

Quality Assurance in the context of National Qualifications Framework in Pakistan

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I **Abbreviations**

APACC	Accreditation and Certification Commission
CBT	Competency Based Training
CEDEFOP	European Centre for the Development of Vocational Training.
CPSC	Colombo Plan Staff College
CQAF	Common Quality Assurance Framework
EFQM	EFQM Model of Excellence
EU	European Union
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
KAIZEN	Japanese term for "improvement" or "change for the better"
MBNQA	Malcolm Baldrige National Quality Award
MOA	Memorandum of Agreement
NAVTEC	National Vocational and Technical Education Commission
NAVTTTC	National Vocational and Technical Training Commission
NQF	National Qualifications Framework
NQQAF	National Qualification and Quality Assurance Framework
NVQ	National Vocational Qualifications
QA	Quality Assurance
QM	Quality Management
SA	Self-assessment
SAR	Self–assessment Report
TVET	Technical Vocational Education & Training

II Executive Summary

The document is to provide substantial information regarding TVET quality development approaches and experiences made in the European Union (EU) and some Asian countries, with relevance for the TVET quality debate in Pakistan. Furthermore, the report reflects on quality issues in the context of the National Qualification Framework (NQF) in Pakistan and demonstrates practicable routes for implementation of quality assurance concepts within the scope of NQF in Pakistan.

The interest in the quality of, and improvements to, the technical and vocational education and training (TVET) systems has increased progressively in recent years in most of the states within the EU and in other countries worldwide. The main reason underlying this interest is a growing awareness of the key role played by education and training in economic competitiveness and social inclusion. In many countries it is therefore an ultimate goal to modify and modernise TVET systems and training institutions aiming to strengthen the quality of training performance and to improve training results (outcome).

In this context proven **Quality Assurance Concepts (QA)** such as the European Common Quality Assurance Framework CQAF and the EFQM Model of Excellence have played a vital role in reforming TVET Systems in Europe and other countries. Aiming to speed up TVET reform processes it is advised to refer to already existing models and to take benefit from experiences made in other countries. However, it is understood that national concepts must consider the national specifics and other prevailing circumstances.

Due to the fact that many countries are elaborating this issue at the same time, it was stimulated by Colombo Plan Staff College for Technician Education (CPSC) to **strengthen regional co-operation and networking** in this regard aiming to support the development of quality assurance frameworks that are appropriate for the conditions and realities of TVET systems in the Asia-Pacific region.

With respect to TVET in developing countries it has been understood that rigid external assessment concepts with strict formal procedures did not satisfy the expectations of TVET planners and the institutions itself. It turned out that **'Top Down' approaches** with responsibility solely on supervisory and management level have often not shown satisfying results. As a matter of fact it is recognised by experts nowadays that quality improvements are not reachable unless involved staffs are dedicated to and motivated for quality contribution.

In this context the active and self-responsible involvement of staff of different ranks in assessing and discussing quality affairs and participate in developing plans for improvement (**'Bottom Up' approach**) has become an ultimate and indispensable element in many quality assurance concept for TVET systems. Therefore, an ultimate key-feature in all up-to-date quality concepts is the provision of institutional self-assessments.

Subsequently **institutional self-assessment arrangements (SA)** - the process through which TVET institutes evaluate their performance, after collecting and analysing evidence – should become a core element in **Pakistan's QA-strategy** aiming to build up the newly to arrange **'National Qualifications & Quality Assurance Framework' (NQQAF)**.

The **determination of SA is to foster improvements** at the TVET institutes and chiefly the learning outcomes. The self-assessment process represents a campaign at the level of TVET institutes (operational level) where specifically designated Quality Assessment Teams coordinate and conduct the SA process, under involvement of various staffs from the institutes. The incorporation of views of concerned stakeholders (companies, community representatives) and beneficiaries (students) is an innovative feature of this concept.

Self-assessment is a cyclic procedure, with the results being outlined in an annual self-assessment report. The judgment of performance is based on solid evidence gathered by the TVET institutions throughout the year and aims **to identify strengths, weaknesses and potentials** of the TVET institutes and therefore allows appropriate actions for improvements.

Accompanied by the prevailing assessment and accreditation routines both tools provide the **platform for a continuous improvement of the institutes** and the delivery of the TVET system. By applying the QA tools simultaneously far reaching opportunities will be created to obtain more reliable information regarding the institutional operations, performance and outcome (validity), this includes strengths as well as weaknesses analyses, to obtain relevant information regarding areas and opportunities for institutional improvement (proposals), to be transformed into work plans and to prepare the way for a much stronger engagement and readiness of institute's staff to improve own performance and contribute to a sustainable development.

At present, the National Qualification Framework in Pakistan is grounded on a 3-pillar approach, including '**National Vocational Qualification Standards (NVQ's)**' and '**Competency Based Training Standards**' (CBT's). The third building block '**Accreditation and Certification**' is supposed to ensure that training provides will meet the prescribed standards.

Taking the TVET development experiences in EU and some Asian countries into account the report suggests with respect to Pakistan to enhance the building block Accreditation and Certification by incorporating substantial quality measures, presenting the 'new' building block '**Quality Assurance**'. Next to the already existing building blocks the new pillar 'Quality Assurance' will foresee substantial elements such as Institutional level based self-assessments (SA), self-development initiatives (at institutional level), external assessments by an accreditation authority, accreditation & certification procedures and rehabilitation programmes for institutes.

To promote the integration of QA into NQQAF, actions have to be taken on the three different levels of the **TVET system**, the **Central Level** (political, decision-making), the **Provincial Level** (administration, supervision) and the **Level of Operations** (operations, self-development).

To launch Quality Assurance into NQQAF within a project approach it is advised to foresee three phases: a) Initialisation Phase (6 months), b) Probation and Fine Tuning Phase (2 years) and c) Consolidation Phase (2 years).

Aim of the **Initialisation Phase** is to create a common understanding between the actors regarding their potential role and tasks, to develop a time frame for actions, to establish relevant documents for the proceeding of internal self-assessment and to modify existing

documents utilised in the accreditation process, to qualify staffs and to define the type and volume of external support.

During the **Probation and Fine Tuning Phase** a first sample of institutes will conduct self-assessments, followed by external assessments, based on afore defined criteria. Involved staff will be made familiar with the application of tools provided and will carry out the self-assessments. The results will deliver preliminary benchmarking data regarding performance of institutes and will indicate areas of actions for improvement. It is understood that this process will need to be closely monitored by the respective authority. Additionally, external expert's assistance would probably be required.

Purpose of the **Consolidation Phase** is to countercheck processes and routines and, if necessary, to adjust the concept for large scale dissemination. Once the quality assurance concept has been tried out on a pilot base efforts will concentrate on the spreading out of QA to a greater number of institutes at other regions. At this stage it is advised to assess the regulatory framework for TVET aiming to enhance regulations as it deems necessary for a sound functioning of the new 'National Qualifications & Quality Assurance Framework of Pakistan'.

The implementation of a comprehensive Quality Assurance concept as part of the NQQAF would result in **substantial improvements of the TVET system**. The coordination among the concerning authorities could be improved with positive impact on the performance of the institutes. Standards are set in order to guarantee a defined quality of TVET deliveries. Because performance quality of institutes is monitored from an external view and from the institutional perspective the results will have a **strong stimulus on the institute's development** activities. Finally training institutes will act better and closely with the 'world of work' and teaching and training staff will be likely to build up dedication and improve competencies through new challenges and more opportunities for individual development.

The introduction of QA elements in TVET on a larger scale will definitely require additional resources. However, the long-term **benefits for society and the economy** are such that the initial costs related to the upgrading of quality are well-justified. In order to make QA arrangements feasible and affordable it is particularly essential that countries aiming to enhance and to improve their TVET concepts and outcomes should seek close cooperation with institutions in countries that have already developed and improved quality assurance in TVET.

To analyse and adopt elements of best practices and innovations which have been proved successfully at other places might be a **recommendable strategy**. In this context it would be advisable to take reference to internationally proven QM-concepts regarding adaptability, to analyse the respective development in the region, to participate in interregional and international networks and to seek partnerships for cooperation with appropriate TVET authorities and/or institutes.

1 Introduction

The interest in the quality of, and improvements to, the technical and vocational education and training (TVET) systems has increased progressively in recent years in most of the states in the European Union (EU) and other countries worldwide. The main reason underlying this interest is a growing awareness of the key role played by education and training in economic competitiveness and social inclusion. It is therefore an ultimate goal in many countries to modify and modernise TVET systems and training institutions aiming to strengthen the quality of training and to improve the training results (outcome).

Under this scope quality assurance plays a decisive role in modernising education and training systems and in improving their performance and attractiveness; similar overall policy objectives are widely shared by many countries in the EU, Asia (Sri Lanka, Lao, Thailand, Vietnam, China) and in Australia as well.

Subsequently, education and training systems are being modernised and transformed in terms of more effective management systems, quality and relevance of training programmes, staff competencies and efficiency of teaching and operational processes aiming to improve the quality of institute's training results. Within this context, quality assurance and quality management measures are the major means for steering and promotion of this transformation processes in many countries.

The purpose of this document is to provide substantial information regarding TVET quality approaches and experiences made in the EU and some Asian countries, with relevance for the TVET quality debate in Pakistan. Furthermore, the report reflects on quality issues in the context of the National Qualification Framework (NQF) in Pakistan and demonstrates practicable routes for implementation of quality assurance concepts within the scope of NQF in Pakistan.

Last but not least it is intended to highlight the great chances and opportunities a well applied quality assurance concept might offer for stakeholders, teachers and training institutions. The assumed positive results of such development processes anchored at the level of TVET institutions should become beneficial to students, employers, communities and the regional economic growth of Pakistan's provinces.

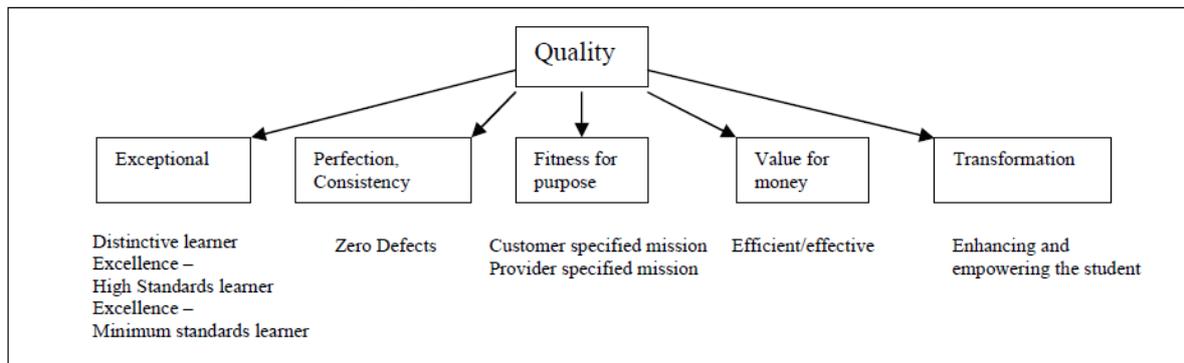
The facts, findings and conclusions of this report shall therefore initiate a debate amongst decision makers and other stakeholders on how to evolve the TEVT system under quality aspects aiming to strengthen the TVET institutes potential in the country.

2 Notations on Quality and Quality Systems

2.1 Dimensions of Quality

Perspectives on quality in vocational education and training can be defined in many different ways. For instance, often it is cited as excellence, zero defects, uniform quality, satisfying customer needs, operational improvement or fitness to purpose.

The figure hereafter presents some common definitions.



Source: Watty, 2003 p. 215

(acc. Kis 2005)

Figure 1: Definitions of Quality

Instead of creating a universal and unmistakable definition of TVET quality, it is more relevant to examine it as a relative and circumstantial concept. Quality is always bound to satisfying customer needs. Defining, developing and maintaining quality of the institute's 'products' (outcome) is seen as an ultimate and common task for TVET providers and their key customer and stakeholders.

In technical education one rather has to speak about qualities. On the one hand, it is to make a distinction between quality requirements set by the different stakeholders: by trainees, parents, teachers, employers, the society, and the government. Each stakeholder will appreciate different aspects of quality.

On the other hand, quality is a multi-dimensional notion. Referring to training institutions it is to differentiate between the

- Quality of **Input** (teachers, teaching materials, learning environment, physical resources),
- Quality of **Processes** (teaching processes, management processes, administration and support processes) and
- Quality of **Outcome** (which includes a quantitative dimension such as courses delivered, number of graduates passed and a qualitative aspect as level and usability of competencies acquired).

2.2 Regarding Quality Systems

In this document mainly two terms shall be applied when talking about quality systems.

Quality Assurance (QA), which takes an overall perspective view on the quality arrangements made. This covers procedures, processes, planning and concept development, aimed to safeguard and to improve the quality of a TVET provider's 'products'

(outcome). Quality assurance instruments can be seen as a set of tools that can help define quality objectives, criteria and standards, and which, furthermore, can verify that progress is being made in the right direction.

The term **Quality Management** (QM) covers rather operational aspects of quality development and quality improvement. Quality management aims to facilitate continuous improvement and development of operations and results at institute level. Quality management must be an integral part of a VET provider's operational system and is thus linked to all functions and levels within the organisation, as described later in detail.

However, quality aspects have to be made operational. The quality requirements and expectations of stakeholders have to be translated into the mission and goals of an institution and broken down into the objectives and activities of a training institute. The challenge is to achieve the goals, objectives and results (outcomes). If this is the case, then it is to state that the institution, the program or the process or outcome has quality.

However, in literature the demarcation is not very strict and the terms Assurance and Management are often used simultaneously. In Asia the term Quality Assurance is more commonly used than Quality Management.

2.3 Overview of Quality Management Concepts

Historically, Quality Management was used as an organisational strategy and as a method of management to check the quality of a business output through random checks at the end of the production process. Such checks should have ensured that the majority of the products leaving the production line were satisfactory; if problems did occur at a later stage, repairs could be affected or replacements provided. Such an old attitude for quality control tended to reflect a product-lead or product-orientated approach where the focus was on the product and the production process. Furthermore, the traditional concepts of Quality Management were 'Top-Down' approaches, allocating the responsibility for quality to the managerial level of an organisation.

In the last twenty years remarkable changes took place in the way how most businesses operate. The reasons were manifold. But increased competition and customer expectations, nationally and internationally, were the most driving one. Part of the change that has occurred has been the drive towards 'Total Quality Management' (TQM). Although many enterprises and TVET Institutions do not actually use the term TQM anymore, their philosophies in quality assurance & management are still linked with the basic principles of TQM.

The figure below shows relevant quality concepts in a rough time line, as they came in usage. With progression of time the concepts become more complex and sophisticated, and fulfilled increased expectations of customers and specific needs in a better tuned way. Especially the later arrived concepts of CQAF and EFQM proved to be more suitable for application in the service sector and for educational institutions as well. The different concepts are described in more details in the Annex to this report.

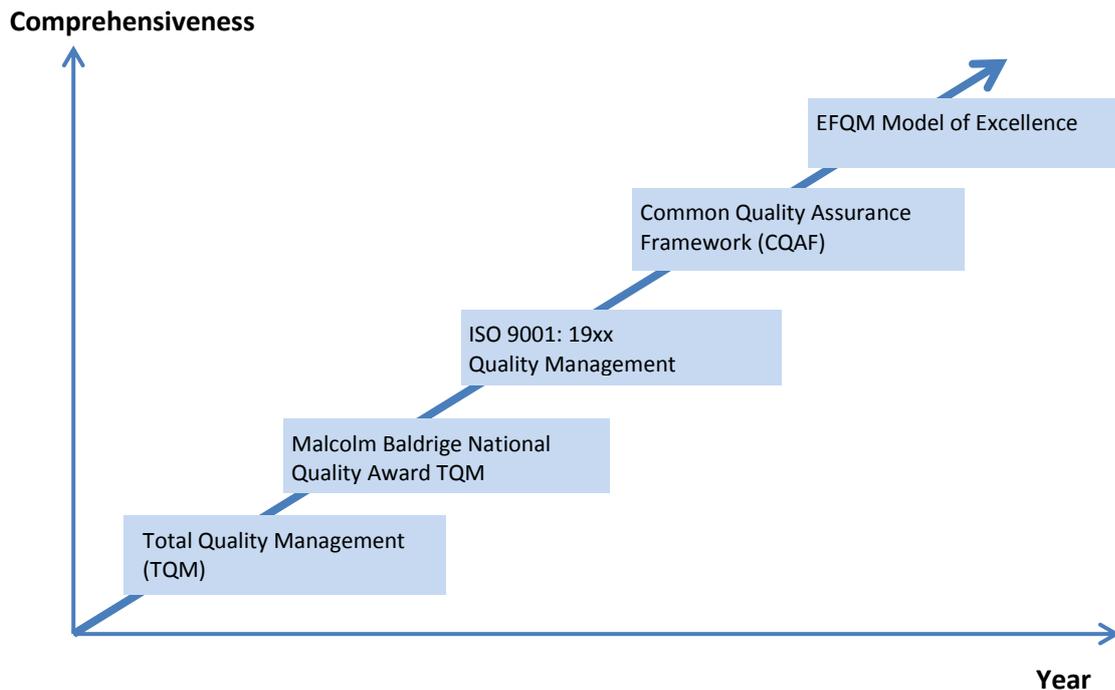


Figure 2: Major Quality Management Concepts of International Relevance

2.4 Quality Assurance in the Context of TVET

TVET is often seen as 'last choice education' because of its lack of quality. High-quality TVET, on the contrary, leads to a higher status and improved attractiveness of TVET. Also, high quality TVET programmes guarantee a strong link between what is learnt and the needs of the labour market, with the result that graduates are more likely to find suitable employment. Quality assurance is therefore essential at all levels throughout the TVET system.

The quality debate in TVET over the past 20 years has seen remarkable developments. Different concepts and philosophies were tried out in different parts of the world often achieving mixed results. With respect to TVET in developing countries it has been understood that technocratic approaches with rigid concepts and rather strict formal procedures does not satisfy the concerns of TVET planers and the institutions itself. It also came to surface that Top Down approaches with responsibility solely on the management level have often not shown satisfying results. As a matter of fact it is recognised by experts nowadays that quality improvements are not reachable unless concerned staffs on all levels of the TVET system are dedicated and motivated for quality contribution.

Quality Assurance and Target Groups

Quality assurance has no meaning on its own. It must rather be seen as a complex tool being deployed to obtain higher goals and to satisfy different stakeholders and to provide a value gain.

The value chain would look like

- For the **Individual**: better qualification, better employment opportunities, better pay for work, and better income for families, ...
- For the **Enterprises**: better qualified workforce, better products, improved turnover, extension of production, increased demand of staffs, ...
- For the regional **Society**: secured work, improved income, stable living conditions, children attending school regularly, better chances for education, ...

Development steps for implementation

The implementation of a Quality Management concept is usually only the first element in a chain of subsequent development steps.

Once it has been made mandatory for training institutes to establish a QA-System it would mean the institute is obliged to conduct periodical **self-assessments**, providing information on performance and outcome.

On the one hand, these results are commonly the starting point for an internal **self-development process**, aiming to improve outcome and other aspects such as processes, efficiency, self-responsibility and work-satisfaction by own means end efforts.

On the other hand, the internal reviews along with the external assessments might signal shortages and prove a demand of **external support** needed (e.g. shortage of staff, equipment, consumables, expertise) by the administrative authorities. In this context a work and progress agreement might be signed, where the authority commits itself e.g. for delivery of goods whereas the institute takes responsibility for the installation and operation. Those target agreement are quite common nowadays, e.g. in vocational colleges in Germany.

But the accreditation process (external assessment & internal self-assessment) often validates shortcomings or malfunctions of TVET institutes on the whole which can't overcome by own efforts. It would rather require modifications, adaptations or support from higher authorities regarding the TVET system in general (e.g. regulations regarding the legal status of training institute, financing and spending mechanism, entitlement to draw income, extending training for enterprises, generating of income by providing external services, delegation of responsibility to provincial level, others).

Often countries developed or reshaped their national **TVET strategies** and principles of operations, aiming to empower training institutions to fulfil its designated role.

Statements on Quality Assurance

- QA is necessary to ensure accountability and improvement of education and training
- QA policies and procedures should cover all levels of education and training systems
- QA should be an integral part of the internal management of education and training institutions

- QA should include regular evaluation of institutions or programmes by external and internal monitoring
- External monitoring bodies or agencies should themselves be subject to regular review
- QA should include context, input, process and outcome dimensions, while giving emphasis to output and learning outcomes.

Quality Assurance should also include ...

- Formulation of clear and measurable objectives and standards
- Preparation of guidelines for implementation, including stakeholder involvement
- Provision of appropriate resources
- Applying consistent evaluation methods, associating self-assessment and external review
- Allow feedback mechanisms and procedures for improvement
- Assure widespread accessibility of evaluation results
- QA initiatives should be coordinated on national, regional and operational level in order to ensure overview, coherence, synergy and system-wide analysis
- QA should be a cooperative process across levels, involving all relevant stakeholders
- QA guidelines and relevant documents provide reference points for evaluations and peer learning.¹

3 Quality Assurance within National Qualifications Frameworks

3.1 Common National Qualifications Frameworks

In the 90s many countries in Europe and South-East Asian states began modifying their TVET systems by introducing so called National Qualifications Frameworks (NQF).

NQF's are commonly grounded on a 3-pillar approach, including "Vocational Qualification Standards" and "Competency Based Training Standards". A system of "Accreditation and Certification" is supposed to ensure that training provides will meet the prescribed standards.

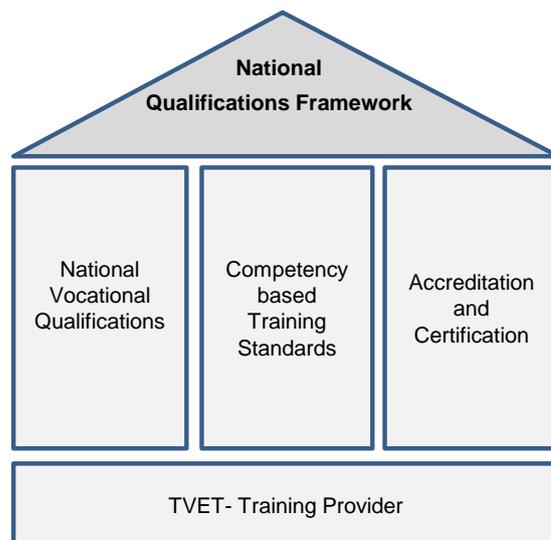


Figure 3: Common Structure of National Qualification Frameworks

The functions of these three main components are as follows

- National Qualifications Frameworks

A National Vocational Qualifications Framework represents an agreed system of qualifications, structured according to levels of qualifications that operates in a particular country. They support the coherent integration of qualifications and are intended to provide national consistency in the recognition of TVET outcomes. National qualifications are awarded by approved bodies and recognise that students have achieved prescribed levels of learning outcomes by mastering certain standards or competencies.²

- Competency-based Training Standards

Competency is the consistent application of knowledge, skills and attitudes to the standard of performance required in the workplace. Competency-based Training Standards present industry-determined specifications of performance which sets out the skills, knowledge and attitudes required to operate effectively in employment. In vocational education and training, competency standards are made up of units of competency, which are themselves made up of elements of competency, together with performance criteria, a range of variables, and an evidence guide. Competency standards are an endorsed component of a training package.³

- Accreditation and Certification

Accreditation is a process of accrediting an institution of vocational education or training, a programme of study, or a service, showing it has been approved by the relevant legislative and professional authorities by having met predetermined standards.

Accreditation, being both a process and a result, focuses on the continuing improvement of educational quality. As a process, it is a form of review (assessment) in which an accrediting body establishes sets of criteria and procedures to encourage high standards of quality education among its members. As a result, it is a form of certification or formal status granted by a recognised and authorised accrediting agency to an educational program, where applicable, to an educational institution as possessing certain standards of quality which are over and above those prescribed as minimum requirements for government recognition based upon an analysis of the merits of its educational operations, in terms of its philosophy and objectives.⁴

The previously described NQF concept was prevailing for quite some time in many countries. It aimed to structure the TVET sector itself and provided for administrators a suitable tool to control the system. By assessing the individual training centres, administrations would obtain an overview regarding the performance of the TVET system, at least on regional level. For the management of training institutions, the NQF concept provides clear guidelines, benchmark criteria and performance standards. However, until then no specific active role was assigned to the training institution within this concept.

With the progression of the quality debate within industry around the mid-90s, a remarkable change in philosophy took place. This shift of paradigm set the individuals (staff), involved in the production and service processes, in forefront when discussing quality issues. Under the expression of KAIZEN⁵ staffs became not only more responsible for the output quality, but were also made more involved in developing solutions concerning quality problems (quality circles). These efforts led to extremely positive results. Subsequently, the underpinning idea of participation of staffs in quality debates was transferred to numerous companies of the production- and service sector. Furthermore, this staff-participation approach found its way into quality management concepts of education and training institutions.

Since then the active and self-responsible involvement of staff of different ranks in assessing and discussing quality affairs and participate in developing plans for improvement has become an ultimate and indispensable element in many quality assurance concept for TVET systems.

3.2 The 'New' Movement in Quality Assurance in Europe since 2000

In the past decade the TVET sector received special attention in Europe. Starting from the goal of a solid economic empowerment of Europe, also by an extensive improvement of the training delivery of workers in the European countries, substantial contributions were given.

Several decisions made by the EU-Commission and the EU-Council set the course for a modernisation of vocational training in many European countries. The *Copenhagen Declaration*⁶ of 2002 provides a comprehensive list of objectives for the development of technical education and vocational training in the EU countries.

Some of the key features are

European dimension

- Strengthening the European dimension in vocational education and training with the aim of improving closer cooperation in order to facilitate and promote mobility and the development of inter-institutional cooperation, partnerships and other transnational initiatives ...

Transparency, information and guidance

- Increasing transparency in vocational education and training through the implementation and rationalisation of information tools and networks, ...
- Strengthening policies, systems and practices [...] and the transferability and recognition of competences and qualifications, in order to support occupational and geographical mobility ...

Recognition of competences and qualifications

- Investigating how transparency, comparability, transferability and recognition of competences and/or qualifications, between different countries and at different levels, could be promoted by developing reference levels, common principles for certification, and common measures, ...
- Increasing support to the development of competences and qualifications at sectorial level, by reinforcing cooperation and co-ordination ...
- Developing a set of common principles regarding validation of non-formal and informal learning ...

Quality assurance

- Promoting cooperation in quality assurance with particular focus on exchange of models and methods, as well as common criteria and principles for quality in vocational education and training.
- Giving attention to the learning needs of teachers and trainers ...

Subsequently, substantial measures aiming to improve the TVET sectors were introduced in most of the European countries. Among others especial attention was given to introduce quality assurance systems. In this context the Common Quality Assurance Framework (CQAF) was developed by the EU⁷ and was widely engaged as reference model. Along with the EFQM Excellence Model a profound basis was established, enabling partner countries to strengthen their TVET systems, especially under the aspect of integrating quality arrangements into TVET.

As a result virtually all European countries have modernised their training systems in the recent years, aiming to modify and improve the formal training of skilled workers and employees according to the needs of the labour market economy. In this context the introduction of comprehensive quality assurance systems for the TVET system and at the individual training institutions, in order to improve education and training performance and

outcome significantly, was of high importance and became an indispensable element in any TVET strategy.

3.3 Developments in Neighbouring Countries

Since more than a decade the continuous improvement of quality of education and training is on the agenda in the region. Especially the enhancement of quality of the TVET systems is one of the main objectives in a number of south-east Asian countries.

Furthermore with the increasing movement of workforce in the region, the demand for mutual recognition of qualifications through qualification framework increased as well. Also for the time-bound migration of workforce to the Gulf States the certification of qualifications and competencies gained a high importance.

In this regard experts do see a great necessity for the countries in the region to invest in the development of “strong foundations of qualification framework on three aspects such as skills standardisation, competency based curriculum and quality assurance.”⁸

At present a number of countries are on their way to development national qualifications frameworks (NQF) and assessment & accreditation concepts. To ensure that standards are adequately applied, it is increasingly seen to be necessary to have arrangements for valid national quality assurance in place.

Initiatives by ‘Colombo Plan Staff College’

Due to the fact that many countries were elaborating this issue at the same time, it was stimulated by Colombo Plan Staff College for Technician Education (CPSC) to strengthen regional co-operation in this regard. “There are a number of models in place in different parts of the world, but cooperative regional work is also needed looking to the diversity in the region. The aim is to support the development of quality assurance frameworks that are appropriate for the conditions and realities of systems in Asia-Pacific region.”⁹

It is assumed that it is the goal of each country to establish TVET institutions that have innovative programmes that can influence the human capital to achieve national, regional and international competitiveness. In this context it is seen necessary that quality assurance should be emphasised and benchmarking with international standards should be continuously done in order to determine the gaps in the programmes offered as well as the institution itself. The main aspiration of this movement is to achieve national competitiveness and to be at par with other international TVET institutions.

Aiming to support member countries, CSPC has initiated the establishment of the Asia Pacific Accreditation and Certification Commission (APACC)¹⁰ in Seoul 2004. Purpose of the institution is to develop strategies to ensure sustainability is the development of a regional accreditation and certification system.

This regional scheme seeks to evaluate capability and effectiveness of TVET institutions, to support the mobilisation of workforce across national boundaries, and to establish a clearinghouse for accessible information and cooperative agencies.¹¹ It is worth mentioning that Pakistan has signed the respective Memorandum of Agreement (MOA) with APACC¹².

Core objectives of the MOA are:

- To promote the objectives and goals of APACC [...] to encourage TVET systems for HRD such as Polytechnic Colleges, Technical Colleges, Vocational Training Institutions, [...] to undergo a self-study evaluation under APACC procedures and standards;
- To identify opportunities for prescriptive directions towards encouraging TVET systems for HRD in member countries to undertake accreditation and certification by APACC;
- [...]
- Tap qualified local accreditors, [...] from the member countries, who may be trained on APACC accreditation procedures as would-be accreditors for scheduled accreditation activities in the member countries¹³.

It was realised that with the establishment of APACC significant impacts on TVET systems in countries where accreditation according APACC regulation took place. During the course of the implementation of APACC in the regional member countries various innovative practices were adopted by the TVET institutions. It was observed that institutions going through the process of APACC certification were obtaining major improvements on specific TVET deliveries.

Further international references

Referring to the international aspects of QA attention has to be given to a study¹⁴, where Australia, Canada, Germany, New Zealand, Singapore, United Kingdom were analysed regarding their TVT Quality Assurance Systems. Although the study concentrated on the relevance for Australia some general conclusion could be made as mentioned below. It is noteworthy that the study clearly recommended to distillate the efforts done in Europe regarding QA with respect to utilisation in Australian states.

A very comprehensive publication regarding 'Emerging Challenges and Trends in TVET in the Asia-Pacific Region'¹⁵ is available, providing useful information on the status of TVET system developments, its constrains and development concepts. It would be beyond this frame to elaborate further in this context.

Another study of interest from New Zealand¹⁶ compared TVET Systems in the some countries of South East Asia, Bahrain, Australia and New Zealand¹⁷. The results are discussion worthy and allow an overview regarding the widespread of key features of TVET in the various countries. However at present only New Zealand is reported to apply formal self-assessments at institutes' level. But Lao too has introduced formally QA in its TVET system, which includes self-assessment arrangements based on a prescribed structure¹⁸.

In this context it is noteworthy too that the Higher Education Commission in Pakistan has published a Quality Assurance Manual for Higher Education (Batool)¹⁹.

Additional reference documents highlighting international aspects of QA, relevance, comparability and 'best practice' experiences are cited under References.

3.4 Generalised Findings & Recommendations

- Many Asian countries actively work on the modernisation of their TVET systems, with special focus on National Qualification Frameworks.
- The integration of quality assurance arrangements are currently favoured by some countries.
- Inter-regional cooperation on harmonisation of NQF is desired by many countries and has been put into agreements through CSPC.
- APACC has been established by CPSC to support institutions in equipping themselves with internationally recognised quality standards and systems and to accredit and certify TVET institutions on request against international benchmarks; with high interest of member states.
- QA strategies from other countries are good practice examples, however it must be recalled that any quality assurance strategy implemented in other nations reflect the context within which they are employed; an intensive debate regarding the right strategy is required.
- Quality Assurance Arrangements therefore cannot simply be transferred between countries and must consider regional, cultural and economic specifics. Hence, there is a necessity to develop (own) country specific strategic concepts with defined criteria and procedures.
- However, since well-designed, tested and internationally experienced quality assurance concepts are widely being used as reference models it is highly recommended to use them as reference models; this also to be at the height of the international and inter-regional debate.
- Strategies which foster apparent movements within TVET towards continuous improvement and an associated emphasis on review are to be preferred against isolated alongside auditing processes²⁰.
- Interactive processes between the regulating or auditing/reviewing agency and the training organisation, including the exchange of information and self-assessments are highly recommended.
- A high degree of independence of the auditing agency from the regulator or regulating agencies should be secured.
- The public availability of results from, and information generated through, the quality assurance processes, including audit or review processes should be assured (data bases).
- Encouragement of teachers and trainers to dedicate and strive for improving competencies and professionalism should be supported by provisions in training and by other kinds.
- Specifically it was suggested by the Australian Skills Quality Authority to consider the European quality assurance reference framework for TVET in Australia.

Reforming TVET systems is given a high priority in many countries. At present only some approaches are established, making self-assessment of TVET institutes a mandatory element of institutional development. However the question how to overcome the low performance and the partial irrelevance of institutes' outcomes concerning the labour market needs has led to very intensive debates regarding introduction of quality assurance arrangements and implementation of concepts to empower TVET institutes performance.

Within this context the knowledge grows, that to strengthen TVET it is also needed to take appropriate actions on institute's level. In this regard concepts to strengthen institute's performance and outcome by implementation of institution's based development strategies, e.g. by self-assessments is under debate.

3.5 Integration of Quality Assurance into National Qualifications Frameworks

Certainly it is a fact that by the promotion of the EU the movement of integrating Quality Assurance into TVET has gained rapid speed, not only in Europe. Without any doubt the concepts of CQAF und EFQM have gained supremacy and serve as the ultimate reference models when EU-countries reform their TVET systems. But also beyond Europe the concepts have triggered attention and have been subject for study. This especially with regard to how beneficial the principles behind the concepts are and whether adaption of elements or components can be done without difficulties²¹.

The attractiveness and attention given to EFQM and CQAF presumably must be seen against the background of the limited efforts that were achieved with the traditional method of Assessment and Accreditation of TVET institutes. Despite the availability of well-developed concepts for the carrying out of assessment and accreditation processes at institutes and thoroughly designed NVQ's and training standards often only minor improvements in the outcomes of training institutes were achieved.

In contrast to the 'traditional-style' assessment and accreditation of institutes EFQM and CQAF foresee an inherent self-assessment of the institutes conducted by the institute's staff members. This change in philosophy was pioneering at the beginning because it took the simple fact into account that staff from the respective training location should know best about constrains, development opportunities, weaknesses, market chances of graduates, parents and companies expectations and other facts. As a result the 'Top-Down' approach of external assessment was buffered by a 'Bottom-Up' component of (internal) self-assessment, representing the key-strategic elements of the 'new' quality assurance understanding.

By this proceeding of applying 'Top Down' and 'Bottom Up' approach within QA simultaneously far reaching opportunities were created to

- Obtain more reliable information regarding the institutional operations, performance and outcome (validity), this includes strengths as well as weaknesses

- Obtain relevant information regarding areas and opportunities for institutional improvement (proposals), to be transformed in to work plans and
- Prepare the way for a much stronger engagement and readiness of institute's staff to improve own performance and contribute to a sustainable development.

4 Incorporation of QA into the NQF of Pakistan

The intended integration of quality arrangements into the present system of NQF in Pakistan, as it is recommended as result of the previous analysis and argumentation, will require a project approach foreseeing decisions, commitments, planning, recourses and time frames.

The following elaborations provide principle thoughts and outline a tentative project for discussion and to reach consensus on how to invest best to the prosperous development of the technical training institutions in Pakistan.

4.1 Conceptual Considerations

The figure below demonstrates how QA will become integrated into the existing NQF. Next to the already existing building blocks National Vocational Qualifications (NVQ) and CBT-Standards the newly shaped building block 'Quality Assurance' (QA) should contain the elements

- Institutional level based self-assessments (SA)
- Self-development initiatives (at institutional level)
- External assessments by an accreditation authority
- Accreditation & certification procedures
- Rehabilitation programmes for institutes.

Subsequently, it is proposed to rename the NQF into the National Qualifications & Quality Assurance Framework (NQQAF).

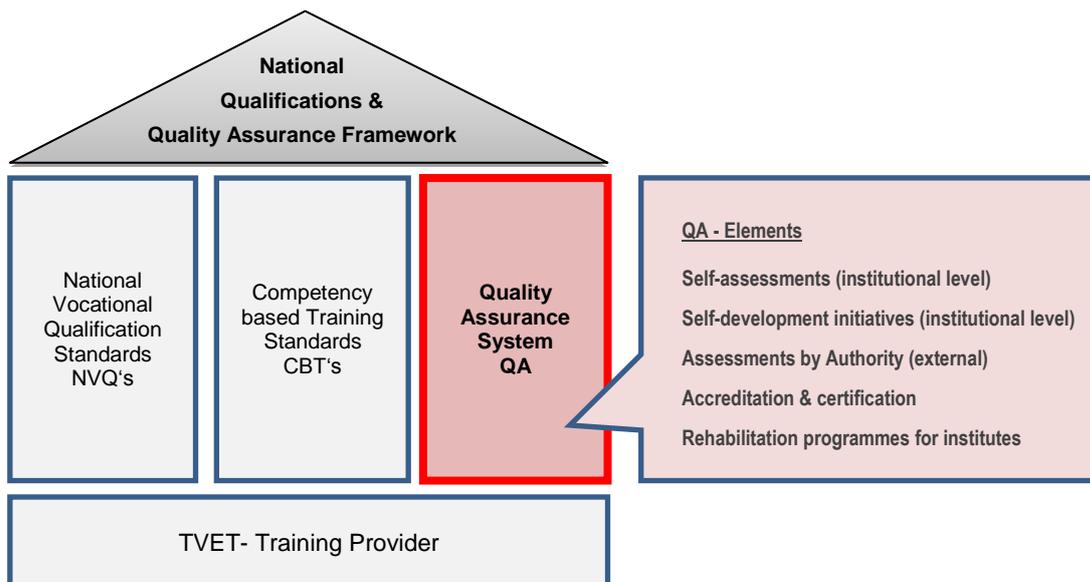


Figure 4: Basic Structure of a National Qualifications & Quality Assurance Framework

4.2 Reflections regarding the Structural Setup

To promote the integration of QA into NQQAF, actions have to be taken on three different levels of the TVET system of Pakistan

- The Central Level (political, decision-making)
- The Provincial Level (administrative-supervisory)
- The Level of Operations (operations and self-development)

The following figure reflects the intended structural setup for incorporating assessment and self-assessments into the National Qualifications Framework of Pakistan.

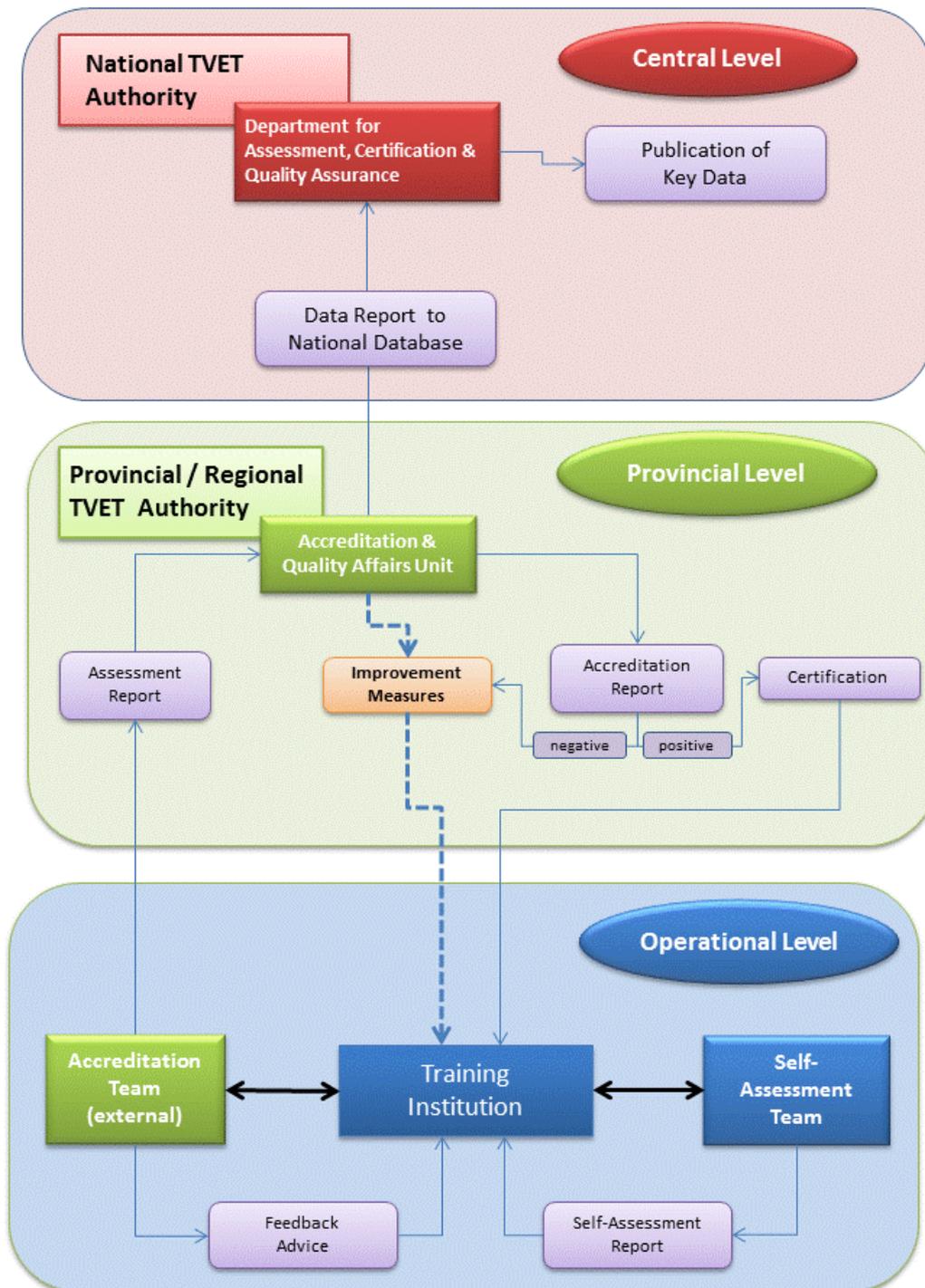


Figure 5: Arrangement for the National Qualifications & Quality Assurance Framework

4.3 Major Tasks to be secured on the Functional Levels of the TVET System

The transformation of NQF into the National Qualifications & Quality Assurance Framework (NQQAF) requires substantial actions on the different levels of the TVET System in Pakistan aiming to provide explicit command structures, defined allocations of roles and tasks and to ensure efficient and effective collaboration between the levels.

At Central Level

At Central Level the establishment or enhancement of a Department for Assessment, Certification and Quality Assurance has to be tackled. Details have to be specified in time. However, it would be a key task of this unit to drive the transformation process ahead and to make provisions available. Another task would be to establish a national data base and to ensure collection, analysis and publication of performance data obtained by the assessments. In case of severe deficiencies and constrains at institute's levels (e.g. with legislative, monetary or structural background) it would be at the authority to develop solutions. Additionally it might be required to furnish relevant regulations aiming to make quality assurance arrangements within the NQQAF mandatory and operational.

At Provincial Level

At Provincial Level a Unit for Accreditation and Quality Affairs need to be established or enhanced. There must be strong mandate for the Provincial Authority to effectively and powerfully deal with all affairs. To specify role and tasks of the division would subject of the development concept. Core task of this Unit would certainly be to ensure the implementation of QA on the provincial level with all facets and at the centres.

Hence these are tremendous tasks; the implementation process might foresee several phases. It is very likely that staffs need to be qualified accordingly. The reliable functioning of the Division is of highest relevance, because the self-assessments will be the entry point for a long lasting period of enhanced development activities at training institutes in specified regions and locations of Pakistan.

At Operational Level

The ultimate aim of this project is to enter into a process to improve the outcome of training institutes by quality and quantity. Subsequently the operational level is the ground of various actions, covered by a strategy which puts the institutes in the focus of an institutional development process.

The first implementation cycle for the launch of the QA concept, especially self-assessments, would run as a pilot project. The reason for this is that the experiences gained will provide the 'lessons learnt' and subsequently the feasibility of this approach must be re-evaluated. Since it would be an asset to have motivated and encouraged staff aside, training and mentoring would be a requirement. Additional matters would have to be specified in the project plan.

5 The Internal Self-Assessment Process

5.1 Introduction

The internal self-assessment (SA) - the process through which TVET institutes evaluate their performance, after collecting and analysing evidences - is the core element in the QA-strategy aiming to build up the newly-arranged National Qualifications & Quality Assurance Framework (NQQAF).

The determination of SA is to promote improvements at the TVET institutes and chiefly the learning outcomes. The self-assessment process represents a campaign at the level of TVET institutes (operational level). A specifically designated Quality Assessment Team is to assigned with the task to coordinate and to drive the SA process. But various staffs from the institute will play a vital role during the assessment activities. The incorporation of statements and views of concerned stakeholders (companies, community representatives) and beneficiaries (students) is an innovative feature of this concept.

Self-assessment is a cyclic procedure, with the results being outlined in an annual self-assessment report. The judgment of performance is based on solid evidence gathered by the TVET institutions throughout the year.

Self-assessments possess certain specifics such as

- They are results-oriented
- They refer to all aspects of the frame of activities of TVET institutes
- They especially focus on the quality of the outcome of TVET processes
- They are carried out with the participation of all institute's community (staff, students) but beneficiaries such as regional employers and parents should also become involved
- They lead to an increasing appreciation amongst students and other stakeholders
- They identify strengths, weaknesses and potentials of the TVET institutes and therefore allow appropriate actions and necessary improvements.

5.2 Sequence of Actions during the Accreditation and Self-assessment

The merger of accreditation and self-assessment has to follow a certain time-bound structure as laid out in the figure below. The figure demonstrates the major steps to be processed in this respect

- Step 1: Internal self-assessment (periodically annually)
- Step 2: External assessment (3 to 5 years)
- Step 3: Preparation of assessment report
- Step 4: Analysis and judgement of report
- Step 5: Improvement measures if assessment results are below benchmark
- Step 6: Accreditation if assessment results are above benchmark
- Step 7: Forwarding of data for the national monitoring system.

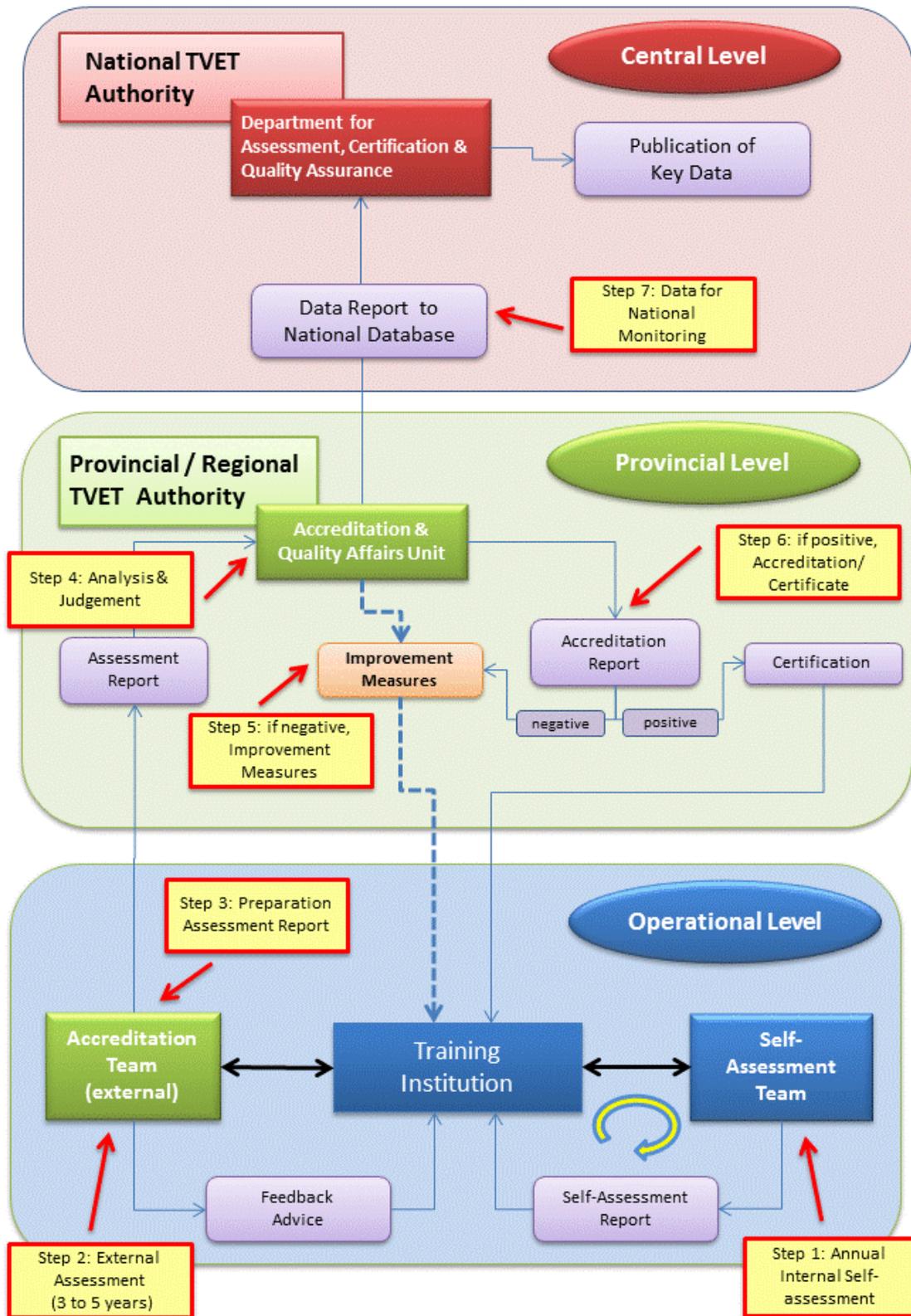


Figure 6: Sequence of Action Steps during Accreditation and Self-Assessment

5.3 Temporal Context of Self-assessment and External Assessment

It is principally intended to perform a SA once a year resulting in the establishment of the Internal Development and Action Plan. Hence, the institute has to make the required arrangements in time.

However in case of an upcoming external assessment triggered by the Authority, a strict time plan has to be followed. Because the results of the SA are of significant importance to the external assessors, it would be in the own interest of the institute to finalise this process in time. Usually the SA process has to start approx. 8 month prior to the date of finalisation.

The subsequent external assessment has to be conducted in dependence of the results of the previous one and might be delayed if results and progress of the institute's efforts are satisfying. These interrelations are displayed below.

Table 1: Timeframe for the Self-assessment process

Steps of Actions	Time Line
<ul style="list-style-type: none"> Nomination of the leader of the SA process Compose the assessment team Prepare the work plan 	Eight months before the planned finalisation of the self-assessment
<ul style="list-style-type: none"> Divide job spectrum and assessment team (sub teams) Assign sub teams to selected task spectra Appoint individuals to be in charge Collection of information and data Communication with respective staffs Write down findings, results, figures as part of the first draft report 	During the following six months
<ul style="list-style-type: none"> Discussion on the drafts in the SA-team according schedule Preparation of second draft 	Four months before
<ul style="list-style-type: none"> Discussion of the second draft with all unit staff and students during an open hearing Alternatively a workshop can be held composed by selected staff, students and external stakeholder 	Approx. three months before
<ul style="list-style-type: none"> Edit the comments of the hearing/workshop for the final draft Final draft established 	Two months before
<ul style="list-style-type: none"> Self-assessment Report (SAR) ready for distribution External assessment can start 	One month before

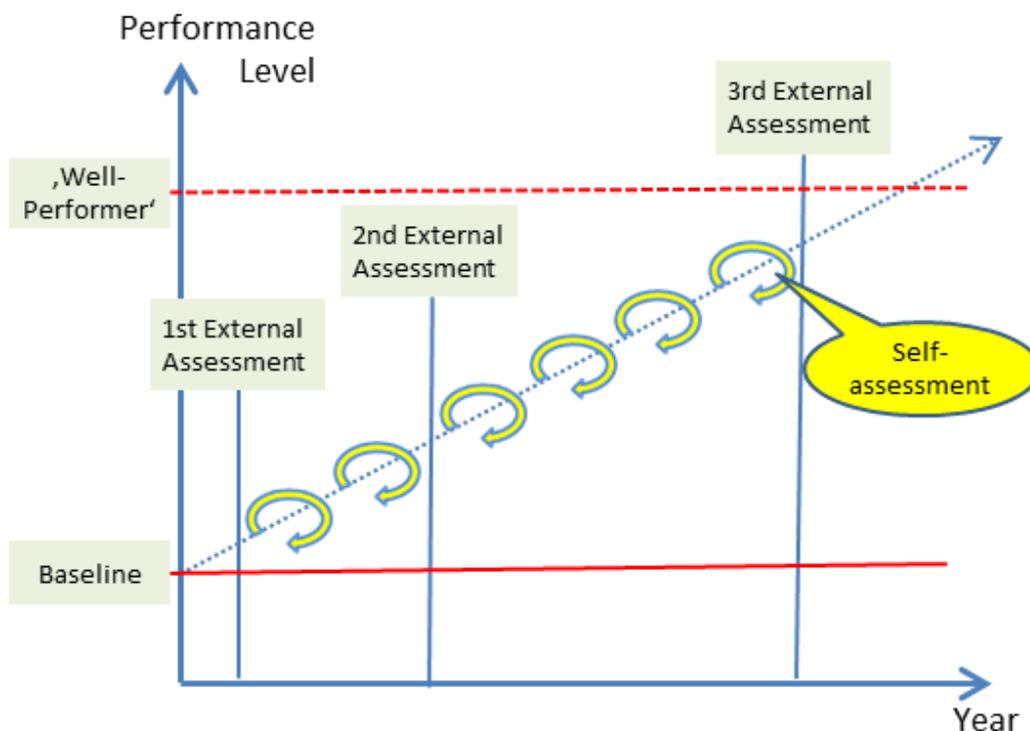


Figure 7: Interrelation between Self-assessment and External Assessment

5.4 Aspects of the Self-assessment Report

Some requirements with respect to the Self-assessment Report (SAR) should be met:

- SAR contains a clear description of the present situation (performance) and a critical analysis of the current situation to see if one is satisfied with it or not. Judgements have to be made against pre-set criteria (indicators and benchmarks). Furthermore, it clearly states what actions will be taken to solve the problems.
- The manner in which self-assessments are carried out can vary; also the levels of who is to be involved in the discussion of the report will differ from one institution to the next. Nevertheless, responsibility for the self-assessment lies with the assessment team.
- Self-assessment results shall serve as an input for an external assessment, it is important for the SAR to follow a specific, prior defined, format as to be specified in a to be developed Guidebook for Self-assessments.
- Furthermore SAR contains relevant, significant and applicable recommendations for the development of the annual internal work plan.

5.5 Thematic Aspects and Areas (Criteria) of Self-assessment

For the self-assessment, the most essential question is against what criterions the quality has to be assessed.

Usually a set of **Central Criteria** is to be developed reflecting the specifics of the training institutions. The central criteria or areas of assessments would have to be broken down into a number of **Sub Criteria**, often referred to as indicators. The indicators are described by Performance Descriptors. If the SA system has already been in place for some time, the descriptors can be determined with **Benchmarks**. It is an underlying aim to uplift the benchmarks in line with the progress of performance made by the institute.

As already highlighted it would be work-saving and efficient to refer to already existing models and to study available approaches from other countries. However, it does not obviate the duty of cultivating an own national QA system.

The sample shall demonstrate the interrelationship between the terms.

Table 2: Interlink between Central Criteria, Sub Criteria and Performance Descriptor

Central Criteria / Area:	People
Sub Criteria/ Indicator:	Staff development
Performance Descriptor:	Staff development and appraisal interviews take place
Benchmark:	once a year at least 70% of staff takes part in interview

The table on the next page provides an overview of some criteria arrangements as they have been preferred by some countries. Comparison of the individual arrangements with the EFQM Model of Excellence demonstrates the close relationship of the arrangements.

Table 3: Evaluation Criteria arrangements from different countries

EFQM Model of Excellence	Traditional functional Input- Output Model ²²	QA- System Romania ²³	Management & Administration in TVET in Malaysia ²⁴	QA System PDR Lao ²⁵
<p>Enabler Criteria 1: Leadership How leaders develop and facilitate the achievement of the Mission and vision of their institution.</p> <p>E-Criteria 2: Strategy How the organisation ... implements its mission and vision via a clear stakeholder focused strategy, supported by relevant -policies, -plans, -objectives, - targets, - processes.</p> <p>E-Criteria 3: People (staff development) manages, develops, releases the knowledge and full potential of its people at an individual, team-based and organisation-wide level.</p> <p>E-Criteria 4: Partnerships and Resources organisation plans and manages its external partnerships and internal resources in order to support its strategy and the effective operation of its processes.</p> <p>E-Criteria 5: Processes designs, manages and improves its processes in order to support its strategy and fully satisfies its customers and other stakeholders by generating increasing value.</p> <p>Result Criteria 1: Customer Results What the organisation is ... achieving in relation to its external customers.</p> <p>Result criteria 2: People Results is achieving in relation to its people.</p> <p>Result Criteria 3: Society Results is achieving in relation to local, national and international society as appropriate.</p> <p>Result criteria 4: Business Results is achieving in relation to its planned performance.</p>	<p>GOALS/ STANDARDS Vocational negotiating competence; education and further education systems</p> <p>INPUT Staff, goals, teaching and learning materials, facilities, places of learning.</p> <p>PROCESS Learning and professional working processes, learning culture, opportunities to learn, learning accompaniment.</p> <p>OUTPUT Learning achievements and outcomes, success rate, occupational profiles, promotion profiles.</p> <p>TRANSFER Transfer of acquired learning to daily work environment and personal occupational biography.</p> <p>OUTCOME Professional, social and personal effects of learning process.</p>	<p>Quality Management (Leadership, Quality Manual, Internal Monitoring of Procedures)</p> <p>Management Responsibilities (Leadership, Communication, Partnerships, Information Systems, Finance)</p> <p>Resources & Staff Management (Securing the learning Environment, Physical Resources, Staff Management, Continuing Professional Development)</p> <p>Learning Programme Design, Development, and Review (Learning Programme Design, Learning Programme Development and Review)</p> <p>Teaching, Training, and Learning (Learner Support Service, Teacher/Trainer – Learner Relationships, Self-Directed Learning)</p> <p>Assessment and Certification of Learning (Summative Assessment)</p> <p>Quality Review and Improvement (Self -assessment Process, Improvement Process)</p>	<p>Strategic and operational planning</p> <p>Financial management</p> <p>Information management</p> <p>Student management</p> <p>Staff management</p> <p>Course and curriculum management</p> <p>Managing TVET delivery</p> <p>Managing assessment</p> <p>Managing physical assets</p> <p>Quality management</p> <p>Performance and accountability management</p>	<p>Vision, Mission, and Objectives</p> <p>Curriculum and teaching-learning delivery</p> <p>Learners, support of learners and graduates</p> <p>Staff management and development</p> <p>Budget and funding sources</p> <p>Facilities and environment</p> <p>Management of information system</p> <p>Public relations and marketing</p> <p>Quality assurance system</p> <p>Enhancement of invention and innovation and promotion of community services</p>

5.6 Supporting Structure for Self-assessment

For the launch of SA it would be essential to provide a support structure which includes

- Legislative measures (regulations, enactments, provision of mandates, others)
- Organisational arrangements (e.g. operational structures, mode of cooperation, communication, reporting systems, guidelines of various kind)
- Staff preparation (introduction and planning workshops, staff development programmes, training programmes, site visits, others)
- Provision of resources of various kinds.

Especially for all staff involved it is of great help if the documentation framework needed for professional SA is developed at an early stage.

Documentation could be

- Quality Assurance Manual
- Guidelines for operations
- Manuals for assessors, hand-outs for target groups, others
- Checklists, questionnaires, templates, forms, standards (hand, PC-based)
- PC- project data base information (plans, estimations)
- Quality records of various kinds.

6 Implementation of QA under a Project Perspective (Roadmap)

Assuming the incorporation of QA into the NQAF by a project approach the following sketch of a conceivable concept structure might be considered. Unscathed of this it remains to a development plan where all relevant aspects of such a project have to be specified.

Transferring QA into an operational concept for the institutional development of Pakistan's TVET-institutes a 3-phase concept is suggested

- Phase 1: Initialisation Phase (6 months)
- Phase 2: Probation and Fine Tuning Phase (2 years)
- Phase 3: Consolidation Phase (2 years).

6.1 Phase 1: Initialisation Phase

Aim of the Initialisation Phase is to create a common understanding between the actors regarding their potential role and tasks, to develop a time frame for actions, to establish relevant documents for the proceeding of internal self-assessment and to modify existing documents utilised in the accreditation process, to qualify staffs and to define the type and volume of external support.

Details of actions would be

- Preparation of the development plan with all relevant details for discussion
- Finalisation and agreement of the development plan
- Development of the executable concept, work plans and support documents
- Defining the mode of cooperation between stakeholders on central and regional level
- Establishment of task forces and nomination of national staff
- Selection of priority institutions for 1st trial implementation
- Training of involved staff (assessors, management from authorities, institutes)
- Provision of international expertise.

6.2 Phase 2: Probation and Fine Tuning Phase

During the Probation and Fine Tuning Phase a first sample of institutes will conduct self-assessments, followed by external assessments, based on afore defined criteria. Involved staff will be made familiar with the application of tools provided and will carry out the self-assessments. The results will deliver preliminary benchmarking data regarding performance and outcome of institutes.

Based on the internal self-assessment the external assessment results process will start. The assessed institutes have to work out a development strategy and to create an annual work plan. The work plan (Plan of Operation) will be subject of approval by the provincial authority. Alternatively an Agreement on Objectives might be concluded.

The provincial authority will provide expertise and resources and has to follow-up the on-going internal work process according to the QA-concept.

It is understood that this process will need to be closely monitored by the respective authority. Additionally external expert's assistance would probably be required.

The monitoring and evaluation of all activities in this phase are required aiming to modify and to fine-tune concept and procedures for the consolidation phase.

Major activities required:

- Preparation and conduction of assessments at selected institutions
- Analysis and evaluation of assessment results
- Fine-tuning of the assessment procedures
- Establishment of a national TVET-data base
- Launching of the SA system at selected institutes under guidance of experts
- Analysing and follow up of launching process
- Fine-tuning of procedures
- Preparation of standards, regulations and a legal framework.

6.3 Phase 3: Consolidation Phase

Once the Quality Assurance concept - specifically the external assessment and the Self-assessment -, has been applied and revised, the concept is ready and transferable for dissemination to other regions and institutions of different type.

At this stage it is advised to assess existing regulations on central level and to provide or reshape the framework for the new 'National Qualifications & Quality Assurance Framework of Pakistan'.

It would be within the responsibilities of the Central TVET Authority to

- Ensure that all requirements are met
- Clarify roles and competencies among stakeholders on various levels
- To ensure a firm independency of the corresponding departments on central and provincial level and
- Authorise the TVET institutes to act within a framework that would allow their active and appropriate participation.

Within a period of at least 2 years a previously defined number of institutions

- May have been assessed by the authority
- Have conducted self-assessments and
- Have established work plans and
- Have reached the stage to implement a systematic internal development process.

Major development steps are

- Development of a full scale implementation concept
- Conduction of external assessment in all selected regions according plan
- Finalisation of a predefined number of SA's at the designated institutes.

6.4 General Comments on the Establishment of Concept

To assure a smooth implementation of the NQQAF some suggestions should be considered

- Overall responsibility shall lie with the Central Authority
- Operational responsibility should lie with Provincial Authority
- Assessment bodies might comprise experts from central & provincial government and industry
- The establishment of independent Quality & Accreditation Boards might be considerable.
- Selection of institutes for the first quality cycle (self-assessment and external assessment) can be done either by application or by nomination. However it would be of great advantage to have participation on a voluntary basis.

- For the initial phase it is advised to select up to 5 institutes of the same type and similar size, aiming to obtain first indications regarding common performance quality standards within a specific range of institutes.
- Application of the QA-system would allow the benchmarking of institutes against a set of national quality indicators. The provision of a ranking list would be possible. In this context a national TVET data base should be established.
- Quality indicators need to be developed at an early stage and would be fine-tuned during the implementation process.

All aspects concerning the project should be defined within a development plan.

7 Expected Outcomes and Benefits

7.1 Outcome

The implementation of a comprehensive Quality Assurance concept as part of the NQQAF would result in some substantial changes of the TVET system. In this context some statements should be allowed concerning the expected modifications:

- The coordination among the concerning authorities could be improved with positive impact on the performance of the institutes.
- Standards are set in order to guarantee a certain quality of TVET deliveries; the QA system supervises the outcome and supports the development of institutes (by internal and external means).
- Because performance quality of institutes is monitored from an external view and from the institutional perspective the results will have a stronger stimulus on the institute's development activities.
- Training institutes will act better and closely with the 'world of work'.
- Teaching and training staff will be likely to build up dedication and improve competencies through new challenges and opportunities for individual development.

7.2 Benefits

Finally, there should be a brief look at the benefits for various actors and participants as the might materialise.

For students

- Training programmes meet their expectations in a better volume (also as a result of student's active involvement in the self-assessment process at institute's level).
- Competences acquired possess higher relevance to and suitability for the labour market.
- Higher awareness and responsibility regarding own professional development.

- Employment opportunities will increase.

For employers

- Confidence in the quality of training outcome and performance of the training institute education will increase.
- Confidence regarding the validity of the professional certificates will increase.
- Training programmes meet better the demand of employer's needs.

For TVET institutes

- Acceptability and acknowledgement by stakeholders and community will increase.
- Self-confidence in the quality of education and training programmes will motivate all institutes' staff.
- Satisfaction of beneficiaries (students, employers, parents) will increase.
- Development of a culture of reflection and of continuous improvement for all staff members will lead to higher dedication and involvement.
- A greater self-autonomy might lead to innovations and new 'products and services' (e.g. upgrading training for company employees).
- Inter-institutional cooperation and exchange of 'good practice' experience between institutes will improve work climate, work progress and performance.
- Access to and exchange of information about good practices and experiences made will provide a strong impetus to improve quality of work.

For community

- More transparency in terms of quality and outcome of the TVET programmes will provide higher prestige and appreciation
- Interest and readiness to support activities and programmes of institutes might increase.

The introduction of quality assurance elements in TVET on a larger scale will definitely contribute to additional costs. However, the long-term benefits for society and the economy are such that the initial costs related to the upgrading of quality are well-justified.

In order to make quality assurance arrangements feasible and affordable it is particularly essential that countries aiming to enhance and to improve their TVET concepts and outcomes should seek close cooperation with institutions in countries that have already developed and improved quality assurance in TVET.

To analyse and adopt elements of best practices and innovations as they have been proved successfully at other places might be a recommendable strategy.

In this context it would be advisable

- a) To study international QM-concepts regarding adaptability,
- b) To analyse the respective development in the region,

- c) To participate in interregional²⁶ and international²⁷ networks and
 d) To seek partnerships for cooperation with appropriate TVET authorities and/or institutes.

8 Glossary

Definitions of key terms²⁸ related to quality in TVET institutions varies among countries and regions. It is important, therefore, that all stakeholders agree on definitions and vocabulary. Below are some definitions of most common expressions²⁹.

Accreditation ...	is the outcome of internal and external quality assessment. It helps to ensure that institutions are recognised for providing quality TVET programmes and deliveries.
Benchmarking ...	Is the systematic process comparing the activities, processes and/or performance of a programme or outcome against predefined standards with the aim of identifying ways to improve performance
Effectiveness ...	means the quality of outcome of the TVET institution in relation to goals and objectives.
Efficiency ...	refers to the extent to which resources are well used by the institution.
External Assessment ...	involves quality assessment by an external or independent agency. It may be organised every three to five years. Employers and organisations that employ graduates should be involved in the assessment.
Indicator ...	is a standard to measure the level of quality implemented.
Output/ Outcome ...	Output can be defined as the results of learning in an educational context, whereas the outcome of learning is the capacity of an individual to implement what he or she has learned in a “real life” professional context (competence).
Quality ...	in Vocational Education and Training (VET) refers to three aspects: VET qualifications, courses, and providers. Educational quality is to be consistent with the vision and mission of national education initiatives.
Quality Assessment ...	is identification of the quality of TVET institutions against indicators identified in the TVET QA Manual. This process is designed to help institutions identify strengths, weaknesses, and opportunities for improvement. Quality assessment will comprise self-assessment, internal assessment and external assessment.
Quality Assurance ...	for education is the process of monitoring and assessment in line with defined requirements. The quality assurance system helps an institution gain confidence in its quality and gain an increase in public trust. Quality assurance may be undertaken by an external agency or through a TVET institution’s own internal quality management system . Quality assurance – whether external or internal and irrespective of how quality is defined – requires established benchmarks against which qualifications, courses and providers can be assessed.
Quality Auditing ...	is the process of internal monitoring of TVET institutions to ensure the presence of quality control mechanisms. The administrator of the TVET institution should develop a positive environment for his/her staff, conducive to quality work. TVET institutions should develop their own sustainable approaches to quality monitoring to suit their needs.
Quality Criteria ...	consists of a set of indicators measuring various aspect of the quality assurance

	system.
Quality Control ...	means the systems and mechanisms for quality education that are in place and are in accordance with designed indicators.
Quality Management ...	covers operational aspects of quality assurance and quality improvement on institutional level. Quality management therefore represents a structural setup of measures and aims to facilitate continuous improvement and development of operations and results. Quality management is an integral part of a TVET provider's operational system and is thus linked to all functions and levels within the organisation.
Self-Assessment ...	involves institution-level quality assessment and includes input from official committees, school staff, and students. A written self-assessment report (SAR) is required. Self-assessment must be conducted yearly in accordance with the annual development plan of the institution.
System and Mechanisms ...	refers to implementation steps carried out by staff. It includes planning in relation to the organisation of activities and allocation of resources towards designed goals.
Quality Standard ...	for TVET institutions may be developed and assessed through: Internal quality assurance processes; an external TVET quality assurance agency; International standard-setting of international generic applications.

9 References

9.1 Documents referred to in the Report

Batool, Z.; Qureshi, R.	Quality Assurance Manual for Higher Education in Pakistan, Higher Education Commission Islamabad – Pakistan (year unknown) http://qa.nust.edu.pk/downloads/Quality_Assurance_Manual.pdf
Bowen-Clewley, L., Cooper, K., Grannall, R.	A Comparison of Quality Management approaches for the Training and Vocational Sector in Seven Countries, Competency International Ltd, New Zealand, no year http://www.iaea.info/documents/paper4d2287df.pdf
CEDEFOP 2007	Fundamentals of a common quality assurance Framework (CQAF) for VET in Europe http://www.bmukk.gv.at/medienpool/18122/fundamentals_of_a_cqaf_for_v.pdf
Department of Education, Employment and Workplace Relations, Commonwealth of Australia	Comparisons of international quality assurance in vocational education and training, Australia 2009 http://www.innovation.gov.au/Skills/ResourcesAndPublications/Documents/ComparisonsIntQualityAssuranceSystems.pdf
EFQM 2012	Overview of the EFQM Excellence Model 2013, Brussels 2012 http://www.efqm.org/en/Home/TheEFQMExcellenceModel/TheEFQMExcellenceModel2013/tabid/428/Default.aspx
EU-Commission 2002	Declaration of the European Ministers of Vocational Education and Training, and the European Commission, convened in Copenhagen on 29 and 30

	November 2002, on enhanced European cooperation in vocational education and training http://ec.europa.eu/education/pdf/doc125_en.pdf
Kis, V. 2005	Quality Assurance in Tertiary Education: Current Practices in OECD Countries and a Literature Review on Potential Effects http://www.oecd.org/edu/highereducationandadultlearning/38006910.pdf
Lao People Democratic Republic, Ministry of Education 2011	Quality Assurance Manual for TVET Institutions http://www.unescobkk.org/news/article/lao-pdr-produces-tvet-quality-assurance-manual/
Majumdar, S. 2009, others	Integrating Quality Assurance in TVET System in Support of Qualifications Framework, Manila, on International Conference on “Harnessing Qualifications Framework Towards Quality Assurance in TVET” December 1-2, 2009, Manila, Philippines https://ronna-afghan.harmonieweb.org/education/Shared%20Documents/Integrating%20Quality%20Assurance%20in%20TVET_%282009,%20Colombo%29.pdf
Majumdar, S. 2011	Emerging Challenges and Trends in TVET in the Asia-Pacific Region, CSPC 2011 http://rd.springer.com/book/10.1007/978-94-6091-391-4/page/1
National Centre for Technical and Vocational Education and Training Development (NCTVETD) Romania	Quality Assurance in Romanian Technical and Vocational Education and Training, unknown date http://www.erisee.org/downloads/library_romania/framework/Brochure%20QA_EN.pdf
National Vocational and Technical Education Commission, 2011	Determination of Accreditation Status According to the NAVTEC Criteria For Vocational Training Institutes http://www.navtec.gov.pk/index.php?id=documents-data
National Vocational and Technical Education Commission, NAVTEC, 2011	Accreditation Manual, Standards (First Edition ~ 2011), Islamabad 2011 http://www.navtec.gov.pk/data/uploads/navtecaccmanual.pdf
National Vocational and Technical Education Commission,(NAVTEC) 2009	The National Skills Strategy 2009-2013, Islamabad, Pakistan www.navttc.org/
Othman, 2011	TVET Management Functions, in Management and Administration in TVET: Master of Education Portfolio. Mohd Zulfadly Othman (2011). Universiti Teknologi Malaysia. Johor Bahru, Malaysia http://www.scribd.com/doc/52444525/TVET-Management-and-Administration-Functions
Preddey, G. 2009	An Overview of Contemporary TVET Management Practice, in Maclean, D. Wilson (eds.), in International Handbook of Education for the Changing World of Work, , ChapterVI.9 http://de.scribd.com/doc/55773698/Contemporary-TVET-Management-Practice
Seyfried, E. European	Quality and quality assurance in technical and vocational education and

Training Foundation 2008	training http://www.etf.europa.eu/pubmgmt.nsf/%28getAttachment%29/B42F76F8CCFDFD1AC1257585003470CA/\$File/NOTE7QHD7T.pdf
Technical Education and Skills Development Authority (TESDA)	The TVET GLOSSARY OF TERMS Fourth Edition, TESDA Manila, 2010 www.tesda.gov.ph
The Gazette of Pakistan, 2011	National Vocational and Technical Training Commission Act, 2011 http://www.navttc.org/downloads/navttcact.pdf
TVET Reform Egypt, 2011	National Occupational Standardisation, Accreditation and Certification System (unpublished), Cairo 2011

9.2 Relevant Secondary Literature

Quality Assurance Concepts

P 01	CEDEFOP 2007	Fundamentals of a common quality assurance framework (CQAF) for VET in Europe http://www.cedefop.europa.eu/EN/publications/12912.aspx
P 02	CEDEFOP 2009	The development of national qualifications frameworks in Europe (September 2009) Luxembourg http://www.cedefop.europa.eu/en/files/6104_en.pdf
P 03	EFQM	Introducing the EFQM Excellence Model 2010 http://www.efqm.org/en/PdfResources/EFQMModel_Presentation.pdf
P 13	Cedefop , Publications Office of the European Union, Luxemburg 2011	Assuring quality in vocational education and training -The role of accrediting VET providers http://www.cedefop.europa.eu/EN/Files/3061_en.pdf

Implementation of QA Frameworks

P 04	Finnish National Board of Education Helsinki 2008	Quality Management Recommendation for Vocational Education and Training, Finland 2011 http://www.oph.fi/download/47655_quality_management_recommendation_for_vocational_education_and_training.pdf
P 05	The Committee for the Quality Standard in TVET Institutions, Ministry of Education, Lao PDR 2011	Quality Assurance Manual for TVET Institution http://www.unescobkk.org/news/article/lao-pdr-produces-tvet-quality-assurance-manual/
P 06	The Danish Evaluation Institute 2011	Referencing the Danish Qualifications Framework for Lifelong Learning to the European Qualifications Framework 2011 http://ebookbrowse.com/national-report-referencing-dk-qualifications-framework-to-efq-pdf-d205912922
P 07	MEDA-ETE Project Team,	Quality and quality assurance in technical and vocational

	European Training Foundation 2008	education and training , Luxembourg 2008 http://www.etf.europa.eu/pubmgmt.nsf/%28getAttachment%29/B42F76F8CCFD1AC1257585003470CA/\$File/NOTE7QHD7T.pdf
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Self- assessments Manuals

P 08	Romania	Quality Assurance Framework for VET Providers Self-Assessment Manual http://www.erisee.org/downloads/library_romania/framework/Self%20assessment%20Manual.pdf
P 09	Association of Professionals in Education and Children's Trusts, NAEIAC 2005 West Yorkshire , UK	School Self-evaluation: A Process of Change www.aspect.org.uk
P 10	European Centre for the Development of Vocational Training	Technical working group on quality in VET - An European Guide on Self-assessment for VET-providers (Final Version) <i>October 2003</i> http://libserver.cedefop.europa.eu/vetelib/2011/78741.pdf
P 11	HM Inspectorate of Education Livingston 2007, UK	How good is our school? http://www.educationscotland.gov.uk/Images/HowgoodisourschooltEpart3_tcm4-684258.pdf
P 15	European Network for Quality Assurance in Vocational Education and Training, 2011	Developing guidelines for supporting quality assurance in VET systems http://www.deqa-vet.de/ media/PDF_allgemein/TG_Report_Developing_guidelines.pdf

Asia related Documents

P 12	Ministry of Labour, Invalids and Social Affairs (MOLISA), Socialist Republic of Viet Nam, 2012	TVET Quality Breakthrough Vietnam- Background Paper http://www.regional-tvet-conference-vietnam.org/
P 14	Tertiary & Vocational Education Commission, Colombo 2009	National Vocational Qualifications Framework of Sri Lanka http://www.tvec.gov.lk/pdf/NVQ_Framework.pdf
P 16	Department of Education, Employment and Workplace Relations, Australia 2009	Comparisons of International Quality Assurance Systems for Vocational Education and Training http://www.innovation.gov.au/Skills/ResourcesAndPublications/Documents/ComparisonsIntQualityAssuranceSystems.pdf

10 Annex

A 1 Overview of Quality Management Concepts

Historically, Quality Management was used as an organisational strategy and as a method of management to check the quality of a business output through random checks at the end of the production process. Such checks should have ensured that the majority of the products leaving the production line were satisfactory; if problems did occur at a later stage, repairs could be affected or replacements provided. Such an old attitude for quality control tended to reflect a product-lead or product-orientated approach where the focus was on the product and the production process. Furthermore, the traditional concepts of Quality Management were ‘Top-Down’ approaches, allocating the responsibility for quality to the managerial level of an organisation.

In the last twenty years remarkable changes took place in the way how most businesses operate. The reasons were manifold. But increased competition and customer expectations, nationally and internationally, were the most driving one. Part of the change that has occurred has been the drive towards ‘Total Quality Management’ (TQM). Although many enterprises and TVET Institutions do not actually use the term TQM anymore, their philosophies in quality assurance & management are still linked with the principles of TQM.

The figure below shows relevant quality concepts in a rough time line, as they came in usage. With progression of time the concepts become more complex and sophisticated, and fulfilled increased expectations of customers and specific needs in a better tuned way. Especially the later arrived concepts of CQAF and EFQM proved to be more suitable for application in the service sector and for educational institutions as well. Hereafter the concepts will become explained in brief.

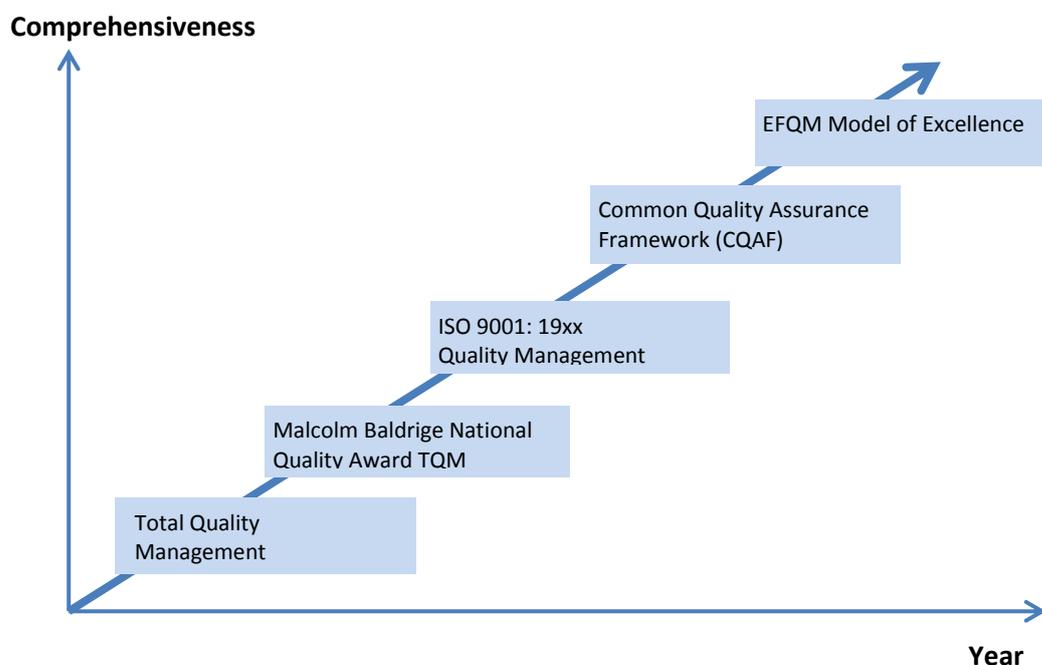


Figure 8: Major Quality Management Concepts of International Relevance

A 1.1 Total Quality Management (TQM)

Background

Total Quality Management (TQM) is a management approach that focuses on quality as the key to overcoming non-conformance in meeting the requirements of customers. From vocational training perspective, quality means that courses and their standards are appropriate to the award and that the methods adopted in delivering the courses are relevant.

Since the 1980's Total Quality Management was adopted by a high number of organisations. TQM requires the whole of the organisation to adopt the culture of quality. In a TQM organisation quality will dictate the decisions, tasks and processes. A TQM organisation is committed at all levels within every department/function to continuously improve quality. In order to fulfil this commitment every single employee in the organisation will need to accept the challenge of continual quality improvement. In return staffs received more rights, duties and responsibility to participate and influence the internal quality debates. As a consequence the prevailing 'Top-Down' approach (management driven) was now enhanced by a 'Bottom-Up' component '(strong staff involvement).

TQM has four guiding principles

- Put Customers first
- Make continuous Improvement
- Aim for 'Zero Defects'
- Focus on Training and Development.

Put Customers First

The quality of a product or service satisfies customer's needs and expectations. Whether a product or service is of high or low quality, will be decided whether consumer expectations were satisfied or exceeded. If customers are not put first, then customer expectations will be difficult to satisfy and consequently quality will not be achieved.

Make Continuous Improvement

The Japanese term "KAIZEN"³⁰ has contributed to this component. Kaizen believes that there are no limits to continuous improvement. This means that a TQM organisation will continuously strive to improve their products or services and increase the quality standards. A TQM organisation will also view change positively whether the change involves a process change or a change in customer needs and expectations. This is because changes will enable the organisation to develop and explore quality.

Aim for 'Zero Defects'

There are a number of reasons behind the aim to eradicate defects. Defects are expensive because they will lower the customer's confidence in the product. Also it is more expensive to rectify defects than it is to prevent them occurring in the first place. Zero defects can be achieved through a combination of quality assurance and quality control.

Training and Development

An organisation will need to train their employees to ensure that they understand the principles of TQM. A TQM organisation employee will need to understand how TQM is to be achieved or maintained and how they as an employee will ensure that the organisation emulates TQM. Unless each employee accepts and believes in TQM it will be difficult for the organisation to practice TQM.

Application of TQM

The application of TQM follows a most famous pattern, the PDCA cycle. The cycle describes a sequence of actions being mandatory for execution.

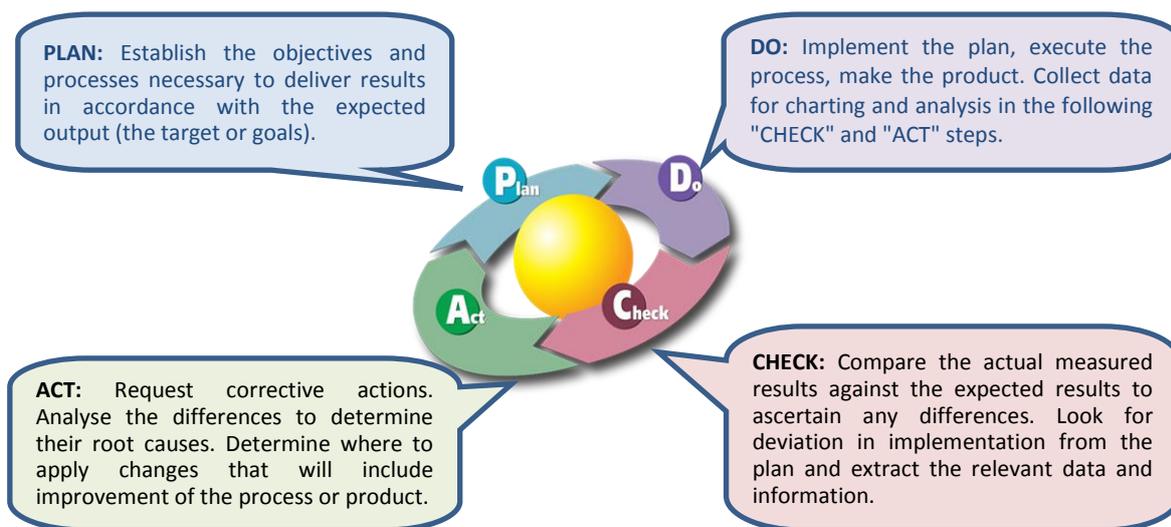


Figure 9: PDAC Cycle to perform TQM

Due to its grandiose simplicity and logic the concept is still of great value. As a matter of fact some of the key elements have been transferred and utilised in the later developed and more sophisticated QM-models as well.

A 1.2 Malcolm Baldrige National Quality Award

The Malcolm Baldrige National Quality Award (MBNQA)³¹ which began in 1988 acts as a vehicle to showcase exceptional US organisations, to share best practices, to facilitate organisation learning and growth, and to strengthen US competitiveness.

Criteria for performance excellence

The Baldrige Criteria for Performance Excellence provide a systems perspective for understanding performance management. They reflect validated, leading-edge management practices against which an organisation can measure itself. With their acceptance nationally and internationally as the model for performance excellence, the Criteria represent a

common language for communication among organisations for sharing best practices. The Criteria are also the basis for the *Malcolm Baldrige National Quality Award* process

The Baldrige criteria form a specific mutation of Total Quality Management (TQM).

The criteria for evaluation are divided into seven key categories

- Leadership
- Strategic Planning
- Customer Focus
- Measurement, Analysis and Knowledge Management
- Workforce Focus
- Process Management
- Results.

Each category is scored based on how well it is deployed throughout the organisation, the cycles of learning generated, and its level of integration within the organisation. An excellent way to improve TQM maturity is to use the criteria as a self-assessment and then compare the organisation's methods and processes with winners of the Baldrige award.

The introduction of the Baldrige Award for well performing companies was a novelty that time and stimulated enterprises to strengthen efforts and to use the reputation for PR-purposes. For participation in the competition prior assessment were made, always including site visits. This provided the valuable benefit to obtain results from self-assessment, as well as results from the third party assessment.

With respect to Technical Education and Vocational Training this concept has never played a prominent role. However, self-assessments conducted by the institution are already a substantial feature in this approach.

A 1.3 Quality Management according ISO 9001:19xx and 20xx

The International Organisation for Standardisation maintains a group of quality management system standards referred to as ISO 9000³². ISO 9001:2008, which is the latest edition, states that a company that has been audited and certified to be compliant with ISO quality requirements can say that it is "ISO 9001 certified" and follows formal business processes, including training. Organisations producing products, software or services implement ISO 9001 processes to improve their business operations in a competitive global marketplace.

Features

The ISO 9000 family has become an international reference for quality management requirements in business-to-business relations. This standard is primarily concerned with

'quality management', which means what the organisation has to fulfil

- Customer's quality requirements, and
- Applicable regulatory requirements, while aiming to
- Enhance customer satisfaction, and
- Achieve continual improvement of its performance in pursuit of these objectives.

The ISO 9001 standard is known as a "generic management system standard". "Generic" means that the same standard can be applied

- To any organisation, large or small, whatever its product
- Including whether its "product" is actually a service
- In any sector of activity, and
- Whether it is a business enterprise, a public administration, or a government department.

Eight Principles of Quality Management

Customer satisfaction is a mirror image of an organisation's ability to perform. That is why the first of the eight principles of quality management requires consistent customer orientation – because that's how you can tell who's 'Best in Class'³³.

The eight management principles taken from the guidelines for performance improvement also supply a basis for the challenge of managing an organisation in a targeted and systematic manner and to ensure continual improvement.

- Customer orientation
- (Corporate) leadership
- Involvement of people
- Process approach
- System approach to management
- Continual improvement
- Factual approach to decision making
- Mutually beneficial supplier relationships.

A reliable management system is indispensable when it comes to identifying opportunities and fulfilling the requirements of stakeholders.³⁴

The following figure demonstrates the sequence of process steps.

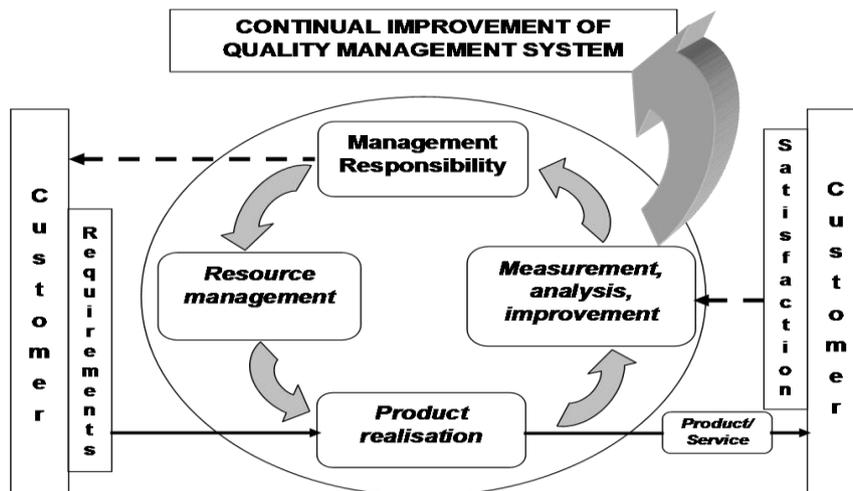


Figure 10: Sequence of Process Steps

Principle proceeding

The following six activities are to be identified, documented and to be implemented:

- Identify the processes needed for the QMS in the organisation
- Determine the sequence and interaction of these processes
- Determine the criteria & method needed to ensure that both operation and control of these processes are effective
- Ensure the availability of resources and information needed for these processes, including monitoring of processes
- Monitor measure and analyse the processes
- Implement actions necessary to achieve planned results and continual improvements of these processes.

The ISO 9001 standard, in its updated version from 2008, is of a rather complex and detailed structure. It is suited for service providers and targets especially for the modern sector where certification according international standards is of great importance. ISO strongly stresses the internal processes. However, implementation requires a very rigid, time- and cost intensive proceeding. The requirements regarding establishing and updating the documentation and PC-support are demanding, especially when it comes to certification.

TVET institutions in some developing countries used ISO 9001 when they started implementation of QM around 2000 or earlier. However, a crucial aspect hampering implementation of ISO in developing countries was the rigidity and complexity of the concept. Many projects experienced difficulties handling the processes, also due to limited personal capacity and competencies. Nowadays more flexible QM-approaches are favoured by TVET Institutions in developing countries, such as CQAF or EFQM.

A 1.4 The Common Quality Assurance Framework (CQAF)

The Common Quality Assurance Framework (CQAF)³⁵, developed by the EU as part of the Copenhagen process between 2003 and 2006 in support of quality assurance in vocational education and training, helps develop, monitor, evaluate and improve quality management systems and practices at different levels by means of a common approach and concrete tools.

Principles

As other existing assessment models (such as the EFQM), the CQAF model is based on continuous learning and systematic improvement of operations. The approach behind the model is the principle of continuous improvement known as the TQM Quality Cycle (Plan, Do, Check and Act). The model guides TVET providers to pay attention to aspects that are important in terms of quality, but it does not provide any answers about how providers should operate.

The CQAF model can be applied as a quality management framework for the national TVET system and individual TVET providers. Involvement of stakeholders is of the utmost importance when aiming to improve the quality of systems and operations.

The phases of quality assurance used in the model are shown in Figure below.

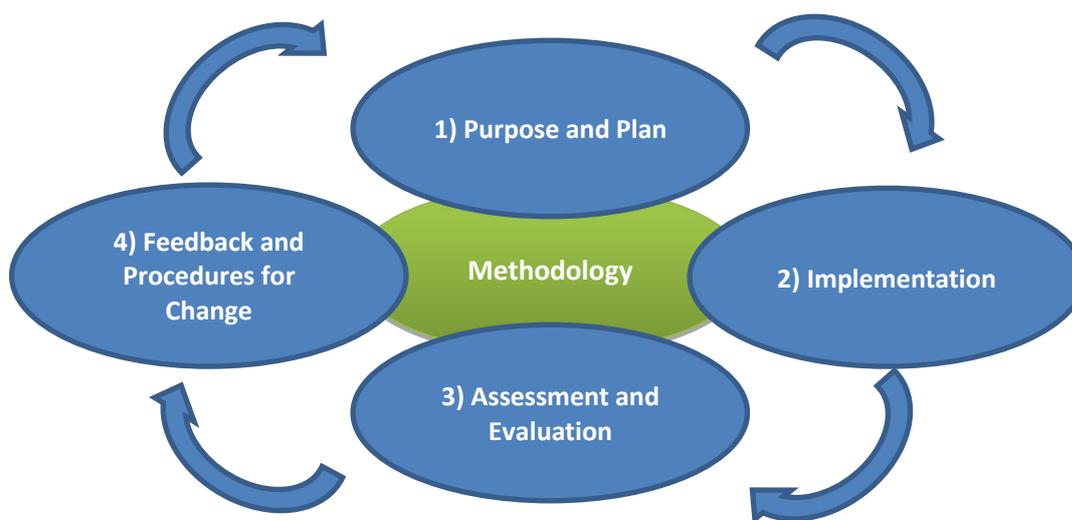


Figure 11: The Common Quality Assurance Framework (CQAF)

Elements

The basic elements of the model are planning (purpose and plan), implementation, evaluation and assessment & feedback and procedures for change, each of which is assigned a set of quality criteria. Different countries have made different choices on how to deal with quality assurance and improvement in vocational education and training. This is

why the model presents the core quality criteria such that they can be applied to different operating environments.

The model uses questions to draw attention to critical quality factors.

- **Purpose and Plan** refers to setting up clear, appropriate and measurable goals and objectives in terms of policies, procedures, tasks and human resources. In addition, the phase involves defining indicators to facilitate monitoring achievement of these goals and objectives.
- The essential aspect of **Implementation** is to establish procedures to ensure achievement of goals and objectives. Procedures may vary considerably at a provider level, such as in terms of development of the operational system and the organisational structure, resource allocation, involvement of stakeholders, or development of partnerships.
- **Assessment and Evaluation** cover evaluation of VET provision and assessment of the achievement of outcomes at system and individual levels. In general, the evaluation and assessment phase consists of two parts, i.e. collection and processing of data and discussions, evaluation and assessment based on this data. Evaluation requires designing the evaluation mechanism and defining its scope as well as providing information on the results of evaluation.
- **Feedback and Procedures for Change** form part of a systematic and goal-oriented process used to change plans and develop operations in order to achieve the targeted outcomes and for setting new objectives. The aim is to learn from information acquired in different ways, such as results, by discussing and analysing these together with key stakeholders. It is also possible to learn from good practices by benchmarking the user's own operations with these.

Methodologies how to proceed may differ. The key is for TVET providers to decide what type of methodology will best serve their needs. The quality assurance concept emphasises on self-assessment (self-evaluation) combined with external assessment. Other key aspects include how and in what roles customers, stakeholders and beneficiaries (i.e. enterprises, authorities, and students) participate in evaluation and how they are being motivated to take responsibility for evaluation. It is also important to determine the methods used to collect and analyse data and draw conclusions.

The CQAF model is in line with other currently applied quality management and assessment methods and it is possible to make use of other existing methods during its different phases of application.

Guiding principles

The guiding principles hereafter intend to provide a first clue regarding the subjects need to be touched by an institutional self-assessment. Each of the guidelines contains a 'call to action' and suggests what needs to be done (if it is not already in place) to create a CQAF compliant quality assurance system.

Table 4: Aspects for Implementation of a Common Quality Assurance Framework³⁶

1. Set clear rules for deciding who offers TVET provision	Countries manage the supply of high quality training by having clear systems to decide which organisations can offer courses and/or qualifications.
2. Recognise and build on existing internal arrangements	The European CQAF recommendations can be supported through the use of existing provider-based systems and VET quality assurance arrangements.
3. Set clear roles and responsibilities for different parts of the TVET system	At both provider and system level (either nationally or regionally) it is important to be clear about what each organisation is expected to do.
4. Identify what information and data should be collected and used in TVET system	There is extensive data on vocational training. The challenge is to identify and use a relevant core set of data consistently – with a focus on providers, inspectors, evaluators and government using the same definitions of the indicators and measures.
5. Define and implement a communication strategy	Whilst mainly relevant at the system level, there are clear needs for up-to-date, consistent and accurate information on the quality assurance process to be shared and understood.
6. Pilot initiatives and value success	Quality assurance can be achieved through recognising effective practice. Staged approaches which include pilot programmes, awards and funding can all play a part in recognising successful quality assurance systems.
7. Use feedback to improve TVET	TVET has to meet both employers' and learners' needs. Key to any quality assurance system is the way feedback is used to improve the national or regional system, and training providers systematically collect and use the experiences and feedback from learners and employers to modify and improve their provision.
8. Provide clarity over funding	Public and private sector funds are not limitless. The link between high quality provision and funding provides both an incentive as well as an accountability measure for quality assurance arrangements.
9. Ensure quality assurance covers all aspects of TVET provision	Quality assurance covers both the content of training and the administrative and staff arrangements which support teaching and learning. CQAF should be seen as all-encompassing.
10. Ensure TVET is founded on a strong involvement of external and internal partners and relevant stakeholders	TVET is based on effective partnerships. These exist between government, social partners and national stakeholders; employers and training providers; and learners and society. They create the foundation stone of the TVET system which gives it strength, relevance and acceptability.

Further elaboration on this topic would exceed the intended volume of this report. Additional sources of information are listed under References.

CQAF was specially designed and promoted by the EU for the development of the TVET sectors of European countries and was widely applied in the development of country-specific quality assurance systems. Because of its universal and widely applicable structure it became also of interest for developing countries. The concept is rather free of formal restrictions and can be modified according special needs. Due of its wide dissemination a good number of very worthy 'best-practice' cases are documented. Hence the CQAF approach must be taken seriously into account when establishing a QA system.

A 1.5 The EFQM Model of Excellence

The EFQM³⁷ Model of Excellence was introduced in the early 90s and is the most widely-used Business Excellence Framework in Europe. The Excellence Model takes a holistic view of an organisation and, when used as a diagnostic tool, it allows the organisation to assess its strengths and areas for improvement in detail across nine key areas.

The Excellence Model is a non-prescriptive framework that allows for enough flexibility to be adapted to any type of organisation, regardless of size or sector. In addition, the Excellence Model is considered an over-arching framework that can be used alongside other tools of QM.

The Model comprises of a set of three integrated components³⁸

- The **Fundamental Concepts** define the underlying principles that form the foundation for achieving sustainable excellence in any organisation.
- The **Criteria** provide a framework to help organisations to convert the Fundamental Concepts and RADAR thinking into practice.
- **RADAR**³⁹ is a simple but powerful tool for driving systematic improvement in all areas of the organisation.

Key benefits of the EFQM Excellence Model

The following can be regarded as key benefits:

- Holistic organisational approach towards performance improvement.
- Rigorous self-assessment process capable of external validation and benchmarking.
- Enabling of organisations to understand their strengths and areas for improvement within a systematic framework over a certain period of time.
- Promotion of benchmarking internally as well as against other organisations.

The 'Eight Fundamentals' Concept

The Fundamental Concepts of Excellence outline the foundation for achieving sustainable excellence in any organisation. They can be used as the basis to describe the attributes of an excellent organisational culture. They also serve as a common language for top management.⁴⁰

Adding value for customer

- Excellent organisations consistently add value for customers by understanding, anticipating and fulfilling needs, expectations and opportunities.

Create a sustainable future

- Excellent organisations have a positive impact on the world around them by enhancing their performance whilst simultaneously advancing the economic, environmental and social conditions within the communities they touch.

Develop organisational capacity

- Excellent organisations enhance their capabilities by effectively managing change within and beyond the organisational boundaries.

Harnessing creativity and innovation

- Excellent organisations generate increased value and levels of performance through continual improvement and systematic innovation by harnessing the creativity of their stakeholders.

Leading vision, inspiration and integrity

- Excellent organisations have leaders who shape the future and make it happen, acting as role models for its values and ethics.

Managing with agility

- Excellent organisations are widely recognised for their ability to identify and respond effectively and efficiently to opportunities and threats.

Succeeding through the talent of people

- Excellent organisations value their people and create a culture of empowerment for the achievement of both organisational and personal goals.

Sustaining outstanding results

- Excellent organisations achieve sustained outstanding results that meet both the short and long term needs of all their stakeholders, within the context of their operating environment.

Explanation of Enabler (E) and Result (R) Criteria

The model is measured within the two areas, 'Enablers' and 'Results'. Within an organisation 'Enablers' (leadership, people, strategy, partnerships, resources and processes) lead to 'Results' (people results, customer results, society results and business results). In return the results achieved will influence the setting of target figures for the enablers for the next period.

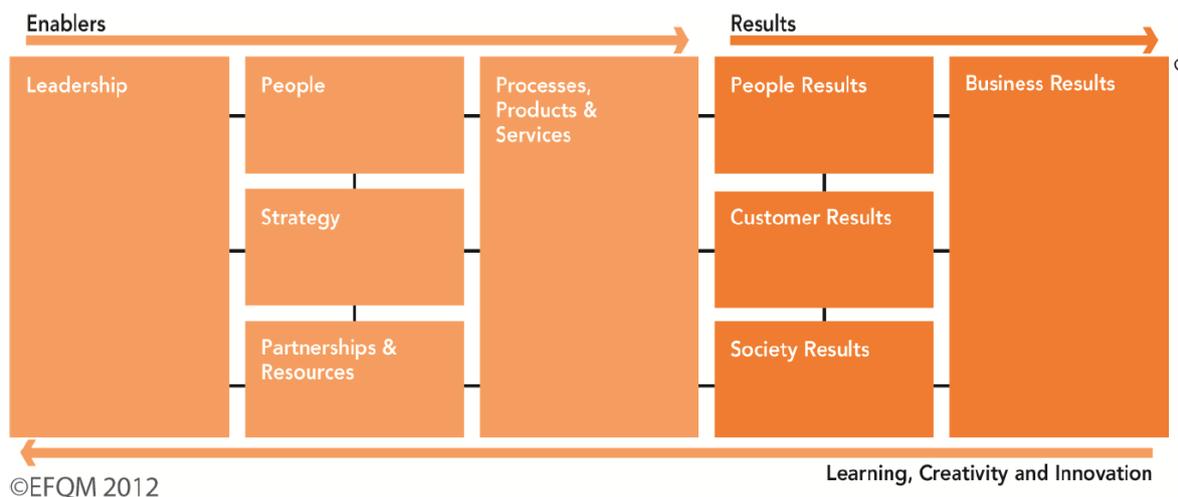


Figure 12: The Conceptual Structure of EFQM

Enabler Criteria 1: Leadership

Firstly, how leaders develop and facilitate the achievement of the Mission and vision of their institution. Secondly, how leaders - develop values required for long-term success, - implement these values via appropriate actions and - behaviours ensure that the organisation's management system is developed and implemented.

Sub criteria:

"Leitbild" vision, mission, strategic orientation

- Vision mission values defined
- School program prepared
- Leadership quality assessed through surveys/questionnaires
- Continuous own upgrading of leadership skills
- Staff can propose improvements through standardised system
- Innovative processes are stimulated and supported

- Leadership is assessing strategic objectives, organisational setup and process management and ensures their implementation (steering committee in place?).

Implementation of strategic results

- Organisational structure of school is in line/supports realisation of strategic objectives
- Leadership ensures identification, documentation and coordination of processes
- Vision, mission and strategic objectives are communicated and defended
- Leadership ensures measurement/evaluation of all results and their improvement.

Cooperation and communication

- Needs and expectations of relevant groups are taken into account
- Partnerships are built and maintained
- Quality development supported
- Quality objectives are communicated.

Modern leadership culture

- Listening to all types of staffs
- Active participation of staffs in quality development processes
- Recognition of staffs' performance
- Equal chances/gender mainstreaming
- Cooperation is supported on all levels
- Political and socio-cultural changes are observed and integrated into school management
- Sufficient personal and financial resources for change management are available
- Communication of relevant changes
- Implementation of change processes are ensured
- Change processes are evaluated/results are communicated.

Enabler Criteria 2: Strategy

How the organisation implements its mission and vision via a clear stakeholder focused strategy, supported by relevant - policies, - plans, - objectives, - targets and - processes.

Sub criteria:

Joint preparation of strategic objectives

- Strategic workshops

- Demand of relevant groups taken into account
- Strategic projects are defined, implemented and evaluated.

Indicators

- Indicators for achievement of strategic objectives are defined
- Internal performance criteria are defined (testing, own upgrading, absence ...)
- Satisfaction indicators for important groups (students, staffs, employers ...) are defined.

Assessment of strategic objectives

Strategic objectives are assessed and adjusted in accordance to

- Expressed needs of relevant groups
- Changed framework conditions (finance, regulations ...)
- Evaluations.

Strategic objectives are communicated and implemented through process management

- Implementation of information system
- Strategic orientations are communicated to staffs, groups and partners
- Support processes develop strategic objectives.

Enabler Criteria 3: People

How the organisation manages, develops and releases the knowledge and full potential of its people (staff) at an individual, team-based and organisation-wide level, plans these activities in order to support its strategy and organises the effective operation of its processes.

Sub criteria:

Systematic staff development

- Updated job descriptions for all staffs
- Staff policies are communicated (transparency)
- Personal planning in-line with strategic objectives
- Meetings with staffs focusing on staff development
- Definition of objectives as an instrument for quality development
- Assessment of staffs' opinions as an instrument for staff development
- Concept for introduction of new staffs.

Competencies of staffs are upgraded in accordance to strategic objectives

- Upgrading programmes exist

- Participation of staffs in these programmes and documentation of results
- Performance feedback for staffs
- Cooperative, team-oriented working climate.

Team orientation, own responsibility

- Support of team development
- Teams participate in decision processes
- Teams are independent and take-over responsibility.

Effective communication structure

- Systematic exchange of information
- Goal-oriented meetings/impact is measured
- Responsibilities for communication set
- Assessment of effectiveness of communication structures.

Recognition of staffs' performance

- Recognition/awards
- Laws for security and health are taken into account
- Remuneration system is transparent.

Enabler Criteria 4: Partnerships and Resources

How the organisation plans and manages its external partnerships and internal resources in order to support its strategy and the effective operation of its processes.

Sub criteria:

Partnerships are created and maintained

- New partnerships are created and maintained in accordance to strategic objectives
- Existing ones are maintained.

Effective, efficient and transparent use of financial resources

- Responsibilities and tasks in financial management are defined
- Transparency of planning and expenditure
- Acquisition of new financial resources
- Systematic controlling.

Responsibility for equipment, health and safety issues as well as environment

- Equipment is adequately maintained (rooms, machinery, etc.)

- Adequate equipment in classrooms and workshops is available (positive learning climate)
- Use of all equipment is assessed and optimised
- Maintenance and repair concept
- Environment concept/waste management
- Concept for health/security issues.

Information technology

- Concept for IT exists
- Responsibilities for maintenance etc. set.

Information is gathered, structured and used

- Information management system installed
- Information for better achievement of strategic objectives is gathered and used
- Validity and actuality of information is checked
- User-friendly information system (open access)
- Data security ensured.

Enabler Criteria 5: Processes

How the organisation designs, manages and improves its processes in order to support its strategy and fully satisfies its customers and other stakeholders by generating increasing value.

Sub criteria:

Processes are designed and put into action

- Process map exists (leadership, core processes, support processes)
- Most important processes are described and put into action (process management)
- Process indicators are set.

Processes are adjusted in accordance to changing requirements

- Processes are assessed and optimised on a regular basis
- Proposal system for process improvement.

Interests of various groups are taken into account

- Satisfaction of students, parents, enterprises, staffs measured
- Results of these investigations are used for improvements
- Customer orientation through permanent development of offers.

Realisation and improvement of education

- Education standards are taken into account
- Regulations, curricula etc. are taken into account and put into practice
- Transparent rewarding system
- Performance of the school is communicated
- Concept for systematic improvement of teaching exists (including evaluations)
- Goal-oriented support for students with different capabilities
- Concept for minimising absence of lessons and absence rates
- Career guidance concepts
- Security measures in place
- Counselling system for students with problems.

Public Relations

- Requests of interest groups are taken into account
- Satisfaction of other entities (following schools) with performance of school is measured.

Result Criteria 1: Customer Results

What the organisation is achieving in relation to its external customers.

Customer Results cover the following two sub-criteria that should be addressed:

Perception Measures

These measures deal with the customers' perception of the organisation (e.g. obtained from customer surveys, focus groups, vendor ratings, social media, compliments and complaints).

Customer perception measures may include evidence related to: overall image; products and services; product or service support and after-sale service; loyalty.

Performance Indicators

These measures are the internal ones used by the organisation in order to

- Monitor, understand, predict and improve the performance of the organisation and to predict perceptions of its external customers.

Performance indicators are the same as the perception measures

- Overall image,
- Products and services,
- Product or service support and after-sale service, and

- Loyalty.

Important issues

- Satisfaction of students
- Perception of school through students, parents, employers
- Measurement of performance by indicators.

Result criteria 2: People Results

What the organisation is achieving in relation to its people.

People Results cover the following two sub-criteria that should be addressed:

Perception Measures

These measures are of the people's perception of the organisation (obtained, for example, from surveys, focus on certain groups, interviews and structured appraisals).

People perception measures may include evidence related to motivation and satisfaction.

Performance Indicators

These measures are the internal ones used by the organisation in order to monitor, understand, predict and improve the performance of the organisation's people and to predict their perceptions.

Performance indicators for people may include those related to:

- Achievements
- Motivation and involvement
- Satisfaction
- Services provided to the organisation's people.

Important issues

- Staff performance indicators.

Result Criteria 3: Society Results

What the organisation is achieving in relation to local, national and international society as appropriate.

Society Results cover the following two sub-criteria that should be addressed:

Perception Measures

These measures deal with the society's perception of the organisation (e.g. obtained from surveys, reports, public meetings, public representatives, government authorities).

Society perception measures may include those related to

- Performance as a responsible citizen
- Involvement in the communities where it operates
- Environmental activities, including energy management, waste and nuisance control; preservation and sustainability of resources.

Performance Indicators

These measures are the internal ones used by the organisation in order to monitor, understand, predict and improve the performance of the organisation and to predict perceptions of society.

Performance indicators for society may include those listed above and in addition

- Supporting the community (e.g. employment, regeneration)
- Good media profile
- Effective partnerships with regulatory authorities
- Organisation awards.

Important issues

Indicators show changing (improving) perception of the school in public opinion.

Result criteria 4: Business Results

What the organisation is achieving in relation to its planned performance.

Business Results cover the following two sub-criteria that should be addressed. Depending on the purpose and objectives of the organisation some of the measures contained in the guidance for Key Performance Outcomes may be applicable to Key Performance Indicators and vice versa.

Business Outcomes

These measures are key results planned by the organisation which may include those relating to

- Financial outcomes and non-financial outcomes.

Key Performance Indicators

These measures are the operational ones used in order to monitor, understand, predict and improve the organisation's key performance outcomes.

They may include those relating to

- Processes

- External resources including
 - partnerships
 - finance
 - buildings
 - equipment and materials
 - technology
 - Information and knowledge.

Key issues:

- Individual indicators.

The EFQM model has gained increasing attention among professionals as a systematic tool for evaluation of institutions and organisations. Because of its universal and comprehensive character, this tool has proved its suitability for evaluation and self-evaluation especially in the TEVT sector throughout Europe.

Due to its multifunctional approach and the possible flexible way of handling, the model has become very prominent in the decade when TVET systems all over Europe were subject to modernisation and transformation.

In recent years many of the German States 'Bundesländer' have made the introduction of QM systems at their technical training institutions mandatory. EFQM served as reference model in many cases. (e.g. Lower Saxony).

It is understood that the countries QM-systems must be developed according to national specifics. However, it would be most opportune and advisable to rely on a reference model with high international reputation, such as the EFQM model of excellence.

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- ¹ Majumdar, S. 2009
 - ² Mclean, 2009, p. 1018
 - ³ <http://www.ivet.com.au/a/44.html#C>
 - ⁴ NAVTEC 2011, Accreditation Guide
 - ⁵ <http://en.wikipedia.org/wiki/Kaizen>
 - ⁶ http://ec.europa.eu/education/pdf/doc125_en.pdf
 - ⁷ http://ec.europa.eu/education/lifelong-learning-policy/eqavet_en.htm
 - ⁸ Majumdar, S. 2009
 - ⁹ Majumdar, S. 2009
 - ¹⁰ http://www.apacc4hrd.org/about_apacc/organizational/
 - ¹¹ APACC is providing a comprehensive Handbook for Accreditors and other tools for Accreditors (<http://www.apacc4hrd.org/handbook/chap1/>)
 - ¹² Up to 2009, fourteen (14) countries have signed a Memorandum of Agreement with APACC namely, Afghanistan, Bangladesh, Bhutan, Fiji, Indonesia, Korea, Maldives, Mongolia, Myanmar, Nepal, Pakistan, PNG, Philippines and Sri Lanka. The other CSPEC member countries are in the process of signing the MOA.
 - ¹³ Majumdar, 2009
 - ¹⁴ Department of Education, Employment and Workplace Relations, Commonwealth of Australia 2009
 - ¹⁵ See References
 - ¹⁶ Bowen-Clewley, Competency International
 - ¹⁷ Australia, Bahrain, Malaysia, New Zealand, Singapore, Sri Lanka and Philippines
 - ¹⁸ Lao PDR 2011
 - ¹⁹ http://qa.nust.edu.pk/downloads/Quality_Assurance_Manual.pdf
 - ²⁰ Department of Education, Employment and Workplace Relations, Commonwealth of Australia 2009
 - ²¹ Department of Education, Employment and Workplace Relations, Commonwealth of Australia 2009
 - ²² TVET Reform Egypt
 - ²³ NCTVETD Romania
 - ²⁴ Othman 2011; www.scribd.com/doc/.../Contemporary-TVET-Management-Practice
 - ²⁵ Lao PDR Ministry of Education 2011
 - ²⁶ Colombo Plan Staff College, Manila
 - ²⁷ UNEVOC; ETF
 - ²⁸ A very comprehensive Glossary is available from TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY, TESDA, Philippines (see references)
 - ²⁹ Derived from Lao PDR, Ministry of Education 2011
 - ³⁰ <http://en.wikipedia.org/wiki/Kaizen>
 - ³¹ <http://asq.org/learn-about-quality/malcolm-baldrige-award/overview/overview.html>
 - ³² More information can be obtained under [ISO 9001 Training | eHow.com](http://www.ehow.com/about_6504584_iso-9001-training.html#ixzz2CCtWBCAz)
http://www.ehow.com/about_6504584_iso-9001-training.html#ixzz2CCtWBCAz
 - ³³ <http://human.ca/intro-to-iso-9001.html>
 - ³⁴ DQS GmbH, Deutsche Gesellschaft zur Zertifizierung von Managementsystemen , www.dqs.de
 - ³⁵ CEDEFOP 2007, see http://www.cedefop.europa.eu/EN/Files/5168_3a.pdf
 - ³⁶ <http://www.eqavet.eu/qa/tns/building-blocks/introduction.aspx>
 - ³⁷ Formerly: European Foundation for Quality Management
 - ³⁸ EFQM 2012, www.efqm.org/en/pdfresources/overview_efqm_2013_v1.pdf
 - ³⁹ Results, Approaches, Deploy, Assess and Refine
<http://www.efqm.org/en/tabid/171/default.aspx>
 - ⁴⁰ <http://www.efqm.org/en/>