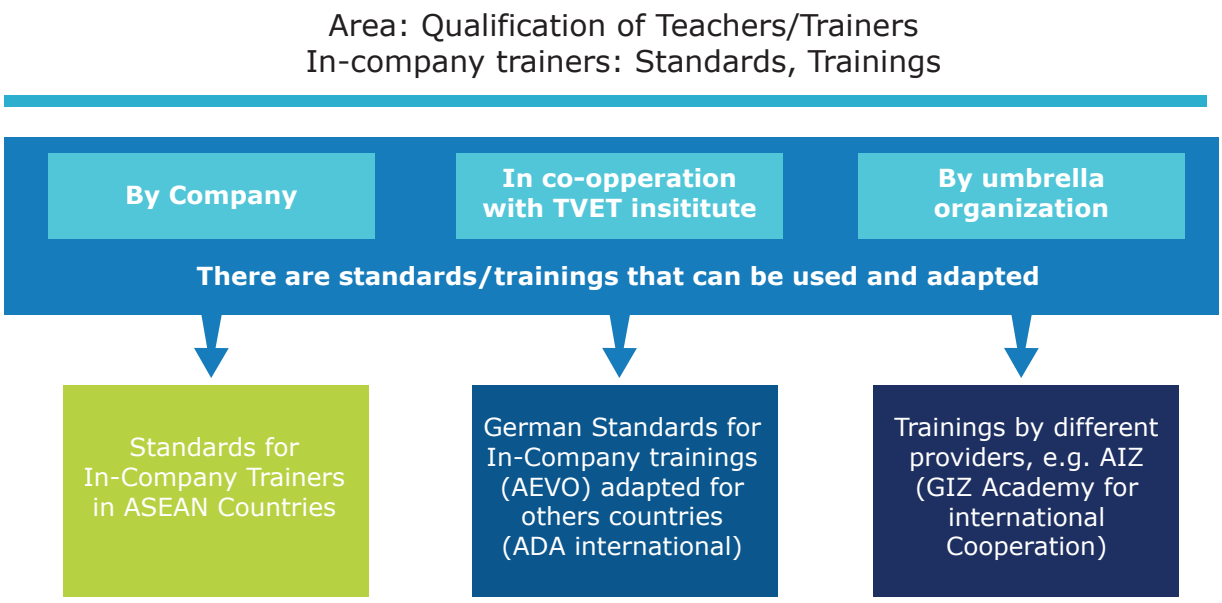
- for schools/colleges, teaching staff with little practical or company-based training;
- for companies, no existing pedagogical competency;
- for both: low TVET reputation, low payments and poor working conditions leading to a low motivation to engage in partnerships.

To overcome these barriers, trained staff on both sides and frameworks for cooperation and collaboration are required. The motivation of in-company trainers to support cooperation with colleges and government intitutions usually requires rewarding staff, such as through:

- a salary raise;
- career development opportunities;
- reduction of unattractive other tasks.

For management and HR development, it is important to learn to think and act over the long term when it comes to training and cooperation with partners. Training activities have to be part of quality-oriented HR development processes which need time to succeed.

Figure 25: Areas of qualification of in-company trainers [21]



Instruments for implementation: Company supports college and college supports companies

The Q-tool 39 below sets out some of the main issues in establishing interlinkages between TVET centres and business sectors. The role of the staff of TVET centres and companies is very important in the establishment process.

Q-tool 39: Preparation of cooperation

Item		Check
Preparation Stage: Company		
1.	Companies train college teachers by work placements to enhance practical competences	
2.	Companies send their staff to teach the teachers at the college	
Preparation Stage: Colleges		
3.	Companies learn from colleges how to shape learning and training processes	
4.	Colleges support companies to train college staff	
5.	In-company trainers are the key partners and college staff builds ab frames of cooperation,	

Sectoral committees as key players in cooperation

Companies do not see themselves as being responsible for TVET. They see themselves as business units. It makes a lot of sense to place company representatives in bodies dealing with TVET to help overcome this attitude. At the macro[14] and micro level in many countries several bodies exist to support TVET activities. When it comes to cooperation and partnership with companies, the most promising cooperation is supported by sectoral committees because they operate from the bottom up and ensure a close link between company needs and training activities.

For partnerships between TVET centres and private business, sector-related committees consisting of members of the private sector, universities and government representatives and training institutions should be created. This partnership – especially between the government and the private sector – should also finance additional efforts needed to develop the partnership.

The "sector committee" should monitor all relevant themes, tasks and cooperation issues relevant to the improvement of TVET quality (see also Table 12). A sector-based level always means direct cooperation between sector representatives and other stakeholders to ensure links to the requirements and practical issues of a sector.

Table 12: Sector Committees – Members and Roles/Tasks

Members	Representatives of industry; universities, training institutes, government, ministries
Scope	National level: national sector committee at the policy level
Tasks	Steers all questions relevant for TVET in a sector
Funding	Main beneficiaries e.g. private sector and government
Benefits	a) Identify relevant research topics b) Secure support from committee members

Where Trade Unions exist, their role in participating needs to be determined. As each country pursues its own plans for TVET and applies its own rules and laws, the need to establish "sector committees" in each individual country is obvious. With sector-related committees, it means that we can no longer speak generally about the private sector. Moreover:

- Sector committees with representatives from the sector, the government, universities and training institutions will be established for all economically relevant sectors in each respective country.
- Committees should be "lean" organizations and guidance should be in the hands of industry representatives in close cooperation with TVET organisations.
- A "creative balance" of the distribution of seats is required.

14 Macro level: [22]

- Legislation: development of laws occupational standards, standards for teaching and training staff, quality standard or the quality of education in the learning places.
- Umbrella organizations: companies with credibility and influence are engaged in TVET relevant bodies (e.g. trade associations, chambers, sectoral skills councils)
- National TVET agencies: they connect public and private-sector interests, e.g. in . Brazil, Malaysia, Ghana, Bulgaria or Saudi-Arabia [24]
- Quality labels: award a "seal" for companies that have been conducting high quality training
- Public relations: "Apprenticeship Ambassadors Network (AAN)" a group of senior business leaders from US businesses which are committed to advocate for TVET in UK.

The sector committees are responsible for steering all questions relevant to TVET and TVET personnel in a sector. In order to avoid TVET and initiatives for the qualification of TVET personnel not developing heterogeneously in a country, the committee must have policy-making power. Q-tool 40 summarizes important factors for cooperation between TVET centres and business sectors. It might be used as a reference tool.

Q-tool 40: Success factors for cooperation between TVET centres and business sectors

Item		Check
Factors of successful implementation		
1.	Relevant sectors for TVET are identified	
2.	Government services/agencies, private sector (companies) and universities and private institutes agree to cooperate	
3.	Financing of the linkage of TVET centres and business sectors is clarified	
4.	Sector committees are formed	
5.	Existence of typical qualification profiles of TVET personnel	
6.	Theoretically underpinned standards that excel by that closely approximate requirements	
7.	High sensitivity of TVET personnel and those qualified within the TVET system for initiating cooperation	
8.	Rules for cooperation between industry partner and TVET centres are clarified	

Detailed parameter relevant for implementation of a partnership

To achieve the 8 factors above in Q-tool 40, planning and preparing is needed. Important instruments are:

- the development of a cooperation plan during a workshop;
- the preparation of relevant documents;
- an MoU;
- the creation of regulations: qualifications for trainers; entry requirements for students; safety and health; practical assessment and examinations;
- the definition of standards: occupational standards; what to learn/teach; skill lists; curricula; syllabi; assessment standards;
- legal documents e.g. training contract
- training materials, manuals etc.
- places allocated to learn in colleges and companies.
- Selection of highly motivated students;
- Optimal selection of staff members, teachers, trainers, supervisors.

The overall direction of all of the planning is to convince companies to participate in TVET cooperation arrangements. To achieve this, arguments must be prepared at different levels [22]. To ensure success, it might be necessary to stay away from an intensive formal definition of the cooperation.

Q-tool 41 delivers core arguments on the importance of cooperation between TVET centres and business sectors. These arguments might help to convince companies to participate in partnership models.

Q-tool 41: Arguments supporting cooperation between TVET centres and companies

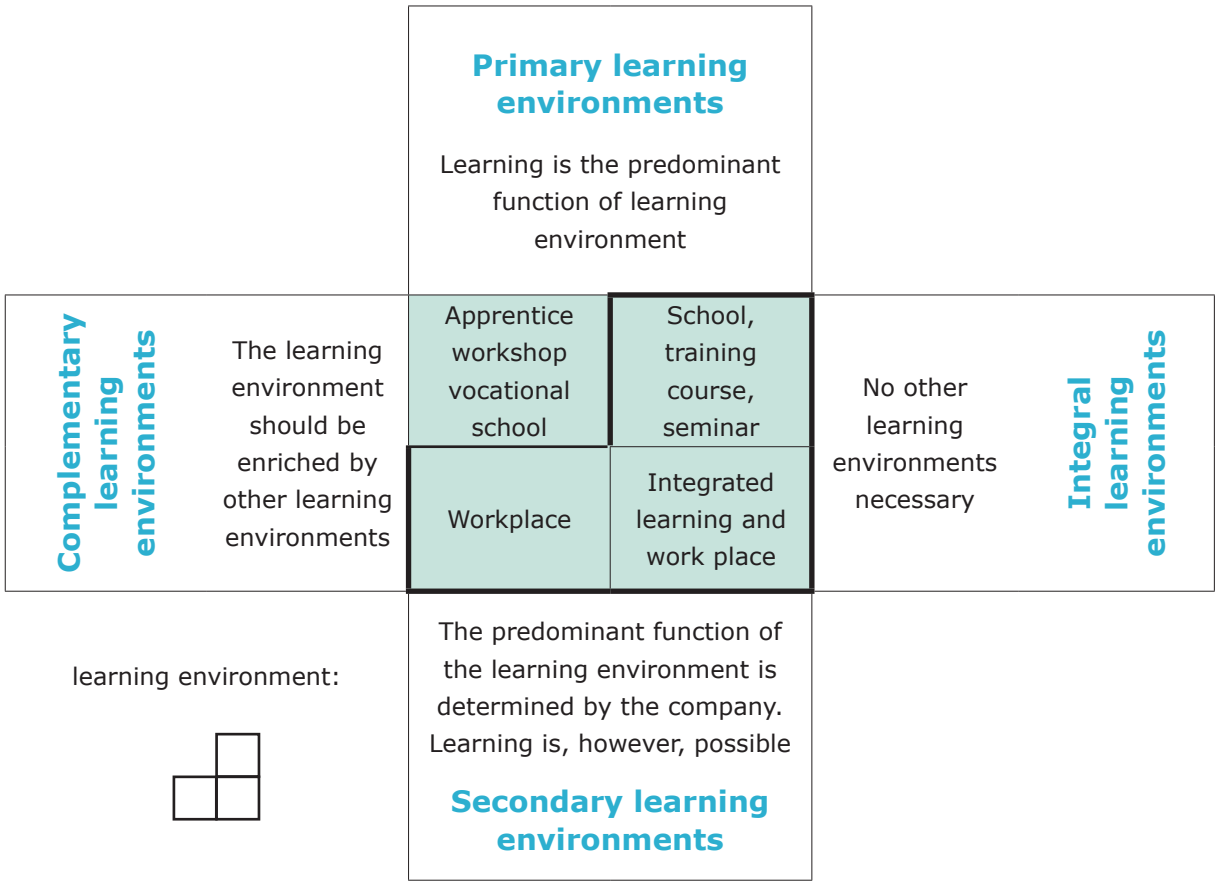
Item		Check
factors		
1.	**Relevance:** Companies refuse to cooperate with TVET institutes, which base their training on outdated curricula. If governmental authorities, such as TVET institutes, are the sole responsible bodies for conducting assessments, companies cannot be sure that the trainees have acquired the essential skills, which are required by them. *Standards and curricula have to reflect the occupational needs of business and industry.*	
2.	**Cost-benefit:** The costs of providing in-company training are too high from the perspective of companies. Companies would have to pay compensation to the trainees in addition to providing an adequate training infrastructure (qualified instructors and equipment). *The training has to be organised in a way that companies are convinced to get some benefits out of it.*	
3.	**Productivity:** It takes very long before trainees are able to carry out work-related activities independently and without constant supervision. *It is a crucial requirement to interlink the training with the work-processes of the company to support productivity via training.*	
4.	**Poaching:** There is no guarantee that trainees will stay as regular workers after the end of their traineeship. Companies don't want to invest in the training of people, who might not intend to continue working for them. *Companies have to demonstrate a clear position to hire the training people and have to offer career options in the end of the trainee period.*	

3.4 Models of learning environments within partnerships

As for alternative models for TVET and business sector interlinkages, loose cooperation between different networks and members with various institutions on a bilateral and superordinate level could be feasible. While such forms of cooperation are part of sector committees, the central question to be clarified is how the sustainability of the network could be safeguarded beyond the life span of projects? Another question that arises is how this kind of cooperation could successfully contribute to the further development of TVET? If both questions cannot be completely and extensively answered, question marks will remain.

It makes sense to place learning environments at the centre of cooperation concentrated between different objects (e. g. theory and practice). Successful learning within TVET always involves cooperation between different learning environments. The structure of learning environments shown in Figure 26 is meant to serve as an orientation for cooperation, to verify which learning environments should be established for which kind of cooperation.

Figure 26: Cooperation of learning environments



Good practice in networks can be characterized as the successful operation of TVET projects with different types of cooperation:

Impact:

- sector committees are working and monitoring TVET training;
- approaches for cooperation are established to support quality development;
- quality based standards for TVET are implemented;
- companies are actively participating in TVET training.

Cooperation principles within triangular cooperation

In a narrow sense, TVET can be determined as:

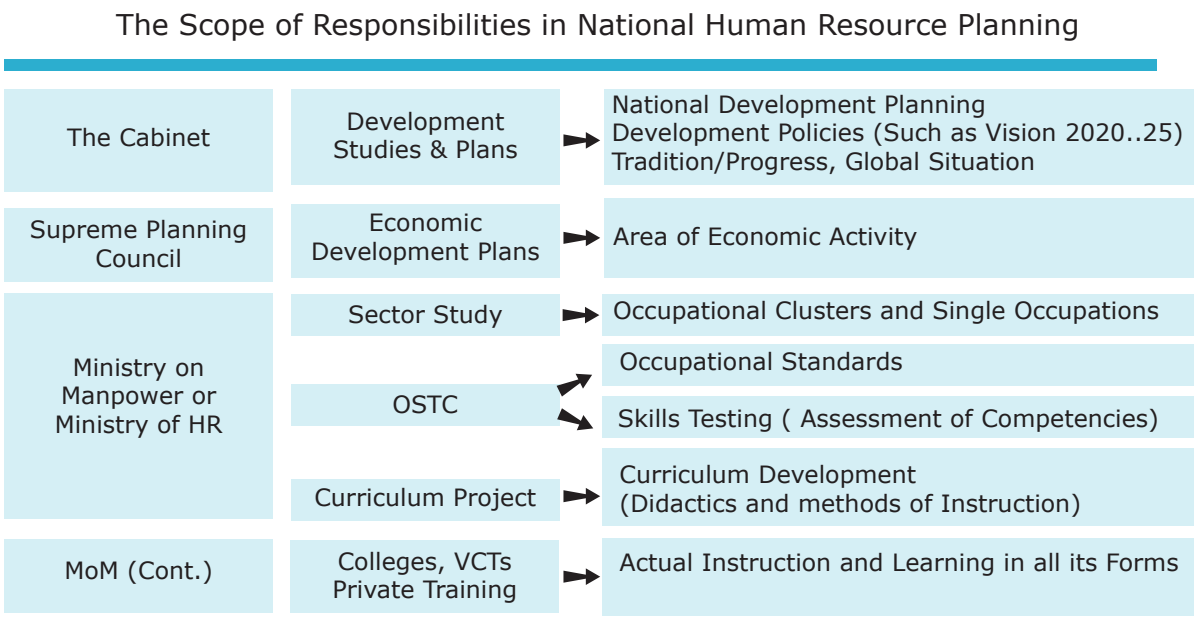
- two learning environments cooperating: the company and TVET colleges;
- three learning environments cooperating: the company, TVET colleges, and specialized training centres;
- the entire training takes place at one learning environment only: in the company or in the training centre.

As an overall partner of cooperation, government units are present. These units or Ministries usually take on the role of monitoring and safeguarding a quality-oriented training process. In other words: the three main partners of cooperation are always:

- training institutes, colleges, universities;
- business/industry sector;
- government units/Ministries.

An example of partners in a country involved in the strategic further development of TVET is shown in Figure 27 below. It sets out the roles and tasks of important actors and could serve as an example for other countries.

Figure 27: Responsibilities of national authorities



Benefits of triangular cooperation

What could be the benefits of cooperation between TVET education and training and industry? Firstly, there are advantages if TVET is focused on the practical requirements of education and training and develops answers for the further enhancement of the quality of TVET activities. Secondly, cooperation between TVET education and training institutions and companies has the advantage of helping to overcome often isolated training in TVET centres. Additionally, cooperation between TVET institutions with national or transnational partners focused on education and training helps to develop comparable frameworks for TVET structures and TVET standards.

When successful TVET is measured, companies play an important role. This means that TVET's success is assessed by whether skilled workers are being trained, those who can meet company' requirements in terms of performance and quality. If this is not the case, companies tend to not hire such graduates and to apply so-called island solutions, i.e. they start their own training only for their own needs. In that case, societal interests only play a marginal role with company interests dominating.

Note for users

Cooperation in a public private partnership has to be well designed.

The overall target has to be the best possible quality development process to qualify participants for industry needs.

In relation to benefits, cooperation at a national level plays an important role, both dually (Company – TVET-center) or triangularly (Company – TVET-centre – Social Partners/ Political/ Research). An important requirement for triangular cooperation is supporting education and training in TVET centres and companies and underpinning it through TVET research. Even in a trial situation, cooperation between companies and TVET is the centre of interest. Research, political and other stakeholders/ social partners support and assist and ensure the highest possible quality of training and education. An extension of cooperation to transnational and international levels is possible. However, such cooperation should, in the first place, be aimed at coordinating heterogeneous systems, for example by discussing standards and qualifications frameworks.

Network service portfolio and business development

A cooperation network defines services to be provided internally among its members and services that could be promoted externally. With the perspective of achieving sustainability and working towards its network objective, a clear service portfolio supports the development of a network business strategy (e.g. think tank model). Potential target groups, service offers, operational and financial processes would need to be specified.

Background

Considerable efforts are necessary in identifying resources. The reason is that, to date, partnership networks have neither a business plan nor a service portfolio for the support of TVET.

On the identification of resources, the following initiatives must be established:

1. Development of a portfolio of offers for the TVET system by individual members, some network members or by the entire network.Offers must be shaped to appeal to TVET institutions as prospective customers.

2. Cooperation with industrial sectors and political representatives and the identification of areas of activity for the improvement of TVET quality. Based on this, pilot projects could be initiated which are funded by public institutions and industry.

Concept structure

A promising approach to a business strategy in close cooperation with companies in selected sectors and political representatives of vocational educational, would be to identify areas of activity based on sectors aimed at an improvement in quality. Customized services could then be developed. This approach can only be successful if the network succeeds in generating areas of activity that are accepted by all partners and industry sectors and shape these activities with potential funding partners who deem this to be a necessary goal. They should be prepared to take over the funding of the coordinated work.

3.5 Financing cooperation between TVET centres and the business sector

A partnership between industry and TVET centres needs resources in several fields. Most important is the availability of staff able to organize cooperation and learning environments for the students which allow them to work and learn within work-processes.

Financing is actually a cross-over topic and relevant for all forms of cooperation

- Dual/cooperative TVET is usually financed by the state and the business sector,
- All involvement is an expense to a company and needs to be compensated for by benefits,
- It is essential to deal with the financial side of TVET when cooperating in all areas,
- Most companies fear poaching: some companies invest but others get the benefit,
- A cost-benefit analysis has to be conducted to convince companies.

Funding and cost efficiency within the partnership

The funding of partnerships and networks, first and foremost, needs a financial framework which should be shaped in a way that:

- partnerships can be financed, provided they aim at cooperating in a concrete and contents-related manner (e.g. setting up joint study courses or joint work on research projects);
- networks beyond partnerships should have the option to exchange contents and various leading questions.

The central question is who is going to safeguard the funding? There are two possible ways:

1. Funding by different funding and political institutions by choice of themes, formats and participants who are interested in being potential investors.

2. Funding by sector committees. This will be possible with research themes which could be of interest to the committees.

The efficiency of funding/costs is hardly discernible as the impact of networking in the long-term and in the short-term cannot be determined.

Funding at a national, regional or international level

At a national or regional level, the practice of funding or financing should be clarified within the partnerships, supported by governments. As for international funding, there is a variety of available facets to be considered, e.g.

a) *Cooperation with Global Players.* In this case, direct clarification of the funding between the suitable partners;

b) *Cooperation in economic circles in certain regions*. In this case, trans-sectoral clarification of funding should be envisaged with the members of the economic circles.

c) *Cooperation with international organizations*. There are a multitude of possible ways of funding which should be clarified individually.

Financing concrete regional activities

Financing concrete regional activities need to first identify opportunities for cooperation.

Cost-Benefit Analysis [23] *– Figure 28:*

Four main factors support participation in TVET:

- earnings from the learner's productive work;
- avoidance of recruitment and induction costs in the event of the learner's continued employment;
- reduced drop-out risks and higher employee retention with subsequent employment as a result of screening undertaken during the training,
- higher productivity from trained skilled workers.

Their impact depends on the type and scope of the company's engagement.

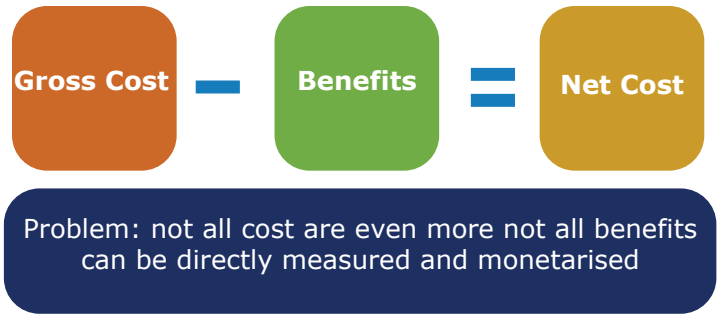
There are several critical aspects within the calculation of the cost-benefit-ratio because of heterogeneous parameters:

- costs and benefits can vary widely, depending on the cooperation system, country, sector/ occupation;
- ways of organization inside the company (companies can influence cost-benefit deeply);
- some cooperation has very high costs (e.g. mechatronic apprenticeship), some are paid off during the training;
- training costs must be set in relation to the alternatives (e.g. recruitment of staff in the labor market, retraining of new staff); and
- higher taxes and fees, depending on TVET systems/laws.

So called non-measurable factors play an important role in the cost-benefit-ratio, such as:

- training closely matches employer needs (demand-driven);
- the performance of skilled workers is remarkably higher (minimum 2 %),
- some competencies (e. g. tacit knowledge) can only be attained through forms of cooperative training;
- young people grow into a company and identify highly with its work culture;
- avoiding costs due to the lower risk of inappropriate placement and fluctuations;
- higher motivation and better socialization in work cultures;
- reduction of the risk of drop-outs and higher employee retention with subsequent employment as a result of screening during the training,
- avoidance of costs due to shortfalls when demand for skilled workers cannot be met (production bottlenecks; rejection of contracts),
- training can improve the company's public image which leads to higher acceptance of its products,

Figure 28: Cost-Benefit-Formula [23]



(cf. Grosch 2019)

Creating high benefit-cost-ratio

Companies are about making money, so the financial aspect is always the core aspect. To make cooperation financially attractive, the support of umbrella organizations or the government is needed. If this support does not exist, it is very difficult for TVET institutions to develop sustainable cooperation with the business sector. For example, with poaching, the training company can try to keep qualified employees through attractive salaries, development and working conditions, but cannot completely prevent poaching.

There are several ways and system to tackle this issue:

- levy(grant) systems to finance TVET, usually combined with a grant system;
- tax exemptions;
- training funds; and
- labour law.

Levy/Grant System

- *specialized fees or taxes, which companies are required to pay in some countries to finance TVET;*
- *can be nationwide or sector-specific;*
- *the amount is usually a defined percentage of company wages or turnover.*

Levies are put into a training fund and combined with a grant system to:

- refund training costs, e.g. 50% of the cost will be reimbursed;
- redistribute costs:
  - ◇ Channel money from those companies which do not participate actively in TVET to those which do;
  - ◇ Provides extra incentives for companies to train more people than they need for their own company.
  - ◇ if they are active in TVET, companies can either be exempted partially or completely or partially from the levy

This evens out the disadvantages of poaching. The refunding of training costs in these systems is not limited to the amount of money the company paid in levies in the first place but depends on actual training costs.

Tax Exemptions

Tax exemptions can provide an alternative incentive for companies to become more engaged in TVET by:

- either providing tax credits to those companies which can prove above average investments in TVET; or
- allowing for the deduction of training costs (total or certain percentage) from company income.

Problems:

- more suited for countries with formalized economies,
- tax exemptions are only interesting for those companies, which pay a substantial amount of taxes, and it does not provide any incentive or benefit for the informal economy;
- only pays off in the long run, by making the TVET system more efficient, while costing money through reduced tax revenues in the short run;
- most suitable for high- and middle-income countries (e.g. Thailand, 200%).

Examples of Costs-Benefits of TVET training for Companies [23]

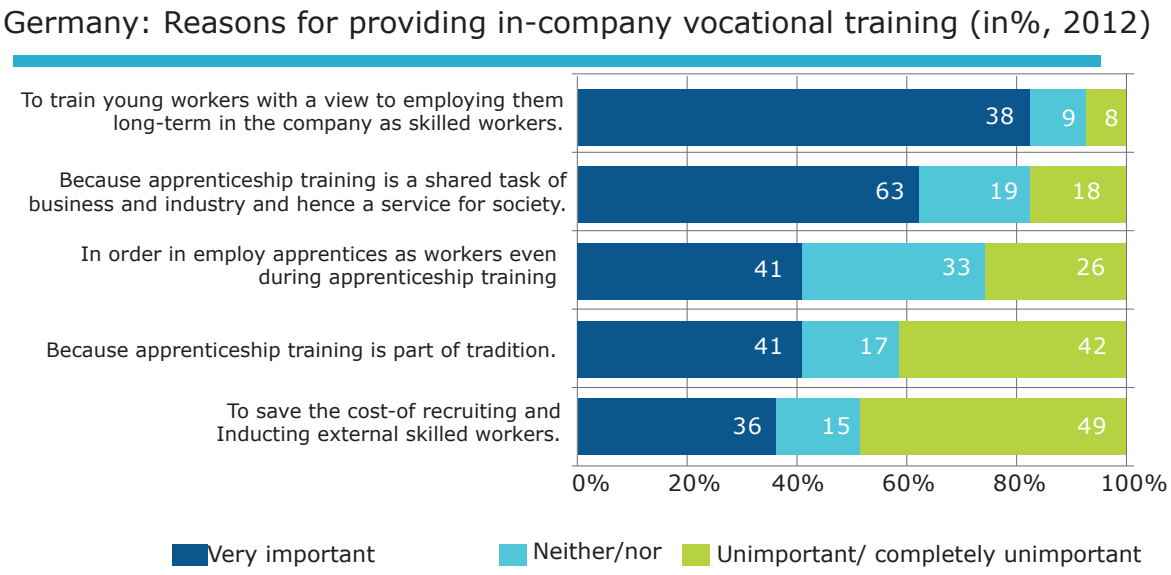
The costs of training trainees in a company can be explained by using some examples from other countries. Doing the cost-benefit calculation is not a simple task because of the very specific role of trainees in a company. Some of the tasks cannot be calculated because they are not measurable (e.g. better performance of skilled workers, training which improves the company's public image, training matching employer needs, higher motivation). Others are not part of productive work. A characterization of this work is described below:

The character of the activities of a trainee:

- Non-productive activities: Learning (e.g. doing exercises, simulations, instruction) or time spent in transport visiting a client, bring indirect benefits through improved skills and higher trainee productivity;
- Productive skilled activities: Tasks that are normally performed by a skilled worker. Includes activities designed to support learning (e.g. trainee practicing a specific technique) and activities that do not involve learning (performing skilled tasks the trainee already has mastered)
- Productive unskilled activities: Tasks that can be done by an unskilled worker (e.g. cleaning a workshop). Does not develop technical skills but may develop soft skills like the ability to work in a team or time management.

Some benefits of TVET training in companies: see Figure 29.

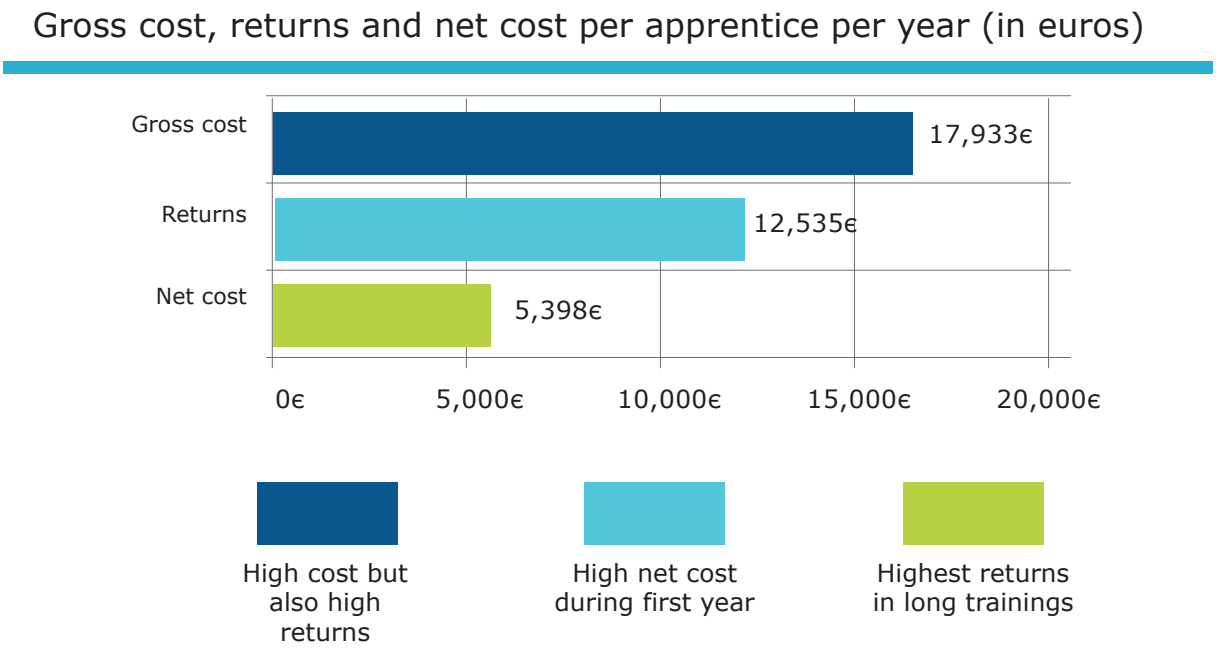
Figure 29: Advantages of In-Company Training [22]



Source: Apprenticeship training in Germany remains investment-focused - results of BIBB Cost-Benefit Survey 2012/13, Anika Jansen | Harald Pfeifer | Gudrun Schönfeld | Felix Wenzelmann, BIBB Report Issue 1/2015, https://www.bibb.de/en/25852.php

In markets where established TVET training Cost-Benefit-Calculations exists (e.g. Germany), the calculations vary widely depending on the cooperation system and the engagement of the companies and their intern organization models. A factor which influences the costs is the type of occupation under training. Training for a mechatronic is much more expensive than training a baker in a smaller sized company. Training costs always have to be set in relation to alternatives such as recruitment of staff in the labour market, training and retraining of new staff, recruitment efforts etc. Figure 30offers an overview of the costs, returns and net costs of training per year in a 3 ½ year training program within the dual system in Germany.

Figure 30: Net costs of training within a 3 ½ year training in the dual system [23]



Parameters which influence the costs and benefits of TVET training in companies are manifold. The most important are:

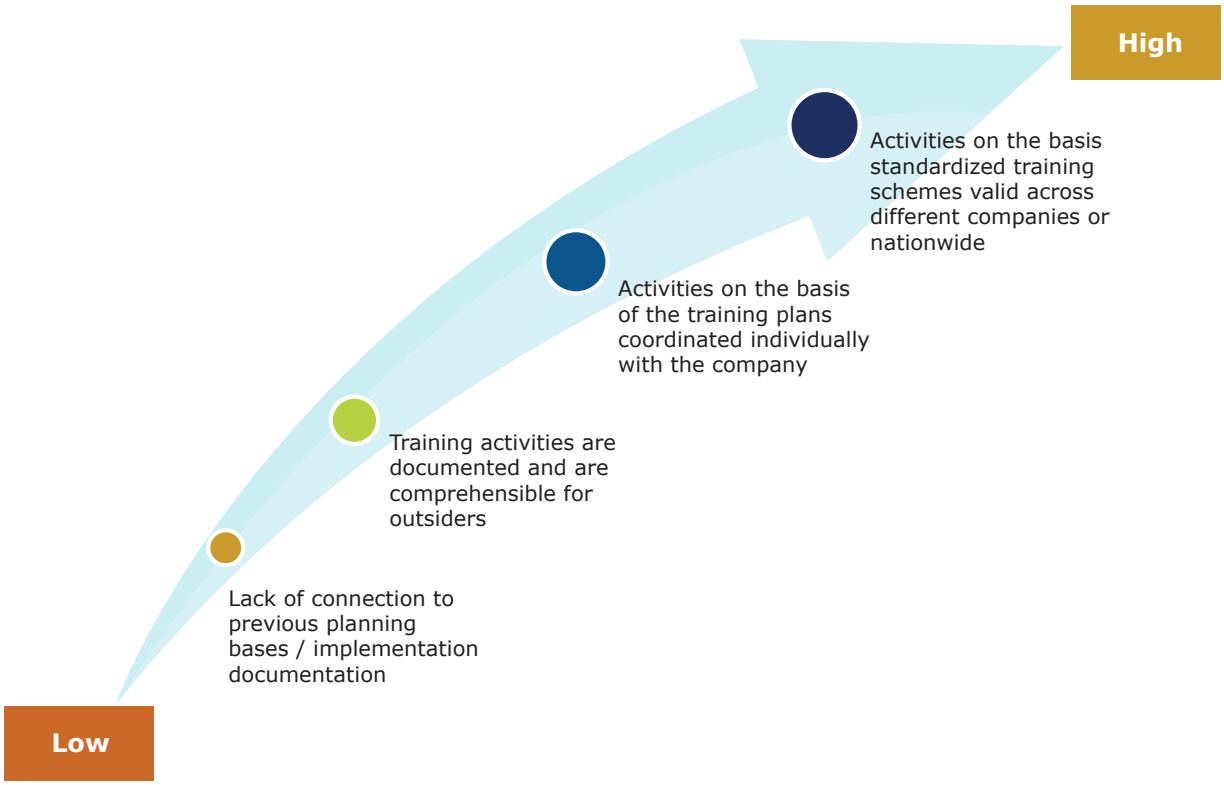
- Personnel cost: costs of trainees and trainers (full-time trainer, part-time trainer, external trainer);
- training allowance;
- social benefits;
- equipment and facilities, workplace (tools, machinery, materials), training workshops;
- in-company lessons;
- other costs;
- training documents/media;
- professional and protective clothing;
- administration;
- external lessons; and
- examination fees.

Depending on the organization of TVET training in companies, the cost of the different parameters will differ fundamentally from company to company. In other words, the overall calculations inform the costs and benefits in a more general way. If a specific company would like to know about its costs, the calculation must be done for that company to find figures on savings.

Important steps to go for cooperation

The 20 key activities and questions in Q-tool 42 are a reference system for implementing linkages between TVET centres and business sectors. They offer an overall orientation on how to follow an implementation process. Each step in the implementation process depends greatly on the level of commitment of the company, as shown in Figure 31. For each step of the implementation process, the answers to the 20 questions and activities will be different. It is a requirement to answers the questions and to do the activities following each different step in the implementation scale.

Figure 31: Scale of company placed implementation of TVET [22]



Q-tool 42: Important activities for cooperation

Item		Check
Preparation Stage: Creation and Development of Cooperation		
1.	Identification of areas for cooperation development of instruments for analyzing	
2.	Identification of relevant learning environments for cooperation	
3.	How to prepare learning environments for cooperation	
4.	Concepts of teaching and training teaching staff to get prepared for cooperation	
5.	Concepts and implementation strategies for "theory related" and "practice related" TVET training	

Item		Check
Development Stage: Institutional Level and Governance		
6.	Concepts of implementation of cooperative programs in TVET centres and companies	
7.	Implementation of a cooperative approach and program	
8.	Clarification of the roles of each partner within the cooperation	
9.	Preparation of demand oriented occupational profiles	
10.	Preparation of curricula for a cooperative program	
Identification Stage: Company visits		
11.	Mutual visits of TVET centre and company for preparation of details of a cooperation	
12.	Distribution of tasks based on detailed analyses of the capabilities of the partners in relation to the training requirements	
Certification Stage: Examination and Certification		
13.	Development of concepts of implementation of exams and certification within the partnership	
14.	Implementation of the concepts for use in practice	
Financing Stage: Financing		
15.	Development of concepts of financing TVET training within a partnership	
16.	Implementation of the concept for use in practice	
Evaluation Stage: Evaluation		
17.	Program evaluation in companies and in TVET centers	
18.	Use of evaluation outcome for quality enhancement	
Quality Stage: Quality Assurance		
19.	Implementation of QA and QD approaches in TVET centers,	
20.	Development of quality in the context of training etc.	

4 Key Points

Important questions should be answered before a cooperation

Summary & Questions		Check
Summary		
1.	As a basis for a linkage of business/industry and TVET centres a profound understanding of the cultural background underlying work and training has to be developed.	
2.	TVET training has to be designed in a way that enables trainees to cope with these changing requirements in business and industry. To ensure TVET QUALITY is highly relevant and requires work-based learning. It has to match with the needs of the labour market. This requires "Linking of TVET with the Business Sector".	
3.	Linking TVET with the business sector means establishing close cooperation between TVET centres, companies and other business fields.	
4.	Important: partners have to be actively engaged in cooperation with the business sector (cooperation between training institutes and companies/business).	
5.	Quality indicators and standards have to be designed for the cooperation of the different partners.	
6.	The starting points for cooperation are standards of curricula, concepts for company-based training phases, of teaching and training and teaching staff for "theory related" TVET stages.	
7.	Cooperation needs guidance in program implementation in TVET centres, in supervision of the implementation of exams and certification and in supervision in the concept development and ensuring financing.	
Questions		
8.	What are indicators, standards and curricula which have to be developed for the cooperation?	
9.	Is a profound understanding of the cultural background underlying work and training available within the partnership?	
10.	How the cooperation between industry/business has to be established to be successful?	
11.	How the cooperation between industry/business has to be organised for a successful training?	
12.	How you might ensure the participation of all teachers/trainers on the shaping process of the cooperation?	

Summary & Questions		Check
13.	How TVET personnel has to be qualified to be able to support a cooperation?	
14.	Which success factors should be defined for supporting the cooperation?	
To Do		
15.	Ensure the preparation of all partners for a successful cooperation between TVET and business/industry.	
16.	Design indicators, standards and curricula for a certain quality of cooperation activities between TVET and business/industry.	
17.	Ensure the labour market perspectives in a cooperation of TVET education and business cooperation.	
18.	Ensure work-process access and theoretical reflection within a partnership of TVET centres and companies.	
19	Prepare everything for program evaluation in companies and in TVET centres has to be prepared.	
20.	Implementation of quality approaches in TVET centres and companies to support cooperation.	

5. Checklist

Please use the "Check List" together with your partner to reflect on the quality of the training and training material. Please determine the strengths and possible needs for action and decide at which points you would propose improvements.

Standards and Indicators Check List

Meaning of the scale:

++ everything is fine;
+ everything is satisfactory
-- action is needed for improvement;
- improvement is proposed

	--	-	+	++
Creation and Development of Cooperation				
Identification of areas of cooperation: instruments for analyzing it				
Clear process of identification of relevant learning environments of cooperation				
Convincing concepts of preparation of learning environments for cooperation				
Sophisticated concepts of teaching and training teaching staff to get prepared for cooperation exist				

	--	-	+	++
Institutional Level and Governance				
Concepts for implementation of cooperative programs in TVET centers and companies are developed				
An implementation process of a cooperative approach and program was initiated				
The roles of each partner within a cooperation were clatified				
Demand oriented occupational profiles were prepared				
Curricula for a cooperative programme were prepared				
Company visits				
Visits of TVET centre and company for preparation of details of a cooperation were organized				
Tasks based on detailed analyses of the capabilities of the partners in relation to the training requirements were identified				
Examination and Certification				
Concepts of implementation of exams and certification within the partnership were developed				
Implementation of the concepts for use in practice				
Financing				
Development of concepts of financing TVET training within a partnership				
Implementation of the concept for financing for use in practice				
Evaluation				
Program evaluation in companies and in TVET centers				
Use of evaluation outcome for quality enhancement				
Quality Assurance				
Implementation of QA and QD approaches in TVET centers				
Support of quality in the context of training etc.				

References

[1] AQAN (2013): Asean Quality Assurance Network: Asean Quality Assurance Framework (AQAF).

[2] Guellali, C. (2017): Quality assurance of company-based training in the dual system in Germany. BIBB: Bonn.

[3] Batemann, A.; Borhene, Ch.; Coles, M. et al. (2016): Discussion paper on quality assurance of qualifications in technical and vocational education and training. UNESCO: Paris.

[4] CEDEFOP (2011). Glossary: Quality in education and training. Luxembourg, Office for Official Publications of the European Community: Luxemborg.

[5] AQRF (2017): ASEAN Qualifications Reference Framework. https://asean.org/asean-economic-community/sectoral-bodies-under-the-purview-of-aem/services/asean-qualifications-reference-framework/ (last accssed on July 28, 2019).

[6] CEDEFOP (2015): Handbock for TVET providers. Supporting internal quality management and quality culture. Cedefop, series 99: Luxembourg.

[7] Baetmann, A. et al. (2012): Concept Paper – EAS ASIA SUMMIT Vocational Education and Training Quality Assurance Framework. University of Melborne: Melborne.

[8] Gaylor, C. et al. (2015): Quality of In-Company Vocational Education and Training. Compendium. BIBB: Bonn.

[9] Girmes, R. (2001): Dimensionen einer neuen Lern- und Lehrkultur: Eine Klärung, ein Verfahrenshinweis, acht Thesen und eine Schlussbemerkung – oder: Ermutigung etwas aufs Spiel zu setzen. In: Forum Bildung (Ed.): Neue Lern- und Lehrkultur. Vorläufige Empfehlungen und Expertenbericht. Materialien des Forum Bildung, Band 10: Bonn, p 103-116.

[10] Spöttl, G.; Becker, M.; Dreher, R. (2004): Lehrerbildung und Schulentwicklung in neuer Balance. Donat-Verlag: Bremen

[11] Rosenstiel, v. L. (2001): Lernkultur Kompetenzentwicklung als Herausforderung für die Wissenschaft. In: Arbeitsgemeinschaft betriebliche Weiterbildungsforschung e.V., Projekt Qualifikations-Entwicklungs-Management (Ed.): Arbeiten und Lernen. Lernkultur Kompetenzentwicklung und Innovative Arbeitsgestaltung. Referate auf dem 3. Zukunftsforum Berlin 2001.QUEM-Report, Heft 68, Berlin: p. 27-38.

[12] Bateman, A.; Cools, M. (2017): Towards Quality Assurance of Technical and Vocational Education and Training. UNESCO: Bangkok Office.

[13] CEDEFOP. (2009). Accreditation and Quality Assurance in Vocational Education and Training. Luxembourg: Publications Office of the European Union.

[14] UNESCO (2015): Kuala Lumpur Declaration: Quality Education and Skills Development for a Sustainable Future. Outcome of the Asia-Pacific Conference on Education and Training. Kuala Lumpur.

[15] Graune, U. (2016): Tool-KiT for Teaching and learning MeThods in TVeT. Magdeburg: GIZ/Academy for International Cooperation Human Capacity Development (HCD) for Technical Vocational Education and Training UNEVOC Centre Magdeburg.

[16] Cedefop (2017). The changing nature and role of vocational education and training Europe. Volume 1: conceptions of vocational education and training: an analytical framework. Luxembourg: Publications Office. Cedefop research paper; No 63. http://dx.doi.org/10.2801/532605

[18] Eraut, Michael. (2007). Learning from other people in the workplace. In: Oxford Review of Education 33(4): pp. 403-422.

[19] Euler, Dietrich. (2017). Engaging the Business Sector in Vocational Education and Training (TVE) – Part 1: Study.

[20] GIZ. (2017). Down to earth: A practitioner's guideline to work with business and industry in TVET.

[21] Grosch, Michael (2019a): Linking TVET with the Business Sector. Key Elements to be Addressed for In-Service Training. International Consulting for Training and Education. Bangkok.

[22] Grosch, Michael (2019b): Models of TVET Institution cooperation. Module 05: Industry and TVET institutions linkages. International Consulting for Training and Education. Bangkok.

[23] Grosch, Michael (2019c): Cost and benefit for the business sector to engage in TVET cooperation. Module 05: Industry and TVET institutions linkages. International Consulting for Training and Education. Bangkok.

[24] GIZ. (2015). Aufbau und Funktion nationaler Berufsbildungsagenturen. Bonn, Eschborn: GIZ.

Annex

Annex I: Enhancing Quality Culture”

Proposed training for staff members of TVET centres towards implementation of team concepts

This chapter proposes training. It is advisable to train management and teaching staff in this subject (quality culture and team approach) to be sure that the TVET staff has the competences to implement quality culture in a proper way. A training in this context has to be oriented close to the needs of a specific training centre and their staff.

One of the main questions whether there is a need to re-organize a TVET centre structure towards team organisation and what are the main advantages for the staff members and participants. One of the main answers for that is, that team concepts help to intensify the cooperation of the teaching staff and to optimize an organizational process with a closer student orientation as before. Team cooperation helps to manage the planning and implementation of complex teaching processes like work with projects or self-reliant learning.

In order to successfully implement a teaching model, the teaching staff and the management have to be qualified for these tasks and the different form of work organization which gets in process within a team conception. The descriptions outlined demonstrate the necessary changes towards a team concept. Without preparation of the staff team concepts will not succeed. A rough planning for a Multipliers’ Training is presented in the table below.

Rough structure of a multipliers’ qualification course about a team concept/team work:

Time h	Phase	LWA	Method	Media Remarks
6	Informing	All LWA	**Activity 1** Role of mission and vision (explanation) Explain: Objectives and learning outcomes of the session, Explanation: Importance of team concepts in the context of learning and cooperation **Activity 2** Ask question: Why a team concept? What has to be changed because of team concepts? The structures of team concepts and their impact to TVET centres.	Presentation Discussion / Questions Flip Charts Manuals Groupwork Flip Charts Brainstorming Presentation
6	Informing	LWA 01, Module 1 and LWA 01, Module 2	**Activity 3** How the organizational structure of a centre organization has to be changed for implementing a team structure? How does the different hierarchy look like? What is the new role of the management? **Activity 4** How to make the staff ready for a team concept?	Brainwriting session Group work Brainstorming

Time h	Phase	LWA	Method	Media Remarks
8	Planning	All LWAs LWA 01 and 03 of Module 1	**Activity 5** Preparation of the TVET centre to work in team structures: Clarification of all the questions under (I) – see below! Discussion of the outcome of the clarification process – see questions under (I) – with the whole staff of the centre	Presentation Group work Discussion
8		LWA 01, Module 1 and LWA 01, 02, 03, 04 Module 2	**Activity 6** Define an implementation structure of a team concept for your TVET centre as shown under (II) below. Tasks: after clarification prepare each step of an implementation by following the frame of the 4 implementation phases.	Presentation Small Groups (3 to 4) of participants
16	Execution	Standards, Indicators, criterion LWA 2, 3, 4 of module 1 and LWA 1, 2, 3, 4, 5 of module 2	**Activity 7** Work/discussion on standards and indicators and the QD concept Participants explain their solutions **Activity 8** How to bring quality development into the process? Steps to go! Work on examples related to the own country: Participants develop a QD model for quality areas relevant for teaching and learning. Final discussion of the outcome: presentations **Activity 9** Revisit Learning outcome and output Ask group to perform REST • Reflection • Expand Ideas • Stimulate Thinking	Participants discuss groups the questions (12 Questions) Questions/ Answers Group presentation Participants reflected on their learning
4	Control	All LWA	**Activity 10** Discussion of the developed "models" of quality development, design of criteria for rating, Presentation of the models by the groups Rating of the models by developed criteria.	Groupwork
2	Evaluation		Evaluation by using a checklist	

Example: Self-reliant learning – a short introduction only

Background information: Tendencies in approaches of learning

The change of professional practice and the involved increased demand to provide both higher formal qualifications and systematic development of skills and capabilities requires a new way of thinking. Active structured teaching and learning methods for the benefit of participants have to be put in the centre. As a consequence, the following tendencies when using teaching and learning methods of vocational education and training may be relevant:

- increasing importance of activating methods,
- change towards more self-organized/ self-reliant learning
- change towards process and development-oriented methods
- change towards rather comprehensive methods.

A teacher's repertoire of methods consists of a set of action patterns and stage-managing techniques that the teacher can recall and approve routinely, which is why he or she uses it again and again.

In order to guarantee this, the teacher continuously needs the opportunity to get to know new approaches and methods and try them out on his/her own. Therefore, sufficient further training and exchange of experiences for staff for vocational education and training is to be guaranteed.

Against this background, the aim of vocational education and training is the shaping of an integral vocational competency. In addition, for the purpose of the adaptation to changing requirements, the readiness and capability for lifelong learning has to be developed.

The far-reaching changes of professional practice result in the fact that also for simple tasks in production, manufacturing or assembly higher requirements emerge that cannot be covered by higher formal qualification. Therefore, there is a high demand for the development of systematic skills also in semiskilled and unskilled workers in order to enable them to better use their room for manoeuvre and to actively shape their areas of activity. The acquisition of skills may, however, only be influenced by shaping the learning environment. Methods in vocational education and training therefore have to influence learners by arranging professional targets and content relevant for learning and by creating an atmosphere favourable for learning. The principles below shall apply in this regard:

- Action competence (or: vocational competency) is acquired by learning by
- means of work-processes typical for the profession;
- action competence can only be acquired by acting;
- professional skills are learned by acting as is typical for the profession.

Modern approaches and methods should therefore enable or simulate real work-processes. The acquisition of professional work experience is to be connected with the acquisition of theoretical knowledge about the profession.

Against this background, the scope of methods in vocational education and training has significantly changed and increased over recent years. In vocational education and training and further training, methods have been developed that promote the independence, the planning capability, systemic thinking and problem-solving behaviour of the learners. Specific combinations of different methods are ap plied today in order to form professional, methodological, social and human skills in the learners. Self-reliant learning is one of the innovative approaches and combines activating methods and self-organized learning.

The following table describes the specific teaching and learning tendencies [15].

Specific teaching and learning tendencies

	Characteristics	Promotion of	Examples
Activating methods	• Wider offer of communication and possible courses of action for the learner • Taking up practical situations and problems drawn from life • Situation-, problem- and decision-oriented vocational education and training • Presentation of a problem-solving process	• Team, cooperation and social skills • Exchange of experiences and opinions • Ability to transfer • Ability to solve tasks more effectively	• business games • case method • role play • exploration • guidance text
Self-organized learning	• In companies, tendency • towards decentralization and individualization of work processes • More opportunities for active shaping increase motivation and productivity • Change of values towards increased interest in responsibility	• Ability to solve problems independently • Acquire knowledge actively • Identify with tasks, motivation, acceptance and active shaping • Lifelong learning	• study independently • have a commercial student run company • have a junior company • do group work • use project method
Process- and development oriented methods	• From instructing, teaching-oriented educational • work towards developing, problem-oriented education- al work • Inclusion of learners into real or simulated change processes	• Use communication • skills and professional competence • Use problem solving dialogues • Make consultations and presentations	• use presentation method • use exploration • use brainstorming
Comprehensive methods	• Combining the teaching of professional, theoretical knowledge and of professional work experience • Solving complex problems of professional practice	• Develop of abilities, skills and behaviours	• use a mix of methods • use projects

The core of self-reliant learning (see example below) is the use of student-centred methods in action-oriented activities. It can be demonstrated in connection with the specific aspects of self-reliant lessons.

Key elements of self-reliant learning

Self-reliant teaching is goal-oriented
- Student-centred methods help to establish objectives.
- Student-centred methods gradually lead towards an established goal without losing sight of it at any point.

Self-reliant teaching is object-related
- By means of student-centred methods objects of action can be selected.
- By means of student-centred methods learning processes can be demonstrated.

Self-reliant teaching is structured by actions
- Student-centred methods supplement the phases of self-reliant lessons.

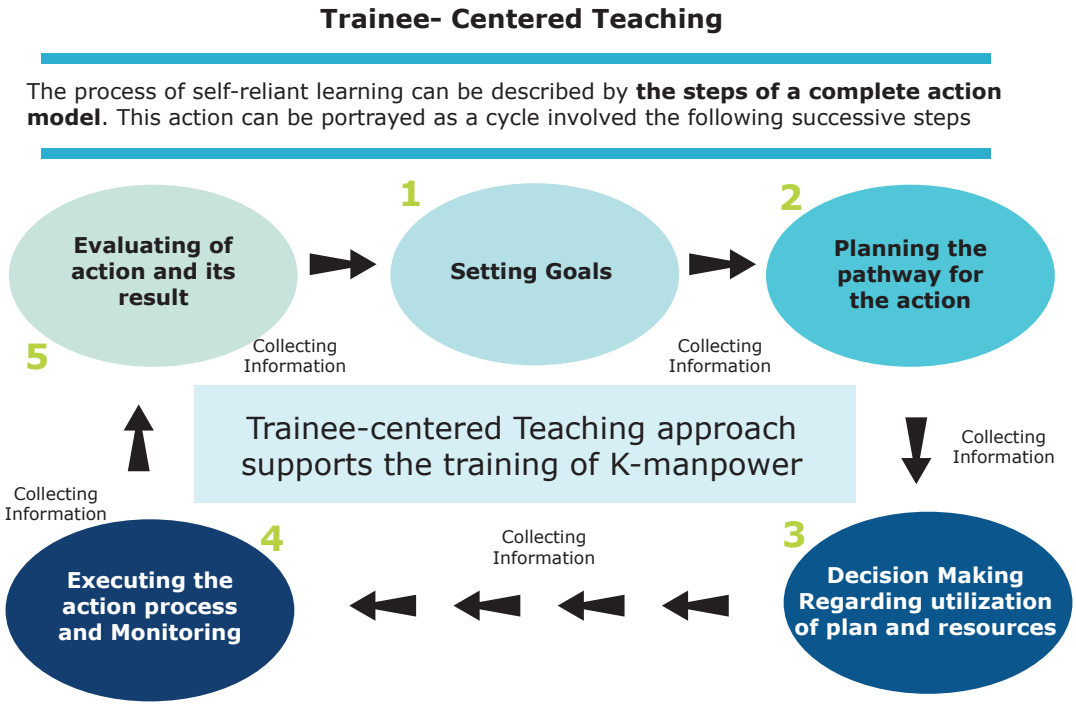
Self-reliant teaching is systemic
- Student-centred methods promote systematic thinking.
- Student-centred methods do not limit aspects of content.
- Networks can be graphically depicted.
- Student-centred methods are active and dynamic.

Self-reliant teaching is integrated
- Student-centred methods do not exclude other work techniques or methods; they supplement them, thereby they support an integral choice of methods.
- Student-centred methods facilitate diverse, results-oriented interactions.

Self-reliant teaching is subject-related
- Student-centred methods highlight things that are significant for participants.
- Student-centred methods promote student activity and allow participants' experiences to be integrated into the instruction.
- Student-centred methods encourage participants to think about their skills and knowledge.

The participants plan their work and the carrying out of their work independently but are partly supported by a planning raster or other aids as shown in the circle of self-reliant learning below.

The circle of self-reliant learning



Example of self-reliant learning – teaching and learning

Example: Work-process requirements are linked to the action cycle of self-reliant learning.

TASK for self-reliant learning: Repair of a gearbox.

Assignment ("open, innovative").

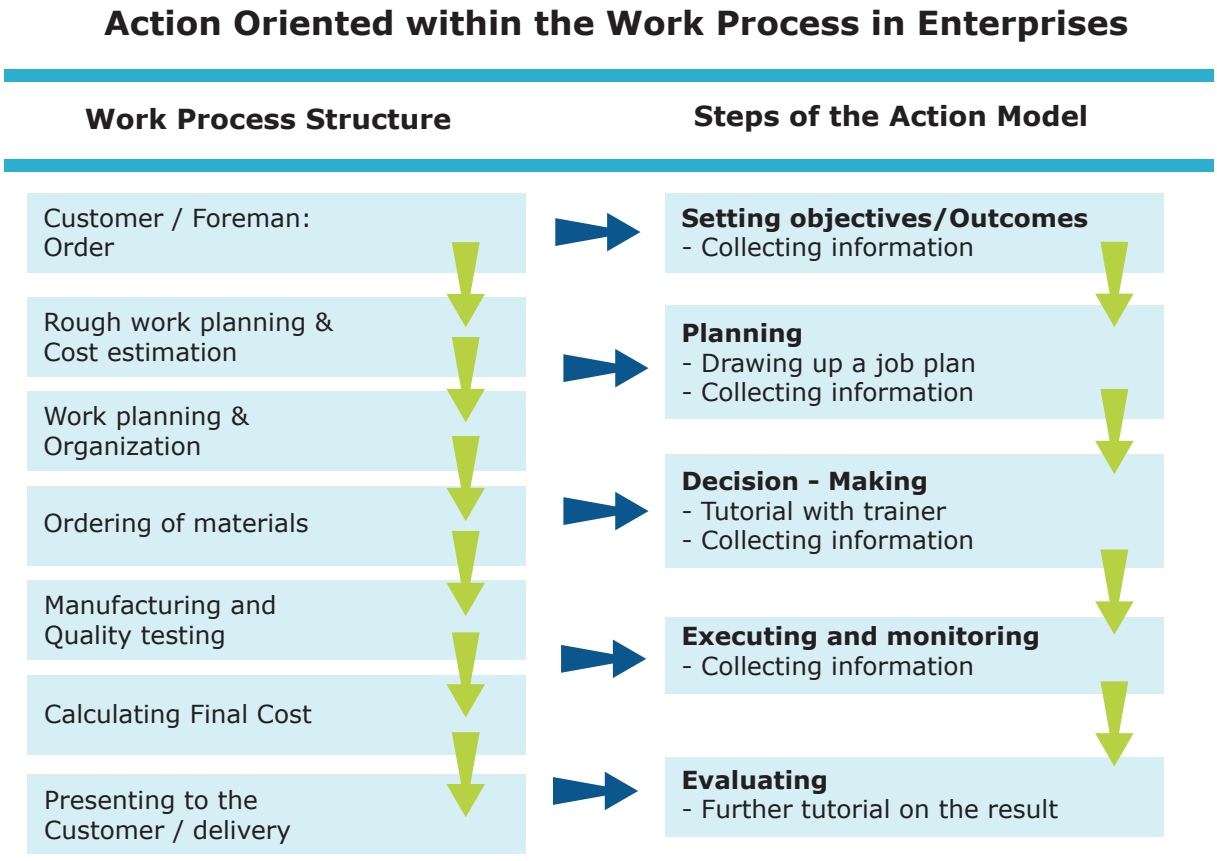
A gear box of a motor vehicle has to be removed in a car maintenance workshop. Workers use different devices to facilitate their work. Analyze the devices and identify whether by the proposed/ correct devices are in use.

Duration: 1 day

Learn and work organization: team of three trainees

Semester: 3

Action orientation within the work process in enterprises



Learning and working aids

The following questions and advice will guide you in completing this assignment.

Informing/analyzing

1. Analyze the manual via internet and identify the correct devices.
2. Ask workers what would facilitate this work.
3. Study several devices given. Use internet as well.
4. Planning and decision-making
5. Develop the best solutions for repair in your team.
6. Discuss decision-making criteria and the most appropriate (workers' needs, safety precautions) solution.
7. Establish a plan and timetable for the main steps that have to be done.
8. Establish the monitoring and evaluation criteria in a workshop moderated by the team leader.
9. Present your your plan/timetable to the instructor.

Execution

Monitoring criteria should be taken into account at all stages of the planned work process.

Evaluation

1. Write an assignment report and prepare a presentation in collabouration with your English teacher.

2. Present your results:
   - Experiences from your team learning and working of your team.
   - The functionality and quality of the device and the consideration of workers' demands.
   - You have been allocated about 15 minutes for your presentation.

Annex III: Shaping Oriented Quality Indicators and Standards for Quality Development: Guideline

Proposed training for staff members of TVET centres towards implementation of team concepts

This chapter proposes training. It is advisable to train management and teaching staff in the design of "Shaping Oriented Quality Indicators and Standards for Quality Development" to be sure that the TVET staff has the competences to work and implement with standards and indicators in a proper way. A training in this context has to be oriented close to the needs of a specific training centre and their staff.

One of the main requirements for TVET is the definition of standards which are oriented towards a quality-based learning and teaching process. This type of standards has to ensure a certain dynamic because of the continuous changes in the world of work. How this type of standards will be defined is explained in the paper. The advantages and disadvantages and the concept of the standards will also be discussed.

Standards and their indicators are helpful for the planning and implementation of normal and complex learning and teaching processes like work with projects or self-reliant learning.

In order to successfull implement a teaching model based on standards, the teaching staff and the management have to be qualified for the tasks of defining indicators and related standards and how to implement them within a learning and teaching process. Without preparation of the teaching staff concepts will not succeed. A rough planning for a multipliers' training is presented in the table below.

Rough structure of a multipliers' qualification course about a team concept/team work:

Time h	Phase	LWA	Method	Media Remarks
6	Informing	All LWA	**Activity 1** Design of a Quality Development Framework (QDF) and the role of indicators and standards Explain: Advantage of QDF Explanation: Role of indicators and standards **Activity 2** Ask question: Why a QDF? What about indicators and standards? The structures of QDF and the impact of standards.	Presentation Discussion / Questions Flip Charts Manuals Groupwork Flip Charts Brainstorming Presentation
6	Informing	LWA 01, Module 1 and LWA 01 and 02, Module 2	**Activity 3** How "quality areas" have to be selected? How indicators and quality areas have to be defined? How should be differentiated between standards and indicators? **Activity 4** Design if standards and indicators for defined "quality areas"?	Opinions and recommendations of participants Group work Brainstorming

Time h	Phase	LWA	Method	Media Remarks
8	Planning Execution	All LWAs LWA 01 and 03 of Module 1	Activity 5 Preparation of the TVET centre to work standards: Clarification of all the questions and modifications of traditional curricula Discussion of the outcome of the clarification process with the whole staff of the centre	Presentation Group work Discussion
8		LWA 01, Module 1 and LWA 01, 02, 03, 04, 05 Module 2	**Activity 6** Define an implementation process of indicators and standards for your TVET centre. **Activity 7** Discuss the implementation phases with the staff and management. Decide on changes of the curricula and teaching processes.	Presentation Small Groups of participants Questions/Answers
4	Control	All LWA	**Activity 8** Preparation of the concrete implementation steps	Groupwork
2	Evaluation		Evaluation by using a checklist	

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

RECOTVET Programme
6th floor, Hanoi Towers
49 Hai Ba Trung Street
Hanoi, Viet Nam

Telephone: +84 (0) 24 3934 4951
Fax: +84 (0) 24 3934 4950
Email: ingo.imhoff@giz.de
Website: www.giz.de