Quality in Technical Education

*Handbook Quality Assurance
Technical Institutions in Tanzania*

Content

INTRODUCTION

Why this handbook

In the framework of the project *"Improving the Labor market Responsiveness of Technical Education in Tanzania"* NACTE invited an expert in Quality Assurance to analyse the Quality Assurance processes and procedures used by NACTE and to analyse NACTE's readiness to monitor the quality systems at the various Technical Institutions. Based on the outcome of the analysis the expert would make recommendations about the development of a (possible) generic quality assurance framework for all Technical Institutions, linked to the quality system of NACTE and linked to the National Qualification Framework.

NACTE has been installed in 1997 by the National Council for Technical Education Act to oversee and coordinate the provision of technical education and training in Tanzania. In the period 1997 – 2014, NACTE had developed the processes and procedures to meet the requirements as set in the Act and to comply with the given task. It has undertaken a lot of activities and published many documents. At this moment, the majority of the Technical Institutions are registered (472 institutions).

The phase 1997-2014 is characterized by *controlling and guidance* of the Technical Institutions by NACTE as the main actor. It was the time, where there was a need to control both the existing and new coming institutions. However, after 17 years of activities the question is if NACTE still is on the right track? What was good and necessary in 1997 might not longer be necessary. Regional and international developments too have their influence on functioning of NACTE.
It was a good decision to organise a review of the processes, procedures and documents of NACTE. It is the right time to see what changes may be needed, what improvements can be made. Based on document analysis and interviews with the departments, subject boards, ministry and institutions (CBE) the consultant had formulated his conclusions and recommendations. It became clear that NACTE is standing on a crossroad and has to make decisions for the future. What is the direction for NACTE to go?

In the Act from 1997, the following tasks are given to NACTE:
1. to register and accredit technical institutions capable of delivering courses;
2. to register technical teachers and other qualified technicians;
3. to assist technical institutions in the transmission of knowledge, principles and training in the field of technical education and training for the benefit of the people of Tanzania;
4. to assist technical institutions in the overall development of the quality of education they provide and to promote and to maintain approved academic standards;
5. to establish and make awards in technical education which are consistent in standard and comparable to related awards in Tanzania and internationally;
6. to ensure that the quality of education required for the awards is met and maintained throughout the duration of the delivery of the course;
7. to assist technical institutions in their development by introducing and developing policies and procedures that will allow institutions attain greater autonomy in the delivery of courses;
8. to advise the government on the planning and development of technical education including matters relating to manpower planning, staffing, budgetary and capital provision, the efficiency of the sector and the development of the curriculum;
9. to review technical education and training policies from time to time in the light of changing technologies and economic development;
10. to accept in partial fulfillment of a course of the study leading to the Council's awards such periods of learning and training as it may recognize as being equivalent in outcome to that award;
11. to co-operate with other bodies and organizations for such purposes as the Council may from time to time deem to be appropriate to achieve its objectives;
12. to advise the Minister on the grant of autonomy to any accredited technical college
13. to appoint moderators for all validated courses leading to the council's award;
14. to appoint the members of its Constituent Boards and Commit
15. to receive income and undertake expenditure as maybe necessary or appropriate for the discharge of its functions;
16. to introduce any measures and procedures which may be necessary for the furtherance of the objectives of the Council.

Looking to the Act the following clusters of tasks can be made:
- Formulating standards for the Awards (the National technical Awards)
- Registration and accreditation of TI's
- Support and guidance of the TI's
- Advising the Minister
- Registration of Technical Teachers

May be the most important task in the beginning was the formulation of the National Technical Awards (NTA). The Council has defined and established a range of National Technical Awards (NTA) to be conferred on graduates of technical education and training upon successful completion of their respective studies in various technical fields. The NTA are competence/outcomes based defined according to specific levels of achievement and designed to testify that the holder of the award possesses the requisite knowledge necessary to apply competently the knowledge and skills described in the relevant occupational sector.

After the document analysis and the interviews with stakeholders, the following was concluded:
- *The assessment system is seen as too bureaucratic and too complicated.*
  Looking at the processes and procedures for registration and accreditation, one can only conclude that the process is bureaucratic and complicated. The system is not based on real self-assessment. The role of the expert team is more "box ticking" instead of acting as accountant, consultant and adviser. The whole system should be more simplified.
- *The role of NACTE and the institutions are not balanced.*
  The role NACTE is playing in the process of registration and assessment is not in balance with the role of the institutions. The impression exist that the TI's are working for NACTE and NACTE is prescribing what the TI's has to do. There is not always a good balance between the responsibilities of the TI's and the responsibilities of NACTE.
- *The system is not user-friendly.*
  The whole procedure is not direct user-friendly, nor for NACTE and its experts nor for the institutions.
- *The burden for the institution and NACTE is too high*
  Although more than 450 institutions are registered, still many others are to come. Furthermore, many programs have to be validated. Looking at what NACTE is requiring from the institutions, the only conclusion is that for the institutions the burden is too high. In addition, the burden for NACTE becomes in this way too high as well. The question is: is it possible to develop an assessment system "light" that is efficient and effective, but saving time and money?
- *The documents have to be revised.*
  Analysing the documents; it became clear that some of the documents were out-dated and should be rewritten. It also became clear that the documents were sometimes difficult to understand. Also the assessment tools needed to be reviewed to give the assessment items reasonable weights.
- *The tasks for registration/accreditation and support/guiding are not clearly distinct and separated.*
  Between support activities and assessment there must be a clear separation, a Chinese wall should be build. It is not acceptable to have support and assessment in the same hand. When one has supported an institution to develop a curriculum, one should not be involved in the assessment of the program. It will be difficult to call a program weak and not satisfactory, when one has helped to build the program.

For streamlining of the processes and procedures for Quality Assurance and Quality control, the decision was made to develop a handbook both for the institutions and for NACTE. The handbook for the Technical Institutions is an instrument to develop a quality assurance framework inside the institution. It will contribute to harmonization of the quality assurance at institutional level and it will bring the QA in the institutions in line with regional and international developments. Furthermore, the handbook is a powerful instrument to support the change in Quality Assurance from control orientation towards an improvement orientation. The handbook is a toolkit to prepare the Technical Institutions for external assessment.

Parallel to the development of the handbook for the Technical Institutions, a handbook for NACTE is developed. This handbook replaces[1] the current approach of NACTE in the field of accreditation, validation and approval. The handbook will bring NACTE in line with the regional and international

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[1] The handbook is at this moment not yet officially endorsed. The handbook and the proposed new approach will have a try-out in the coming pilot project. This draft of the handbook will be used by the institutions in the pilot project. This means that in the text *replace(s)* has to be read as *Intended to replace*

developments. Just as for the Technical institutions, the handbook will support the change from a bureaucratic, control approach to an improvement oriented approach. And last but not least, the handbook will lighten the burden of NACTE.

The handbooks are based on the IUCEA handbook A *Roadmap to quality*[2]. This handbook is adapted to the Tanzanian context of Technical Education. The academic standards, as formulated by NACTE and the specific topics for the Technical Institutions are included in the handbook.

The handbook of the Technical Institutions and the handbook of NACTE are each other's mirror image. The content of the one is mirrored in the content of the other. The handbook of the institutions is the basis for the internal Quality Assurance inside the institution, but is also the instrument to prepare for the external assessment by NACTE. The handbook for NACTE is the basis for the institutional accreditation, program accreditation and the quality audit.

How to use it
The Handbook "*Quality in Technical Education*" is divided in 7 chapters.
- *Chapter 1* describes the relation between NACTE and de TI's. It offers the rationale for the way of monitoring the quality in the Technical Education
- *Chapter 2* shows the relation between internal quality assurance (responsibility of the Technical Institutions) and external assessment (responsibility of NACTE).
- *Chapter 3* raises the question *what is quality,* and provide some theory and background. This chapter can be used by the QA-officer to promote quality awareness in the institution.
- *Chapter 4* contains the process of registration both of new institutions and new programs
- *Chapter 5* aims at the Implementation of a Quality Assurance system and is especially useful for the Quality Assurance Coordinators for the development and installation of an Internal Quality Assurance (IQA) system. It shows how to conduct a self-assessment of the IQA-system. This self-assessment is also a preparation for a Quality Audit by NACTE.
- *Chapter 6* offers an instrument to discover the quality of the institution by mean of a structured self-assessment. This self-assessment is also a preparation for an Institutional accreditation by NACTE.
- *Chapter 7* offers the department the instrument of self-assessment of the program(s). This self-assessment is a preparation for the Program accreditation by NACTE.

The handbook "*Quality in Technical Education*" aims to support the Technical Institutions in Tanzania in:
- Implementing good practices for quality assurance.
- Applying the standards and criteria, as formulated by NACTE.
- Developing an adequate IQA system that fits international developments.
- Discovering their own quality by offering self-assessment instruments for IQA, the program, and for the institutions as a whole.

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[2]   *Inter-university Council for East Africa, A ROADMAP TO QUALITY, Handbook for Quality Assurance in Higher Education (volume 1,2,3 and 4)*

CHAPTER 1: NACTE AND THE TI'S

1.1. Introduction

The National Council for Technical Education (NACTE) was established by Act of Parliament Cap 129 to oversee and coordinate the provision of technical education and training in all non - university institutions in Tanzania. Technical education and training in this context is defined as: "*education and training undertaken by students to equip them to play roles requiring higher levels of skills, knowledge, understanding and attitudes/ethics and in which they take responsibility for their areas of specialization.*" This scope of NACTE covers all tertiary education and training institutions other than universities and their affiliated colleges, delivering courses at technician, semi professional and professional levels leading to awards of certificates, diplomas degrees and other related awards. NACTE has under its ambit 472 institutions and has audited and registered all of them.

The mandate of the National Council for Technical Education as derived from Cap 129 is threefold and may be summarized as follows:
- *Regulatory Function:* to establish the regulatory framework for technical education and training, leading to quality assured qualifications;
- *Quality Assurance Function:* to assist technical institutions to improve and maintain the quality of the education they provide and to ensure that their programs meet labor market demand, by guiding and monitoring their adherence to the regulatory framework; and
- *Advisory Function:* to advise both Government and technical institutions on the strategic development of technical education and training.

These three aspects are interrelated and together make up the core functions of NACTE. The key issues that NACTE is required to address include:
- To register and accredit both public and private technical education and training institutions capable of delivering courses;
- To register technical teachers (teaching staff in technical institutions);
- Ensure that the quality of education required for the NACTE awards is met and maintained throughout the duration of the delivery of the course (monitoring and evaluation);
- To ensure the relevance of technical education and training to labor market demand;
- To institute systems of quality control and quality assurance in technical education and training; and
- To maintain databases on technical education and training, which will serve as a source of information needed by the Government and other stakeholders for strategic development of technical education and training in Tanzania.

From the above functions it is clear that NACTE's core business is to establish, sustain, regulate and uphold standards in technical education in Tanzania. As a regulator, NACTE has established a framework that sets the quality standards for technical education and training. All developed procedures leading to registration and accreditation of institutions as well as the adoption of a Technical Education Qualifications Framework are intended to sustain and uphold standards in technical education in Tanzania. NACTE has formulated its vision as "*To establish a well organized efficient and effective system of national qualifications and excellence in the delivery of technical education and training, and the resulting output*

And formulated its mission as "*To establish and operationalize policies, regulations and procedures for setting and maintaining standards and quality of technical education and training and advising the Government on the strategic development of the sector.*" The mission statement is translated into the following three basic objectives:
- To establish and operationalize policies, regulations and procedures for setting and maintaining standards and quality of technical education and training;
- To assist technical institutions to achieve and maintain high quality of education and training; and
- To advise the Government on the strategic development of technical education and training.

The guiding theme for the National Council for Technical Education is "*Striving for world-class excellence in technical education and training*". NACTE's employees are guided by the following core values:
- Upholding professional standards and moral ethics;
- Ensuring stakeholders participation in NACTE operations;
- Commitment and self motivation towards achieving NACTE's goals,
- Objectivity, transparency and public accountability;
- Social responsibility, and

- Judicious application of ICT.

NACTE is cognizant of and fully accepts its responsibility of contributing significantly towards the realization of the Tanzania vision 2025 which envisages Tanzania to be a nation with high quality livelihood; a nation which produces the quantity and quality of well educated people sufficiently equipped with requisite knowledge and skills to solve the society's problems, meet the challenges of development and attain a strong and competitive economy. These aspirations of the country can be realized, to a greater extent, with the availability of a technical education and training system, which the Council is endeavouring to establish, capable of producing a critical mass of high quality technicians and professionals required to effectively respond to and manage development challenges of our nation at all levels. Since the start of the activities, NACTE has done what was necessary to assure the quality of technical education in Tanzania. The most important task in the first years was the formulation of the National Technical Awards (NTA) (see section 1.2). In the period 1997 – 2014, NACTE has developed the processes and procedures to meet the requirements as set in the Act and to comply with the given task. It has undertaken a lot of activities and published many documents. At this moment, the majority of the TI's are recognized (472 TI's). Controlling and guidance of the TI's with NACTE as the main actor characterize the phase 1997-2014. It was the time, where there was a need to control both the existing and new coming TI's. However, after 17 years of activities NACTE is confronted with the following questions:
- How can we simplify the system?
- How can we make the system user-friendlier?
- How can we ease the burden for NACTE and for the institutions?
- How to establish a better balance in responsibilities between NACTE and the institutions?
- How to make the system sustainable for the future?
In this handbook, NACTE shows the way forward and the approaches it will adopt in the near future.

1.2. NACTE and the National Qualification framework

To create a critical mass of intermediate and full professional human resources that can meet the economic and social needs of the country NACTE has defined and established a range and levels of awards in technical education (emphasis on theory) and training (emphasis on skills and technology).

The NACTE NTA system has seven levels linked to a three level National Vocational Training Awards (NVTA) system under the Vocational Education and Training Authority (VETA). This provides a ten level framework of Technical and Vocational Education and Training (TVET) qualifications. Each qualification on the NTA system has a broad competence level descriptor as shown in table 1:

Table 1: TVET Qualifications Framework

S/N	Qualification Level	Qualification Award	Competence Level Descriptors
1	NVA Level 1	Transcript	The holder of the qualification will be able to apply "basic vocational knowledge and skills"
2	NVA Level 2	Basic Vocational Certificate	The holder of the qualification will be able to apply "intermediate vocational knowledge and skills"
3	NVA Level 3	Vocational Certificate	The holder of the qualification will be able to apply "full / higher vocational knowledge and skills"
4	NTA Level 4	Basic Technician Certificate	The holder of the qualification will be able to apply skills and knowledge at routine level
5	NTA Level 5	Technician Certificate	The holder of the qualification will be able to apply skills and knowledge in a range of activities, some of which are non-routine and be able to assume operational responsibilities.
6	NTA Level 6	Ordinary Diploma	The holder of the qualification will be able to apply skills and knowledge in a broad range of work activities, most of which are non-routine.
7	NTA Level 7	Higher Diploma	The holder of the qualification will be able to apply knowledge, skills and understanding in a broad range of complex technical activities, a high degree of personal responsibility and some responsibility for work of others

8	NTA Level 8	Bachelors Degree	The holder of the qualification will be able to apply knowledge, skills and understanding in a wide and unpredictable variety of contexts with substantial personal responsibility, responsibility for the work of others and responsibility for the allocation of resources, policy, planning, execution and evaluation.
9	NTA Level 9	Masters Degree	The holder of the qualification will be able to display mastery of a complex and specialised area of knowledge and skills, employing knowledge and understanding to conduct research or advanced technical or professional activity, able to work autonomously and in complex and unpredictable situations
10	NTA Level 10	Doctor of Philosophy	The holder of the qualification will be able to apply knowledge and understanding and do advanced research resulting into significant and original contributions to a specialised field, demonstrate a command of methodological issues and engaging in critical dialogue with peers, able to work autonomously and in complex and unpredictable situations.

1.3 NACTE and the Job profiles

So far, NACTE has published so called *qualification standards*. About 36 *qualification standards* are mentioned on the website of NACTE. The qualification standards provided the following information:

- The occupational profile
- Name of the qualification
- Purpose of the qualification
- Competence level descriptors
- Total credits
- Principal learning outcomes
- Assessment criteria
- Essential knowledge
- Essential skills
- Essential tools.

For an example of a *Qualification standard* see the example of the Basic Technician Certificate in Accountancy in appendix 1.

Instead of using *Qualification standards*, which might lead to some misunderstanding, the word to be used will be *Job profile.* This is strongly connected to the idea of Competence-based education and training.

Competence-based education and training is an approach to instruction based on the philosophy that *"given appropriate instruction, time and conditions, almost all learners can and will learn most of what they are supposed to learn (includes what they are taught and what they achieve from self learning.)"* In Competence based learning the emphasis is on outcomes of learning based on performance standards, which have to meet the *skills required by an employee at the workplace*. An outcome is a result of the learning process. It is anything that one can demonstrate after undergoing a learning process. For instance one can demonstrate the ability/competence to repair a car or construct a brick house. One can show also that he/she understands how to solve problems, plan, communicate well or collect and sort out information. Measurable learning outcomes, including their assessment criteria are the key features of Competence-based education and training. Therefor, a job profile, containing all-important elements is a prerequisite for the design of a curriculum.

A *job profile* provides the institution with a description of the profession and contains the expectation of the employers concerning the graduate. A Job profile contains

- The name of the qualification
- Description of the profession
- The competence level descriptor NQF,
- The Expected Learning Outcomes
- The Assessment Criteria.
- Total number of credits

An example of a job profile is given in table 2

Table 2: example of a job profile

Job Profile	Accountancy
Name of the Qualification	Basic Technician Certificate in Accountancy NTA level 4
Description of the profession	The employee will - record accounting data, - process receipts/payments using book-keeping and ICT skills, - handle documents and provide customer care on day to day basis.
Competence level descriptor	The holder of the qualification will be able to apply skills and knowledge at routine level
Number of credits	120
Expected Learning Outcomes	1. Apply bookkeeping and arithmetic skills to record accounting data and process receipts and payments 2. Apply communication and customer care skills to handle clients 3. Operate ICT instruments to capture data and communicate information 4. Apply record keeping skills to handle documents
Assessment Criteria	ELO 1 • Arithmetic principles are applied in handling accounting data; • Bookkeeping principles are applied in recording accounting data; and • Relevant Regulations and procedures are used in processing receipts and payments. ELO 2 • Communication skills are applied in carrying out daily operations; • English language skills are applied in daily operations; and • Customer care techniques are used in handling internal and external customers. ELO 3 • ICT knowledge and skills are used in operating computers and other office equipment; • Word processor, spread sheets and accounting packages are applied to capture data; and • ICT tools are applied in communicating information. ELO 4 • Information handling techniques are demonstrated in carrying out daily operations; • Record keeping skills and procedures are applied to classify, store and retrieve documents; • Record keeping procedures are used to maintain records movement register; and • Safety and security procedures are observed in handling documents.

1.3.1 The content of a job profile

1. Name of the Qualification
The job profile starts with the name of the qualification, for example Basic Technician Certificate in Accountancy, NTA level 4

2. The description of the profession:
The description at least contains the following:
• A statement on typical context where the graduate with the particular qualification will work, for example, in farm estates, hospital laboratories, manufacturing concerns, retail outlets, and so on;
• A statement on the level at which graduates is expected to function, by indicating the level of degree of independence in the workplace, as per NTA Level Descriptors.

3. The competence level descriptor NQF
The job description reflects the clusters of attributes as indicated in the specification of NTA Competence Level Descriptors, which include:
   • Knowledge and Understanding;
   • Practical Skills;
   • Communication Skills; and
   • Wider abilities for executing workplace tasks / functions effectively.

4. The number of credits

The job profile contains the number of credits. At least 120 for each level and 240 for NTA level 7.

5. *Expected Learning Outcomes*
In the Job profile the expected learning outcomes are formulated. Expected Learning Outcomes are statements of the knowledge, skills and attitude that a learner is able to demonstrate on completion of a learning process. Learning Outcomes can be separated in three domains

- Cognitive learning (Knowledge)
- Psychomotor learning (Skills)
- Affective learning (Attitude),

In the taxonomy of Bloom, the teaching and learning hierarchy is important for the correct and consistent building of the knowledge side of the Learning Outcomes. The cognitive domain comprises six levels starting with the easiest level *remembering* and ending in the top with *creating as* the most complex level of the taxonomy (see figure 1). Formulating Expected Learning Outcomes one have to formulate actions, starting at the lowest level of the taxonomy. See, for examples, figure 2.

Figure 1: Revised Taxonomy of Bloom (Anderson and Krathwohl 2001)[3]
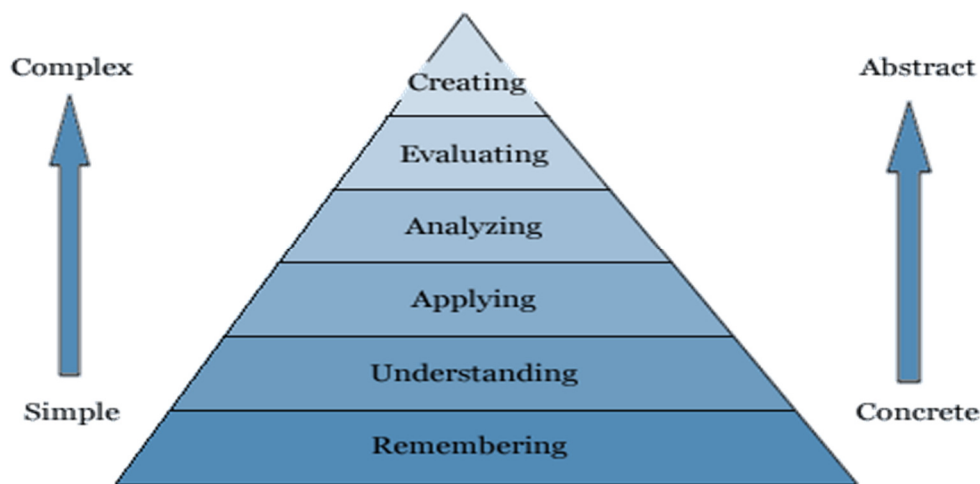
Figure 2: Action words for the cognitive domain (Anderson and Krathwohl 2001)

Krathwohl, D.R., Bloom, B.S. and Masia, B.B. Taxonomy of Educational Objectives: Handbook II. The Affective Domain.N.Y., David McKay Company, Inc. 1964. In: Van der Klip Cees: Profession based education and training. ,A Teachers guide, Draft 2015

Remember	Understand	Apply	Analyze	Evaluate	Create
Describe	Explain	Complete	Compare Contrast	Justify	Plan
Name	Compare	Use	Examine	Assess	Invest
Find	Discuss	Examine	Explain	Prioritize	Compose
List	Predict	Illustrate	Identify	Recommend	Design
Relate	Outline	Classify	Categorize	Rate	Construct
Write	Restate	Solve	Investigate	Decide Choose	Imagine
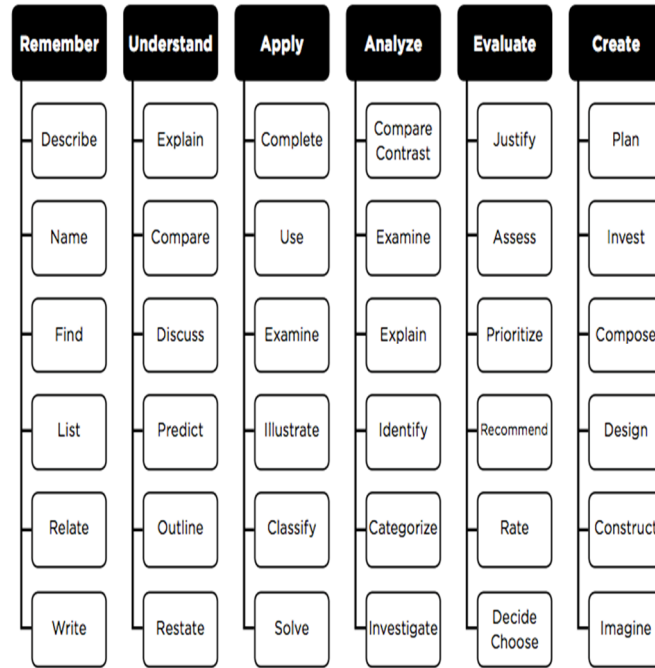
Learning outcomes can be divided into:
- *Knowledge*
  Knowledge means the outcome of the assimilation of information through learning. Knowledge is the body of facts, principles, theories and practices that is related to a field of work or study. Knowledge is described as theoretical and/or factual;

- *Skills*
  Skills mean the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills are categorized as:
  - *Cognitive skills* (involving the use of logical, intuitive and creative thinking);
  - *practical skills* (involving manual dexterity and the use of methods, materials, tools and instruments);
  - *interpersonal skills* (the way of communication, cooperation, etc).

- *Attitude*
  Attitude means a settled way of thinking or feeling about something. Four major components of attitude are: affective (emotions or feelings), Cognitive (belief or opinions held consciously), Conative (inclination for action), Evaluative (positive or negative response to stimuli).

Figure 3 shows the relationships between knowledge, skills and attitude.

Figure 3: Categorisation of Learning Outcomes

Competencies

Individual characteristics Learning outcomes

Knowledge Skills Attitude

cognitive skills practical skills Inter-personal skills
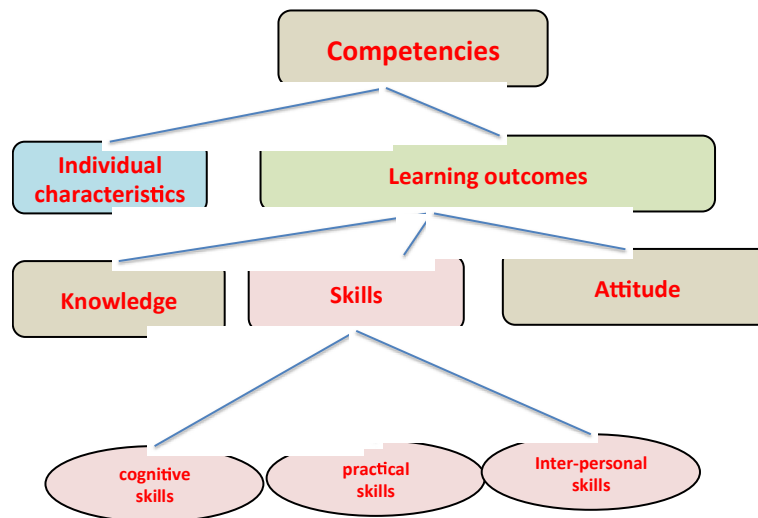
In formulating learning outcomes, a distinction has to be made between *generic* learning outcomes and *subject specific* learning outcomes. *Generic learning outcomes* are those outcomes expected from all academic trained graduates. Examples of generic learning outcomes are: problem solving, communication skills, and ability to cooperate. A key characteristic of a *generic learning outcome* is that you have to practice it in a specific field. *Subject specific* learning outcomes are those that are typical to that discipline.

6. Assessment Criteria
Assessment criteria are statements that clearly indicate what learners are expected to do in order to demonstrate that they have successfully realized an Expected Learning Outcome. They are required mainly to assist the institutions in developing corresponding assessment.

1.3.2 The role of NACTE concerning the Job Profiles
It is an important task of NACTE to keep a database of the job profiles. At this moment 36 Job profiles are published on the website. In cooperation with the employers and the institutions, NACTE will develop missing job profiles and keep the already formulated job profiles up to date. NACTE will use the document *NACTE, Procedures for Occupational Analysis towards Setting of Qualification Standards, June 2010* for the formulation of job profiles. The basic steps will be:
• Organising a meeting between employers, professional bodies and TI's
• Discussing the profession(s) where the future graduates will be employed
• Developing descriptions of the professions
• Describing the requirements for the professions
• Translating the requirements into expected learning outcomes
• Formulating the assessment criteria
• Deciding upon the link with the NQF
 The formulated job profiles are a starting point for the institution in curriculum design, might be of new programs, might be for the revision of an old program.

1.4 NACTE and the current process of quality monitoring
Section 5 (1) (a) of the National Council for Technical Education Act, 1997 empowers the Council to register and accredit technical institutions capable of delivering courses. Registration and accreditation are mandatory [Registration Regulations (Government Notice No. 279 published on 26/10/2001) and Accreditation Regulations (Government Notice No. 41 published on 18/01/2002)].

1.4.1 Registration
Registration is a process in which NACTE satisfies itself that an institution has been legally established and is viable for offering programs sustainably. An institution applying for registration has to meet the

following requirements[4]:
- Provide evidence that the institution meets the *legal requirements* of establishing. This means it posses a document showing the establishment and ownership of the institution such as: Constitution; Charter; Articles of Association; and Business license (where applicable).
- The applicant institution should also provide evidence of the extent to which the institution is *viable* to deliver training programs and is able to provide the intended training.

1.4.2 Accreditation

Accreditation is an approval of the Council granted to an institution on account of having programmes and quality assurance system that ensures the provision of set qualifications and educational standards. Accreditation is a continuous process, the heart of which lies in periodic self-appraisal by each institution. Accreditation is renewable after every five (5) years. Institutions are required to process for accreditation within six months after being granted Full Registration and must be accredited within five years, otherwise their registration will be withdrawn by the Council.

The main purposes of accreditation:
• To assure the educational community, the general public and other stakeholders that an institution:
- Has clearly defined objectives appropriate to technical education and training;
- Has established conditions under which training achievements can reasonably be measured;
- Is organized, staffed, well resourced and sustainable and that it can be expected to continue to be so; and
- Meets educational and training standards demanded by the relevant occupational sector.
• To encourage institutional development and improvement through self study and periodic evaluation by qualified peer professionals.
• To develop and use NACTE standards to assess and enhance educational quality and institutional performance.
• To promote interchange of ideas among public and private institutions through various forums such as annual meetings, publications and other forms of information dissemination.
• To protect institutions against encroachments which might jeopardize their educational effectiveness or academic freedom

Accreditation Requirement is the compliance with the accreditation standards[5]
1. Institutional Vision and Mission
2. Governance and Administration
3. Institutional Integrity
4. Institutional Effectiveness
5. Educational Programmes
6. Student Support and Development
7. Information and Learning Resources
8. Teaching and Supporting Staff
9. Physical Resources
10. Financial Resources
Furthermore, a well functioning Quality Assurance system is seen as a condition sine qua non.

1.4.3 Validation & approval

One of the key aspirations of the National Council for Technical Education (NACTE) was to establish in the country a well-organized, efficient and effective framework of national qualifications that ensure the quality and excellence of the delivery of technical education and training as well as its resulting outputs. In this respect, a qualification is considered to be a planned combination of learning outcomes which has a defined purpose or purposes, and which is intended to provide qualifying students with applied competence and a basis for further learning. It is the formal recognition of the achievement of the required number and range of credits and such other requirements at specific levels of the National Technical Awards (NTA) that have been established by the Council for the purpose.

The underlying philosophy behind curricula of technical institutions under NACTE is hinged on the requirement for all curricula to address the aspects of teaching and learning with adequate reflection of the needs and

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[4] NACTE, *Procedures for registering and accrediting Technical Institutions in Tanzania* ,
[5] NACTE, *Academic Quality Standards* , June 2010

interests of the employers, the profession, the learners themselves, the offering technical institution, the Government, the wider society, and the economy. As such, NACTE should validate/approve all curricula developed by/for individual technical institutions to confirm that they meet the prescribed standards and hence satisfy the requirements indicated above. That is one of the major activities of NACTE towards effective regulation of technical education and training in the country as mandated by the establishing Act [1]. In the document *Procedures for Curriculum Approval and Validation*[6], NACTE describes two ways of approval and validation:
- Approval and validation by the institution
- Approval and validation by NACTE.

In both cases, the question is whether the curriculum adequately addresses the needs of employers, profession and society. Furthermore whether the curriculum reflects the mission and vision of the institution.

1.4.4 NACTE and the quality audit
NACTE published three documents on Quality Assurance[7]. In these documents, NACTE emphasises the importance of a well functioning Internal Quality Assurance system and stresses the necessity of a Quality Management plan. Internal Quality Assurance is seen as a *conditio sine qua non* for accreditation. The institution is required also to ensure that it has in place a Quality Control (QC) and Quality Assurance (QA) mechanism. This entails having a sound Quality Control (QC) and Quality Assurance (QA) policy, Quality Management Plan and QC / QA committee for coordinating the QC and QA activities of the institution. This is a basic requirement for ensuring that the institution offers training leading to quality assured qualifications, a necessary condition for national and international recognition.

1.5. Quality monitoring in a new setting
Quality monitoring in the new setting aims at making the system user-friendlier and less bureaucratic. It will be less control oriented and more improvement oriented. Also the role of the TI's in the monitoring process will be a more active one. This will be done by putting more emphasis on the self-assessment by the institution. In table 3 the old and the new system are compared:

Table 3: Old and new system of quality monitoring

current		New	
Procedure	*Based upon*	*Procedure*	*Based upon*
Registration:	Procedures for Registering and Accreditation Technical Institutions in Tanzania	registratiom	Information and documents provided by TI
Accreditation (of the TI) • **Full** • **Provisional**	• Procedures for Registering and Accreditation Technical Institutions in Tanzania • Guidelines for Preparation of Quality Management Plan for Institutions Accredited by NACTE • Self Evaluation Study Guide • NACTE Academic Quality Standards • Performance Indicators for Assessment of Institutions	**Institutional Accreditation**	• Self assessment according guidelines in chapter 6 of the handbook for TI's • External assessment according chapter 6 of the NACTE handbook
Departmental recognition **Program approval** **Program validation**	Procedures for Curriculum Development and Review Procedures for Curriculum Approval and Validation	**Program accreditation**	• Self assessment according guidelines in chapter 7 of the handbook • External assessment according chapter 7 of the NACTE handbook
Quality assurance system	Is included in Institutional Accreditation. IQA system based on: • *Guidelines for Preparation of Quality Management Plan for Institutions Accredited by NACTE, June 2004*	**Quality Audit**	• Self assessment according guidelines in chapter 5 of the handbook

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[6] NACTE, *Procedures for Curriculum Approval and Validation, August 2004*
[7] a) Guidelines for Preparation of Quality Management Plan for Institutions Accredited by NACTE, June 2004
b)Framework for Institutional Quality Assurance, August 2004
c) Guidelines for Establishing Institutional Policies and Procedures on Quality Control and Quality Assurance, June 2010

	• *Framework for Institutional Quality Assurance, August 2004* • *Guidelines for Establishing Institutional Policies and Procedures on Quality Control and Quality Assurance, June 2010*		• Quality audit according chapter 5 of the NACTE handbook.

In the following chapters, the elements of the quality monitoring system are discussed:

1. Registration (Licensing)(chapter 4)
2. Institutional accreditation (chapter 5)
3. Program accreditation (chapter 6)
4. Quality Audit (chapter 7)

2. IQA AND EQA, TWO SIDES OF THE SAME COIN

Quality Assurance in Higher Education, including the Technical institutions has two elements:
- Internal quality assurance
- External monitoring and assessment.

In the case of Tanzania it concerns, on one side the responsibility of the Technical Institutions to assure the quality of the institution, the quality of the program with the final aim the quality of the graduate. On the other side the responsibility of the outside regulatory body NACTE to set standards for the quality and to check if the institutions meet the requirements set by NACTE in consultation with the key stakeholders.

2.1 Responsibilities of the institution

It is the responsibility of the institution to develop processes and procedures in such a way that it provides confidences to the stakeholders that it delivers competent graduates in an efficient and effective way. To achieve this, the institution needs to have:
- Appointed a Quality-officer and set up a quality center;
- Implemented a well functioning Internal Quality assurance system;
- A self-assessment of its IQA-system, every 5 years;
- A self-assessment of the institution, every 5 years;
- Validation of its programs on a regular base by means of self assessment of the programs .

The above-mentioned activities will show the strengths and the weakness of the institution and its programmes. The outcomes of the self-assessment will lead to a quality policy plan to tackle the shortcomings. The institution will report yearly to NACTE (via the QA-officer) about the state of the art of the Quality plan.

2.1.1. The QA-unit and the QA –officer

According to NACTE, an institution must have a Quality Assurance Committee to ensure quality policies and objectives are set, implemented and evaluated. NACTE describes a recommended Quality Management Structure for the institution.[8]

Organisational structure

Of course, there is no one system that fits all. A large institution has other needs than a small one.
But in general we can look at the following structure for Quality Assurance at the TI (figure 4):
1. At central level, the institution has installed or will install Quality Assurance Council. The president of the institution will chair the Council. Members of the QA-council are the deans of the departments. The role of the QA-committee is a decision making one. In the QA-council, all decisions concerning quality of the institutions are made.
2. At central level, the institution must have a Quality Assurance centre or Quality Assurance unit, headed by a QA-officer. The QA-centre or unit is established for the purpose of leading, supporting and coordinating quality assurance processes in all units of the institution. It should be acknowledged that administrative procedures vary from one Technical Education institution to another.

A high-ranking faculty member should run the QA-unit. He/she should have the expertise, knowledge and experience of quality assurance in Tertiary Education, and the ability to take over the reins of effective leadership. The manager of the quality assurance centre should also be administratively accountable to the President of the institution.

As for the staff required by the QA- centre/unit, this depends on the size of the institution and multiplicity of its facilities, and the extent of centralization of the responsibilities of the centre or their distribution to all departments and units of the institution. In any case, the procedures used in the quality assurance centres focus on the small size of the centre and its effectiveness, so the staff usually consist of two to five members, including the director of the centre, the administrative support team, secretary, and one or two specialists to whom certain responsibilities are assigned.

The QA-unit must act independently and autonomous, but is accountable to the QA-council. The role of the QA-unit is facilitating Quality Assurance activity in the institution at all levels.

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[8]   *NACTE, Guidelines for preparation of Quality Management Plan for institutions accredited by NACTE, August 2004.*

At faculty/departmental level, the institution should set up Quality Assurance committee. The dean of the department chairs the QA-committee. The role of the QA-committee is to take care of quality assurance at departmental level with support of the central QA-unit. Activities will be: self-assessment of the programs, preparation for accreditation, curriculum design, quality assurance of the programs, staff, student support, facilities etc.

Figure 4: QA at the institution
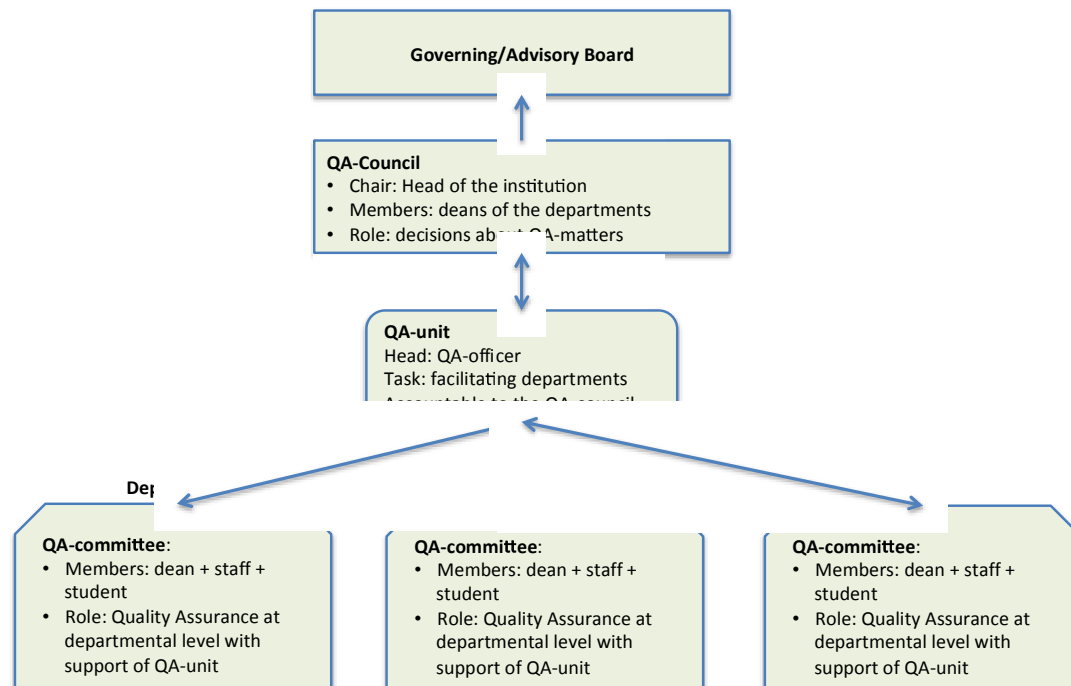
Task of the QA-officer and the QA-unit

A central QA-unit has been installed with the aim to enhance the quality of the institution. Although the responsibility for quality belongs to the academic community as a whole (managements, staff and students), the QA-unit plays a facilitating role. The tasks of a QA-unit concern the following fields:

- *Promoting quality awareness and a quality culture in the university.*
  Not all academics (management and staff) are aware of the need of quality assurance. There is resistance to innovations. The QA-unit has the mission to make clear that an institution will not survive without attention to quality. The QA-officer can use chapter 3 of this handbook as basic information for promoting quality awareness.
- *Development of a clear quality policy in the institution.*
  Although there will be some attention to quality (often on individual basis), a structured quality policy is missing in many cases. It is a task of the QA-unit to support management in the development of a quality policy plan, supported by the academic community. A Quality policy and quality strategy covers all activities the institution will use to improve quality, to enhance quality and to assure the quality of all core activities and the context of the core activities.
- *Implementation and maintenance of a robust Internal Quality Assurance system*
  In general, the institution will pay special attention to some topics to provide quality. However, a system with structured and continuous attention to quality assurance is often missing. It is the task of the QA-unit to analyse the current situation and to implement a robust system of IQA. In chapter 5 of this handbook, the QA-officer will find an instrument to promote the implementation.
- *Supporting general management to find out the quality of the institution and institutional management.*

While NACTE plans Institutional accreditation, it is important for the institution to prepare it self for the accreditation. However, when there is no external assessment, it is important to know the quality of the institution. Chapter 6 of this handbook offers the QA-officer the instrument to organise a self-assessment at institutional level.

- *Supporting departments in the self assessment process for discovering the quality of the programs*
  A self-assessment at program level is a powerful instrument to improve the quality and to assure the quality. It is an important task of a QA-unit to support the departments in the process of the self-assessment of the programs. Chapter 7 of this handbook offers the instrument for the support.
- *Organizing student evaluations*
  An important instrument for getting feedback on the quality of a program is student evaluation. Because student-evaluation should be compulsory through the whole institution, the QA-unit will play a role in the development of the student questionnaire. In general, there will be one basic questionnaire for all courses, although individual teachers may add additional questions. It will be a task of the QA-unit to process the questionnaires and provide the department with feedback
- *Organising tracer studies*
  In the framework of an Internal Quality Assurance system, it is important to know where our graduates find a job. Therefore, tracer studies are necessary. It will be a task of the QA-unit to support faculties and/or departments in designing tracer studies.
- *Staff developments activities*
  There is a strong relation between quality assurance and staff development. Carrying out self-assessments at program level will shows weaknesses. Therefore it is important that the QA-unit develop staff development activities. The QA-unit may offer workshops/training in:
  - Formulation of learning outcomes
  - Curriculum design
  - Writing examination questions
  - Working with small groups
  - Lecturing in big groups
  - Etc.
- *Support faculties/departments in designing new curricula.*
  Of course, a QA-unit will never be responsible for a new curriculum. However, the QA-unit may share its experiences with the department. It will be important to ask the QA-unit for advise on the new curriculum.

NACTE plays an important role in quality assurance of the Technical Education by monitor the quality of the TI's (registration, accreditation and audit and by supporting the TI's in the development of a quality culture. Because NACTE embraces the principle of autonomy of the institutions and the principle that quality assurance is in the first instance the responsibility of the institution, it will be clear that NACTE only can be successful with a well functioning QA-unit. The QA-unit plays a double role:

- Facilitating QA activities in the institution and to contribute to quality improvement and quality enhancement
- To act as contact address for NACTE when NACTE organises an external assessment, might be of the institution as a whole, might be at program level.

The QA-unit will provide NACTE information on the state-of-the-art of quality assurance in the institution. The QA-officer is expected to report yearly about its activities. This can be done through the Chairman of the Quality council, because the QA-director has to report to the Quality council too.

2.1.2. The instrument of self assessment

A powerful instrument for assuring the quality is the instrument of self-assessment. It is a good way to discover the quality. A critical self-assessment is important because we are sometimes too eager to accept that everything is good: *"I have been teaching this way for years and my course has never caused problems. My students have always been content and employers have never complained about the graduates."* This may be true, in general. In an educational organisation, which is a professional organisation, the players always aim to deliver quality. The demand for self-evaluation is not inspired by lack of quality. It means that the quality has to be examined in a structured way, within a well-defined framework. Normally, a self-assessment serves as a preparation for a site visit by external experts organised by NACTE. The self-assessment report (SAR) provides the external experts with basic information. However, a self-assessment has specific value for the institution itself too. It provides an opportunity for discovering quality.

In the self assessment, the following questions are important:

- Why do we do what we are doing? Do we indeed do the right things?
- Do we do the right things in the right way?
- Do we have a thorough command of the process to actually realize what we want?
- Do we really achieve what we want to?

An effective self-assessment is time-consuming. It requires effort by staff and students. Often, it will require an investment of time that has to be taken away from other activities. However, the returns and the profits of a good self-assessment are high. The self-assessment will provide information not known to everyone; Information often exists, but only a small group of people knows it. Sometimes facts will have another dimension when they are connected to one another. Normally, a self assessment will be conducted once in the 5 years, assuming that the self assessment will lead to a quality action plan that every year will be checked on progress.

The self- assessment involves co-workers and students in the discussion on the quality of education: the discussion will be raised beyond the level of the individual who is active in the curriculum committee or administration; and the views on quality of individual co-workers and students will be examined together in order to establish a policy for the institution. It shows on which considerations choices need to be made (choices are often made implicitly or postponed) and the information gathered is brought to bear on earlier formulated principles. A decision is reached as to whether a policy should remain unchanged or an explicit choice made.

In organising an effective self-assessment, one has to take into account some basic principles:
- Primarily, a self-assessment should never be felt as threatening. A self-assessment should not be used to assess an individual, should never be used for punishment or reward and should never be used to blame someone.
- A self assessment aims at improvement and enhancement of the quality.
- It is necessary to create a broad basis for the self-assessment and to sensitize staff and students. The whole organisation has to prepare itself for it.
- Looking at quality is more than testing the performance. It also means organisational development and shaping the institution. Everybody has to be responsible and involved for real self-assessment.
- The management of the institution must fully support the self-assessment. Relevant information is needed for an effective policy and good management. The self-assessment serves to acquire structural insight in performance of the university;
- Conducting a critical self-evaluation demands a good organisation[9]. Primarily someone has to coordinate the self-assessment process. It would be good to designate someone specifically with the self-evaluation project.

The coordinator has to meet some requirements:
- In order to obtain the required information, it is important that the coordinator has good entry rapport at all levels of the institution. Therefore, it is very important that the coordinator has good contacts within the institution, with the central management as well as with the faculties and the staff members.
- The coordinator must have the authority to make appointments with management and staff about conducting the self-assessment and about the information that is needed.
- It is desirable to constitute a substantive team of staff in-charge of the self-assessment.
- It is important that the team is structured in such a way that the involvement of all sections is assured. The working group is in charge of the self-assessment, gathering data, analysing materials and drawing conclusions.
- It is assumed that self-assessment is an analysis supported by the whole faculty/department. Therefore, it is important that everyone should be at least acquainted with the contents of the self-assessment report and should recognise it as a document from his or her own institution. The working group may organise a workshop or seminar to discuss the draft SAR.
- Not everyone has to agree with all the points in the self-assessment report. There may be disagreement as to what are seen as weaknesses and strengths and what is to be considered as the causes of the weaknesses. Should there be very big differences of opinion between certain groups or bodies, then the SAR should report on it.

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[9] You also can find additional interesting suggestions about the organization of the self-assessment in the publication NACTE, Self-evaluation study Guide, June 2010 (page 1-10). Concerning the planning, the content of the SAR and the criteria (standards) to be evaluated see chapter 6 and 7 of this Handbook.

The institution determines how self-assessment is carried out. However, it is good to use experiences gained elsewhere. On the basis of experiences with self-assessment in other institutions some suggestions may be made that can facilitate the process (the tentative organisation of the process is given in Table 4):

•   Self-assessment should never be the work of a single person.
•   Make a group responsible for the self-assessment.
•   This group should consist of some three to five people, chaired by a coordinator.
        Students should be involved in the self-assessment.
•   A clear timetable should be set up, assuming a total amount of time available of about five to six months between the moment of the formal announcement by NACTE and the actual site visit.
•   The topics that have to be considered in the self-evaluation should be distributed among the committee members and each member made responsible for collecting information, and for analysing and evaluating the data from the self assessment.
•   The draft results should be discussed on the largest scale possible. It is not necessary to have consensus concerning the report; it is, however, necessary for as many people as possible to be aware of its contents.

Table 4: The process of organizing self assessment

Date	Activity
Eight months before the planned end of the self-assessment	• Appoint the leader of the assessment process • Compose the assessment team, including students
The following 6 months	• Divide the cells to be dealt with • Each person responsible for collecting information and data, collects that information • Write draft information of the cells
4 months after the start	• Discussion on the drafts in the group • Second draft
About 5 months after the start	• Discussion of the second draft with all faculty staff and students during an open hearing
6 months after the start	• Edit the comments of the hearing for the final draft • Send the SAR to NACTE
8 months after the start	External assessment

The TI's will conduct the self-assessments against NACTE academic quality standards, using the guidelines in this handbook (chapter 5, 6 and 7).

2.2. Responsibilities of NACTE

The responsibility of NACTE can be summarized as *monitoring that the graduates from the Technical Institutions fulfil the expectations of the employers and the profession*. By formulating the standards of the awards (NTA), NACTE has set the basic condition for the competent, qualified graduate. By monitoring the quality of the institutions NACTE contribute on its way to the quality assurance of Tanzanian Technical Education. Monitoring of the quality of the institution is necessary, because the internal quality assurance, belonging to the responsibility of the institution, need an external check to provide confidence to the stakeholders in the graduates of the Technical Institutions.

2.2.1 . Support of Quality and Quality Assurance by NACTE

NACTE will support the quality and quality assurance of the TI's in the following way (see figure 5):
-   *Checking the quality* by
        ▪ Registration
        ▪ Institutional accreditation
        ▪ Program accreditation
        ▪ Quality audit
-   *Supporting quality* by:
        ▪ Keeping up to date the database Job profiles
        ▪ Training seminars and staff development activities (e.g. How to formulate learning outcomes; curriculum design; formulating assessments)
        ▪ Supporting Quality Assurance officers in implementing IQA systems
        ▪ Supporting institutions in conducting self assessments
-   *Advisory functions:*

- Advise the government on planning and development of Technical Education
- Advise Institutions on new developments
- Clearinghouse function concerning information about Technical Education

Figure 5: Quality monitoring by NACTE
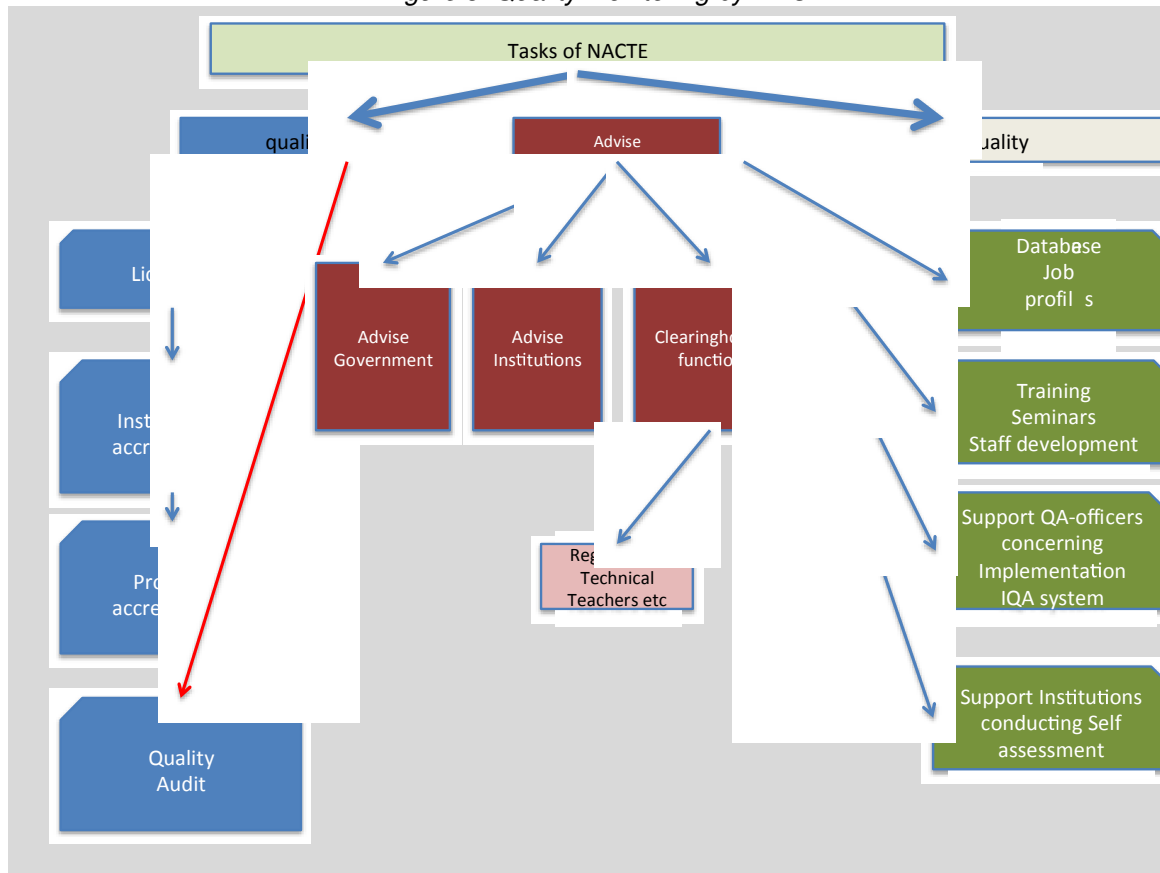
2.2.2 Quality monitoring by NACTE

NACTE will monitor the quality of the intuition and its programs by organizing external quality assessments. The process of monitoring contains the following sub-processes:

- Registration of a new institution
- Compulsory report of the institution about the IQA-system, based on self assessment by the TI, within 18 months after recognition
- Institutional accreditation within 3 years after recognition
- Program accreditation

While it is the responsibility of the institution to conduct on regular base self-assessments of the IQA-system, the institution and the programs, it is the responsibility of NACTE to organise the external assessments. This might be a Quality Audit, Institutional Accreditation or Program Accreditation.

In all cases, external experts are playing an important role. The role of the experts   is not an easy one. The expert team has to combine various functions. The team will:

- Check the outcomes of the self-assessment
- Reflect on the self-assessment
- Be engaged in dialogue and discussion with the institution
- Act as an auditor/inspector.

The expert team is expected to combine two missions:

- The team members should listen to the staff of the institution and act as colleagues, using their expertise and experience to offer advice and recommendations.
- At the same time, the team has to write a report with its independent verdict on the subject of assessment.

In one way the team of experts has to act collegially and in the other way it has to remain independent. It will not always be easy to combine the divergent roles.

In chapter 5 of the handbook for NACTE, the approach of the Quality audit is described. Chapter 6 contains the process of an institutional accreditation, while chapter 6 of the handbook for NACTE, contains the process of program accreditation. As counts for most accreting agencies in the world, it is impossible to conduct Quality Audits, Institutional Accreditation and Program accreditation at the same time. Just like other agencies, NACTE has to choose where it will put emphasis. The emphasis will be on institutional accreditation. This will always be a site visit to check the self-assessment report (SAR). The assessment of the IQA system will be done by NACTE , based on the compulsory SAR of the institutions. Programme accreditation will have different modalities too (see chapter 7 of the handbook for NACTE).

When a site visit is planned, NACTE as to appointed a team of external experts. Those teams will differ for the Institutional accreditation, program accreditation and a quality audit. However some aspects are important to take care of:

- *Selection and appointment*

To get a good team, NACTE will invite the institution that will be assessed to give names of experts that the institution views as the *primus inter pares*. The experts to be nominated must be of high esteem. Based on the list, provided by the institution and possible complemented from other sources, NACTE will compose the expert team. The proposed composition will be sent to the institution to be assessed to see if there is any serious objection against anyone of the candidates. If not, NACTE will appoint the members of the expert team.

- *Independence and confidentiality*

It is important that the expert team, and each member individually, act independently and without any conflict of interest. If a member has any connection with the institution to be audited, he or she cannot be appointed. To assure independence and eliminate conflict of interest, all members of the team will sign the *declaration of independence.* The audit members are also bound to confidentiality about everything they will hear or read about the institution under assessment. The Self-Assessment Report (SAR) and all interviews are confidential.

- *Training of the experts team*

Assessing quality is a specific skill. Normally, experts in a team are specialists in institutional management or in a discipline and do not have much experience in evaluation or quality assessment. Therefore, the experts must be trained beforehand. Therefore, NACTE will organise on a regular base, training of the experts. All members should have knowledge of the basic ideas of quality and quality assurance; they all need to be aware of the does and don'ts. The basic elements of the training are:
  * What is quality and how can quality be measured?
  * How to use the quality model
  * How to cope with criteria and standards set by NACTE?
  * How to read the self-assessment report
  * How to organise the interviews
  * How to behave during the assessment
  * How to write the external assessment report

- *The secretary*

Because all external assessments should be done in equivalent /similar way, it is important that NACTE provides the secretary of each expert team. In addition to his or her duties as secretary, described below, he or she also acts as project leader during the assessment. The secretary:
- Checks the SAR for completeness and compliance with the requirements made on it;
- Maintains contact with the institution about the planning of the external assessment
- Makes preparations for the team's visit;
- Files the documents referring to the assessment process.

Once the team has been installed, the secretary has the following three-fold task:
- *To monitor the team's working procedure and compliance with the assessment protocol.*

The secretary is the connecting link between NACTE and the team. His or her primary responsibility is to monitor the assessment process. Is the expert team following the guidelines laid down for it? Is it maintaining its independence? Are agreed procedures followed? *To support the team with specific expertise*

The secretary supports the team in the fulfilment of its duties. As the chairman's right-hand person, he or she plays an active role in drafting the assessment report. Although not formally a member of the team, the secretary does contribute specific skills in the fields of quality assessment and policy development in tertiary education.

- *To archive the audit trail.*

  The secretary is responsible for keeping the documents relating to the assessment at least until the end of the assessment procedure.

3. WHAT IS QUALITY? SOME THEORY AND BACKGROUND INFORMATION

3. 1 What is quality?

The word quality is already used several times without explanation what quality is. However, everybody who thinks about quality and quality assurance is faced with the question: "What is quality?" In the time that the call for quality became louder and louder, many discussions on quality start with a quote from the book Zen and the Art of Motorcycle Maintenance:

> "*Quality...you know what it is, yet you don't know what it is. But that's self-contradictory. But some things are better than others, that is, they have more quality. But when you try to say what the quality is, apart from the things that have it, it all goes poof! There's nothing to talk about. But if you can't say what Quality is, how do we know what it is, or how do you know that it even exists? If no one knows what it is, then for all practical purposes it doesn't exist at all. But for practical purposes it really does exist. What else are the grades based on? Why else would people pay fortunes for some things and throw others in the trash pile? Obviously some things are better than others... but what's the 'betterness'? So round and round you go, spinning mental wheels and nowhere finding any place to get traction. What the hell is Quality? What is it?"* (Pirsig, 1974)[10]

In spite of these reflections by Pirsig, many books and articles have been written trying to discover the nature of quality. But quality is like love. Everybody talks about it and everybody knows what he/she is talking about. Everybody knows and feels when there is love. Everybody recognises it. But when we try to give a definition of it we are left standing empty-handed.

The quote from Pirsig shows how desperately the writer is thinking about quality and reveals the problem that relates to quality: There is no general consensus on the concept of quality. An absolute definition of quality does not exist, because quality is, just like beauty, in the eyes of the beholder. Whoever asks whether something has quality has already a certain concept in mind and certain expectations. When we talk about the quality of a product or the quality of a service, the definition often used is the satisfaction of the client. The client has certain expectations about the product or service and wants "value for money".

While quality, in general, is already a difficult concept in itself, quality in higher education is much more confusing, because it is not always clear what the "product" and who the "client" is. Is the "graduate" the "product" that we offer society and the labour market? Or is the graduate-to-be, the student, our "client" and the program that we offer the "product"? We can say that a Technical Institution has a multiple product system and a multi-client system.

In the discussion on quality in higher education, an article by Green (1994)[11] is often quoted in which he makes a distinction between:

- *Quality as excellence.* In this concept, the emphasis is on high-level standards. Being the best, being excellent. We may say that something has quality and something has more quality. People talking about promoting quality frequently mean promoting *excellence.* However, quality is not the same as being excellent. Of course, everybody likes to do his/her best to deliver quality, but not every institution can be a Yale or MIT. A country with only excellent institutions does not exist. An institution can choose not to aim for excellence, because it likes to educate a broad range of graduates and not only the brightest ones. A typical regional institution with a mission to develop its country will choose differently to an institution like Berkley.

- *Quality as fitness for purpose.* With this concept of quality, the basic question is if the institution is able to achieve its formulated goals. It concerns the quality of the processes. This quality concept is improvement oriented. But, will this quality approach assure achievement of the threshold quality because goals and aims are not the issue? An institution might have set its goals too low, through which it can easily achieve them. This means that we not only have to discuss the fitness *for* purpose, but also the fitness *of* purpose.

- *Quality as a threshold.* In this view, quality is seen as meeting threshold requirements. This quality concept often forms the basis for accreditation decisions. The problem is that it is not always clear what basic quality is. Setting threshold standards might also hinder innovations. Compliance with the threshold standards does not stimulate innovations.

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[10] *Pirsig, Zen and the Art of Motorcycle Maintenance, 1974.*
[11] *Green, D (1994), What is quality in Higher Education? Concepts, Policy and Practice. In: Green (ed)(1994)What is Quality in Higher Education? London: SRHE/Open University Press*

- *Quality as added value.* This concept emphasises what happens to the students. Education is about doing something *to* the student. Quality means the value added to the student during education and training. It is the method of formulating learning outcomes and realising the outcomes in the graduates. The basic quality question is: "What has he/she learnt?
- *Quality as value for money*. This quality concept has its focus on efficiency. It measures outputs against inputs. It is often a concept supported by governments. The concept is connected with accountability.
- *Satisfaction of the client*. With the rise of the concept of the "student as a consumer", quality is described as: "something has quality when it meets the expectations of the consumer; quality is the satisfaction of the client".

Figure 6: different views on quality
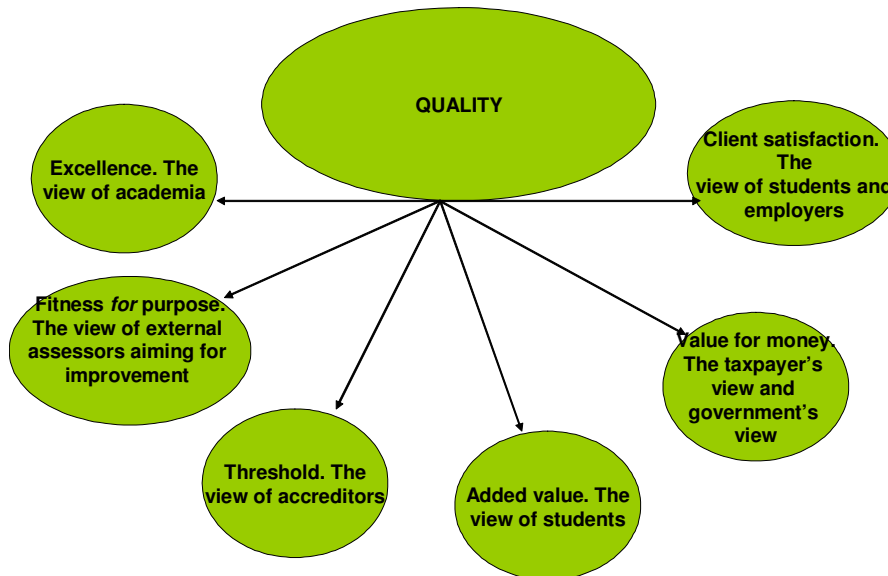
3.2 The stakeholders and quality

Quality assurance in Technical Education is much more complicated than quality assurance in industry, because there are so many players in the field. Technical Education has many stakeholders and each stakeholder has its own ideas. We can distinguish the following stakeholders:
- The government or the state
- The employers
- The academic world
- The students
- Parents
- Society at large

The opinion about quality will differ from stakeholder to stakeholder:
- When the *government* considers quality, it will look first at the pass/fail ratio, the dropouts and enrolment time. Quality in the eyes of governments can be described thus: *"As many students as possible finishing the program within the scheduled time with an international level degree at reduced costs."*
- Employers talking about quality will refer to the knowledge, skills and attitudes obtained during the studies: the "product" that is tested is the graduate.
- Quality of education has a different meaning in the eyes of the students and their parents. For them, quality is connected with the contribution to their individual development and preparation for a position in society. Education must link up with the personal interests of the student. But the educational process also has to be organised in such a way that students can finish their studies in the given time.
- An academician will define quality as *"A good academic training based on good knowledge transfer and a good learning environment and a good relationship between teaching and research."*

We must conclude that quality is a very complex concept. We cannot speak of *"The Quality";* we have to speak about "qualities". We have to distinguish between quality requirements set by the different stakeholders: by the student, by the academic world, by the labour market (employers), by society, and by the government. Each stakeholder will appreciate different aspects of quality, as can bee seen in Table 5.

Table 5: Stakeholder appreciation of the quality aspects

Stakeholders	Students	Employers	Government	HEI	Staff
Aspect of quality					
Input (for example):					
student intake			*	*	*
selection	*			*	*
budget				*	*
academic staff	*			*	
Process (for example):					
aims/goals	*		(*)	*	*
educational process	*			*	*
educational organisation	*			*	*
Content	*		*	*	
advice	*			*	
Output (for example):					
pass/fail rate	*		*	*	
the graduate	*	*	*	*	*

Quality is not a simple one-dimensional notion. Quality is multi-dimensional. So there is quality of input, process quality and quality of output. All these dimensions have to be taken into account when discussing quality and judging quality. The different views on quality and multi-dimensional notion of quality mean that it is a waste of time to try to define quality precisely. Absolute, objective quality does not exist. However, if we take our quality seriously and if we seriously try to assure our quality, we have to agree on a workable concept of quality. Taking into account that each player has his or her own ideas about quality, we can agree that we should try to find a description of quality that fits most of the ideas and that covers most of the expectations of the stakeholders. This means that quality is not a static concept. Depending on developments, the accent of quality will change (e.g. in Europe the change from process orientation towards a more output oriented quality perception).

Figure 7: From requirements of stakeholders to quality
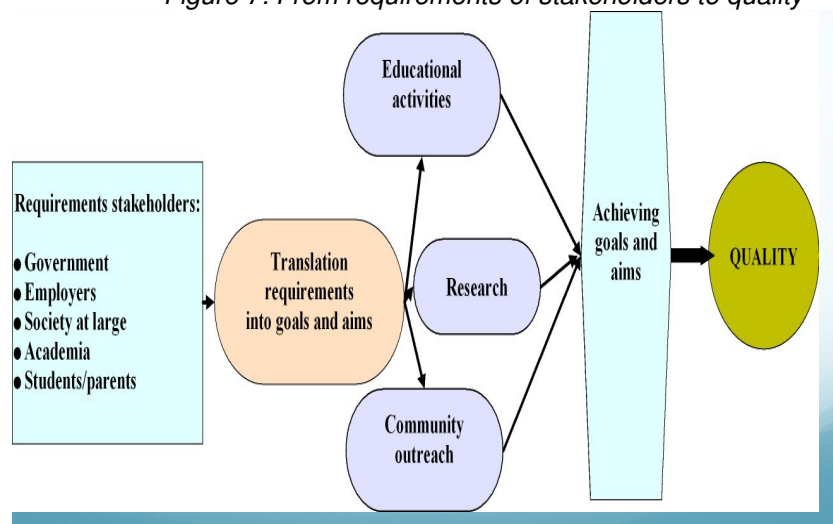
With so many stakeholders and players in the field, we may say *"Quality is a matter of satisfying the stakeholders in an adequate way".* In this process, each stakeholder needs to formulate, as clearly as possible, his/her requirements. The institution or department, as ultimate supplier, must try to reconcile all these different wishes and requirements. Sometimes the expectations will run parallel, but they can just

as well end up in conflict. As far as possible, the requirements of all stakeholders should be translated into the mission and goals of an institution and into the objectives of a faculty and of the educational program and as far as this concerns research, the research programs. The challenge is to achieve the goals and objectives. If this is the case, then we can say that the institution, the faculty has "quality" (see Figure 7). Although it remains necessary to strive for a good description of the different requirements and aspects of quality, the lack of a definition should never be an excuse for not paying attention to quality or for not working for quality enhancement.

As said, an absolute definition of quality does not exist. For the sake of a common understanding, the following description of quality might be adopted:

Quality is achieving the formulated goals and aims in an efficient and effective way (fitness for purpose), assuming that the goals and aims reflect the requirements of all our stakeholders in an adequate way (fitness of purpose).

We have to take into account the following remarks when talking about quality:
- *Quality is not always the same as efficiency!*
  The discussion on quality assessment is often connected with the concept of "efficiency" (saving money, making more rational use of public resources). In assessing quality, an important question will be: *"Do we achieve the required level of quality at acceptable cost?"* An efficiency-oriented approach as such is a good starting point, but the problem is that efficiency is not always defined as "at acceptable cost", but often as "at minimal cost", and this may threaten quality. It may be very efficient to have lectures for a thousand students, but it is not effective. It may be considered efficient to have a very structured degree program with student assessments every four weeks, forcing students to work and to keep up with the program. However, does this method lead to the creation of an independent, and critically thinking graduate? It may be considered efficient to use only multiple-choice questions for student assessment, but does it enhance verbal and written communication skills?

- *Quality is context bound*
  When striving for quality, the main question is: *"Do we offer the stakeholders what we promise to offer."* This means that a starting point for judging our quality will be our promises (i.e. goals) and that the verdict "quality or no quality" will be based on the promises. Therefore, we have to look at our quality in the given context. McDonald's, for example, will strive for quality, and when we eat a fast food meal, we will probably get quality. However, this is not the same quality, as we will get when we have dinner in a restaurant with one or two stars in the Guide Rouge of the best restaurants. So, we cannot assess the quality of McDonald's with the same standards as those used to assess a star restaurant. This also means that we may never assess a regional Technical Institution, e.g in South America with the same standards that we apply to more sophisticated institutions like MIT, Berkley or the TH Zurich. If an institution claims excellence, other standards count than when an institution's aspiration is to contribute to the development of the country and the region. We cannot assess the quality of the University of the Amazonas against the standards applied to Berkley. Each level of quality has its price. The only common feature is that we may ask: "Will we get what we expect?"

Quality is context bound that is true. However, all institutions also like to play a role on the international stage. This means that an institution has to meet at least the basic standards that are applied to Technical Institutions in general. There is at least a bottom line for the threshold quality, although it is not clear what that bottom line is. This is something that the international community has to decide.

Having accepted a workable definition of quality, there is an other hot topic: how do I Asses the quality? How to measure quality? What are the criteria for measuring quality? What are the standards against which quality is assessed? Talking about quality assessment, it is important to make a clear distinction between *criteria* and *standards*.
- *A criterion* can be defined as a specific aspect taken into consideration to make a judgement about quality. For example, the criterion (the aspect) we will look for might be *formulation of expected learning outcomes* or *computer facilities.*
- *Standard* is the level that a criterion must reach. Are there learning outcomes formulated and if so, is this done in an adequate way or more than adequate? Some times a criterion might be quantified: talking about computer facilities, the standard might be 1 computer per 5 students.

Criteria are valid in all circumstances and in all places. In fact all accrediting bodies, all over the world are looking at more or less the same criteria assessing the quality of a program, e.g.:

- Goals and objectives; expected learning outcomes
- Program content
- Program specification or description
- Program organisation
- Didactic concept/teaching/learning strategy
- Student assessment
- Staff quality
- Quality of the support staff
- Student profile
- Student advice/support
- Facilities & infrastructure
- Student evaluation
- Curriculum design & evaluation
- Staff development activities
- Benchmarking
- Achievements /graduates
- Satisfaction stakeholders

To know if a criterion is adequate/satisfactory, depends on the standard set for the criterion. Standards are context bound and may differ from situation to situation. As said, the standards to be applying to Berkley will be different from the standards applied to the university of the Amazonas.

3.3 The use of performance indicators and quantitative data

As it has already been stated, in a simplification of quality assessment we may say: *"define quality and look for a set of performance indicators to measure the quality."* We are living in an evaluative society which very much likes to measure everything: The performance of the public health system (number of patients treated, length of the waiting list for surgery), the performance of the police officer (number of fines, number of solved cases) and, of course, the performance of Technical Education (number of graduates, pass rates, average time spent in the institution). Managers and politicians in particular, are fond of such quantitative performance indicators (PI). They look for more and more hard, statistical data, because this is considered to be more objective. But the question is whether there is a real link between so-called performance indicators and quality. Opinion is divided. It is evident that whenever people try to derive quality directly from quantitative data, differences of interpretation arise. Consider, for example, the measurement of the quality of research. Is the total number of publications a true measure of quality? The analysis of information and experience gained elsewhere indicates that this is not always the case. Such performance indicators, like the number of articles, reveal the danger of using performance indicators. Once set, the indicator will be corrupted as soon as possible. Instead of publishing one good article, we see now that the article is split into several articles, because each counts for the record. Another example from the field of education: the interpretation of success rates. One faculty has a pass rate of 80%, another one has a rate of 60%. But does the figure tell us anything about the performance of the faculty? Does it tell us anything about the quality of education? Is the performance of institution Y with a pass rate of 80% superior to the achievement of institution X with a rate of 60%? Or has institution lowered its level? Or is institution X more selective in the first year?

A considerable amount of literature exists on performance indicators (PIs). A striking factor in the discussion on these is that there are two opposing parties. It is mostly governments who lay a strong emphasis on the importance of using performance indicators: they are optimistic about the possibility of determining the right indicators. Technical Education Institutions, on the other hand, are generally very reserved and sceptical about them. Many governments are trying to formulate performance indicators that would be useful in quality assessment, but so far without any success. The following reasons can be put forward:

- *The term "performance indicator' is very confusing*, despite many attempts to explain the meaning and functions of performance indicators. The problem is that a performance indicator does not always relate directly to the performance of an institution, but should rather be considered as statistical data. For example, one of the PIs used in the student population is the male-female ratio. However, this indicator says nothing about the quality of an institution. It is more a government indicator that shows how far the objective of "gender balance" has been achieved.
- *People attach different functions to performance indicators*. Without using the term 'PI', it will be clear that the use of certain data (enrolment figures, student numbers, number of graduates, unemployment

figures) is important. These data play an important role in monitoring and evaluation. Governments, on the other hand, often look to performance indicators as instruments for governing financial allocation. In fact, we can see attempts to establish a system of performance-related funding in several countries.

- *Transforming indicators into standards.* Looking at the various functions attributed to performance indicators, it is not unreasonable to fear that indicators will be transformed into standards. The success rates may be an indicator of achieving the goal of "enabling as many students as possible to graduate". A pass rate of 70% would appear to be more successful than a pass rate of 60%. But the figure says nothing about the quality of teaching. However, there may be a tendency to specify that a success rate of at least 70% should be achieved.

The conclusion should be that all attempts and all discussions so far have failed to produce a generally accepted set of performance indicators. Putting emphasis on the quantitative performance indicators, we run the risk to enforce reality by over-simplifying quality. Quality in Technical Education is more than a collection of figures and data. Although qualitative aspects are often more difficult to assess, we should not flee into quantitative aspects with fake objectivity. We have to learn to live with the idea that the judgement of quality in Technical Education is not an objective activity, but rather an activity with a human factor.

Is there a role for quantitative aspects (PIs) in quality assessment? What is the value of performance indicators as opposed to peer review or in combination with peer review? Looking at the sets of performance indicators that are often used, we see that quantitative indicators are often basic data, but are immediately decorated with the notion of a "PI": They cover numbers of students, numbers of staff, dropout rates, student-staff ratios, etc. When these data are used properly, the "performance indicators" raise questions but never give answers. The so-called qualitative performance indicators may be seen as elements that have an influence on quality aspects to be taken into account when looking at quality. The question is whether we can (or will) rely more on performance indicators than on the subjective judgements of peers. The role of performance indicators in quality assessment is a limited one, as can be illustrated by the following example:

I have a bottle of wine and want to assess its quality. Which aspects are important? First, I have to decide on which aspects I will assess the wine: acidity, tannin, alcohol percentage, and sediment. Of course, I can measure the wine on these aspects, but still I do not know whether the wine is good or not. Someone has to tell which figure is good and which not. But there are other aspects more important for the assessment: taste and smell. These aspects are not quantifiable. We need a panel that can judge the taste and smell as fine or not. (Vroeijenstijn 1995[12]); see Figure 8).
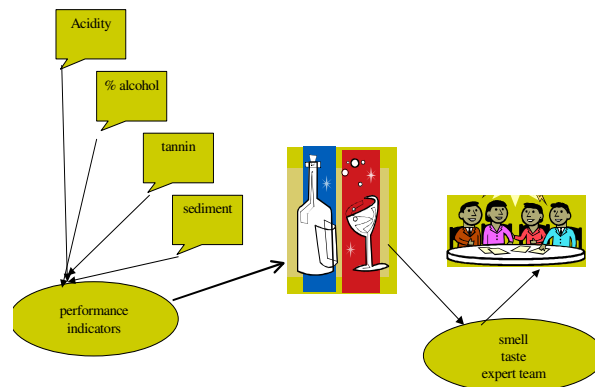
Figure 8: Relation between performance indicators and expert assessment

Working with performance indicators seems so attractive because it looks like they might provide a clear picture of strengths and weaknesses. But these analyses must be handled very carefully and must be complemented with other information. PIs play a role in quality assessment, but only a minor one. Performance indicators as the set of quantitative indicators play a role in supporting the opinion of experts. But these performance indicators can never have the last say or take the place of expert/peer

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[12] Vroeijenstijn, A.I (1995), *Improvement and Accountability: Navigating between Scylla and Charybdis*, London, Jessica Kingsley Publishers

review. The opinion of the experts must be based on facts and figures, but can never be replaced by performance indicators. Performance indicators should be used not as an end in themselves to draw definitive conclusions, but to trigger areas of concern and provide a catalyst for further investigation. It will be clear that performance indicators can never speak for themselves, but must be interpreted by experts. Where they seem to be objective, they are not really performance indicators, but only statistical data or management information. Just as is the case for the concept of "quality", it is also a waste of time searching for the philosopher's stone: a set of performance indicators to measure quality.

4.REGISTRATION

Section 5 (1) (a) of the National Council for Technical Education Act, 1997 empowers the Council to register technical institutions capable of delivering courses. Registration is mandatory [Registration Regulations (Government Notice No. 279 published on 26/10/2001). At the moment of writing NACTE has registered 472 Technical Institutions. Registration of an institution means license the institution to admit students and to offer programs, leading to one of the level awards of the framework of Technical and Vocational Education and Training (TVET) qualifications.

4.1 Registration new Technical institutions

Registration (Licensing) is a process in which NACTE satisfies itself that an institution has been legally established and is viable for conducting training programmes sustainably. An institution, looking for licensure, sends a letter to NACTE expressing interest to establish a technical institution.

To be registered and get a license, the institution will provide NACTE with the following information:
1) Vision, mission, objectives, strategic and academic plans to achieve its goals;
2) Intended academic programmes with curricula and rationale to the labour market and competition with other local providers;
3) Administrative and academic regulations;
4) Academic and support staff information, contracts and CVs;
5) Student admission requirements and 5-year enrolment projections;
6) Information regarding physical infrastructure, financial and learning resources;
7) Legal documents related to occupancy;
8) Institutional governance and organization structure
9) Institutional layout map showing its location and size;
10)   Fee structure and rationale.

The registration process

• NACTE verify the document(s) submitted by applicant institution.
• NACTE may appoint experts from the relevant occupational field as verification team for physical verification of the applicant institution. NACTE may also send a NACTE official to check the physical conditions.
• The verification team/NACTE official submits a report to the relevant subject board for recommending the registration stage;
• The subject board submits a report to the Council for decision;
• NACTE informs the applicant institution on the decision of the Council by official letter

The decision might be:
  ∗ *Provisional Registration*: Granted to institutions that either have deficiencies that they can redress in a short duration before they are considered for full registration or have just started to admit students, and have enough resources for full or considerable part of the programme.
 *Full Registration***:** Granted to institutions that are fully operational and have acquired enough experience, human, physical and financial resources to ensure sustainability for running its programmes.

The registration will be valid for 3 years. Within those 3 years, the institutions has to be accredited. Within 18 months of registration, the institution has to send a Self Assessment Report about the IQA-system to NACTE.

4.1 Registration new programs

An institution, that has been registered, but not yet accredited, has to ask registration of a new program. To be registered and get a license to offer the program, the institution will provide NACTE with the following information:
  1. Name of the program
  2. Competence level descriptor in the NQF
  3. Rationale to start the new program
  4. 5-year enrolment projections;

5. Student admission requirements
6. The resources to run the program
7. The job profile, the program is based on
8. The expected learning outcomes
9. The content of the program
10. The staff offering the program
11. The facilities

The registration process

- NACTE verify the document submitted by applicant institution.
- NACTE may appoint experts from the relevant occupational field as verification team for physical verification of the applicant institution. NACTE may also send a NACTE official to check the physical conditions)
- The verification team/ NACTE consultant submits a report to the relevant subject board with advise about registration.
- The subject board submits an advise to the Council for decision;
- NACTE informs the applicant institution on the decision of the Council by official letter

The decision might be registration or non-registration. Registration means: license to offer the program. It might be expected that the program will to deliver qualified graduates. The registration of the program is valid for 3 years. The license to offer the program will be withdrawn, if the institution is not accredited within those 3 years.

5. TOWARDS AN INTERNAL QUALITY ASSURANCE SYSTEM[13]

> *A well functioning Internal Quality assurance system is seen as a basic condition for institutional accreditation.*
> *The QA-officer and the QA-unit play an important role in implementing a quality assurance system in the* institution. *One of the first activities of the QA-unit is to explore what is already done in the field of quality assurance both at institutional level and at faculty level. What elements are already in place? What should be strengthened? In this chapter the QA-officer will find guidelines for the implementations of a quality assurance system. The following activities are expected:*
> - *Use the model in figure 5 to analyse the state-of-the-art of quality assurance in the institution*
> - *Formulate the strengths and weaknesses*
> - *Develop a strategic plan to implement a robust Internal Quality assurance system*
>
> *An institute, that is registered, has to be accredited within 3 years time. Waiting for accreditation, it is compulsory for the registered institution, to send a Self-assessment report of its Internal Quality Assurance system within 18 months after the registration. NACTE will assess the IQA-system based on the SAR and makes recommendations for improvement.*

In the *Guidelines for Preparation of Quality Management Plan for Institutions Accredited by NACTE, June 2004* is stated:
 All institutions under the auspices of NACTE are required to have quality control systems in place to ensure that respective institution meets the accreditation requirements. This requires availability of clear institutional policies and procedures on quality control and quality assurance. The key purpose is to guarantee quality of outputs from technical institutions and win confidence of stakeholders in the technical education provided. Quality control involves operational techniques and activities that are aimed both at monitoring process(es) and at eliminating causes of unsatisfactory performance in all stages of the quality loop. The ultimate goal is to achieve economic or desired effectiveness. (page iii)*.*

In this chapter, the outline of a robust IQA-system commonly to be used in the institutions will be discussed. It will be based on general accepted criteria. The criteria and standards from NACTE are included.

5.1 What do we mean with Quality Assurance?
Nowadays, so much attention is paid to quality that people might think that quality is an invention of the last decades. But of course this is not true. Attention to quality is not new: it has always been part of the academic tradition. It is the outside world that now emphasizes the need for explicit attention to quality. Several reasons can be given for Quality Assurance:
- All Technical Institutions want to train graduates who meet the needs of society. We all like to deliver a "product" that is wanted. We all like to be proud of our graduates.
- The labour market expects institution's to provide the students with adequate knowledge, skills and attitude, important for the right job fulfilment (Competence based learning).
- Internationalisation of the profession and a world that is becoming a small village brings us greater competition than before. The graduates of the institutions not only have to compete inside the country, but also with other countries. Globalisation not only has negative aspects, but also positive ones. It offers our graduates the opportunity to enter the world market, but under the condition that the degree qualifications they posses have quality.
- There is need for "consumer protection": our students and their parents are spending a lot of time in and money on their education. Therefore, they have the right to receive a quality education,
- The relationship between Technical Education and society changed. Society became increasingly interested in Technical Education. Also the relationship between Technical Education and the labour market became a topic for discussion.
- Quality has become increasingly important for Technical Education institutions, because of the question as to whether it was still possible to deliver the same quality within the given frameworks.
- One can talk of a 'quality gap': on the one hand, governments are striving to increase the numbers of students enrolled (Technical Education for as many as possible); on the other hand, we see a

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[13]   *This section covers the NACTE documents on quality assurance and quality control.*

continuous decrease in investments. Technical Education institutions have to do more with less money. But at the same time quality is expected to be maintained or to improve.

- Student exchange and international cooperation require insight into quality. There has always been exchange of students between countries, but with the world becoming a global village, it has become increasingly clear that it is very important to know about the quality at the other institutions. Questions have to be asked, such as: *'Can I recognise the course?'* or *'Is it good enough?'*

5.2 Towards an Internal Quality Assurance (IQA) system

If we like to assure our quality, it is necessary to establish a structured quality assurance system that makes it possible to monitor our quality, to improve the quality and to evaluate our quality. There is no single approach or system that is applicable to all institutions. Each institution has to build its own system. However, when developing an IQA system, there are some basic conditions that have to be taken into account. These are as follows:
- It should be kept as simple as possible;
- It should not be a bureaucratic process;
- It should have the support of management and staff;
- There must be a right balance between a centralised and decentralised approach
- Effective instruments should be used
- The internal quality assurance system must be tuned to national and international developments.

> *An Internal Quality Assurance system (IQA system) is a system aiming at setting up, maintaining and improving the quality and standards of teaching, and service to community. The overall objective is to continuously promote and improve the quality of the programs, their mode of delivery, and their support facilities, etc.*

There is no Internal Quality Assurance system that fits all institutions. However, Internal Quality assurance has a pivotal position in the framework of accreditation and therefore, in some cases there are requirements formulated for an IQA-system, like is done by the European Association for Quality Assurance (ENQA) (ENQA, 2005, revised in 2014[14]). The requirements can be summarized as follows:

1. Policy and procedures for IQA
An Institution has a clear policy and associated procedures for the assurance of the quality and standards of their programs and awards. The institution commits itself explicitly to the development of quality culture and quality awareness. To achieve this, the institution develops and implements a strategy for the continuous enhancement of quality. The strategy, policy and procedures should have a formal status and be publicly available. They also include a role for students and other stakeholders.
2. A monitoring system
An Institution has a structured monitoring system to collect information about the quality of its activities. At least the monitoring system should include:
-     Student evaluations
-     A student progress system
-     Structural feedback from the labour market
-     Structural feedback from the alumni
3. Periodic review of the core activities (education, research and community services)
An institution has formal mechanisms for periodic review or evaluation of the core activities: The programs and degrees, the research activities (if applicable) and community service.
4. Quality assurance of the student assessment
 An institution has clear procedures to assure the assessment of students. Students are assessed using published criteria, regulations and procedures, which are applied consistently. There are clear procedures to assure the quality of the examinations
5. Quality assurance of teaching staff
An institution has ways of satisfying themselves that staff is qualified and competent to conduct the core activities of the institution: Education, research and community services.
6. Quality assurance of facilities

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[14] *Standards and guidelines for quality assurance in the European Higher Education Area (DRAFT endorsed by the Bologna Follow-Up Group on 19 September 2014. Subject to approval by the Ministerial Conference in Yerevan, 14-15 May 2015), September 2014*

An institution should have clear procedures to ensure that the quality of the facilities, needed for student learning are adequate and appropriate for each program offered.

7. Quality assurance of the student support

An institution has clear procedures to assure the quality of the student support and student counselling.

8. Self assessment

An institution conducts regularly, but at least every 5 years a self-assessment of its core activities and of the institution as a whole to learn about the strengths and weakness. This self-assessment will lead to a quality plan.

9. Internal audit

A self-assessment might be part of the external quality assessment/accreditation process and the self-assessment report as an input for the external review team. If the self-assessment is not connected to the EQA, the institution is expected to organise an audit, based on the self-evaluation report.

10. Information systems

An institution should ensure that it collects, analyzes and uses relevant information for the effective management of their core activities.

11. Public information

An institution should regularly publish up to date, impartial and objective information, both quantitative and qualitative, about the programs and awards that it is offering.

12. A Quality handbook

An institution should have a QA handbook, where all regulations, processes and procedures concerning Quality Assurance are documented. All people concerned (i.e. stakeholders) should publicly know the existence and contents of this handbook.

According to NACTE, the minimum requirements for Internal Quality Assurance system are:

1. The establishment of a quality assurance committee
2. Preparation and adaptation of an institutional quality assurance policy
3. Planning for quality assurance policy implementation
4. Execution and evaluation of this implementation[15]

In Figure 9 the requirements as set among others by ENQAA, INQAAHE and NACTER are visualized in the model for an Internal Quality Assurance system. The model contains all the elements of an Internal Quality Assurance system, which are:

- The monitoring instruments;
- The evaluation instruments,
- The QA-processes for specific activities
- Specific QA-instruments.

The institution can use the model to see:

- What elements of IQA are already in place and what should still be done?
- How far it achieves the criteria set by NACTE

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[15]   *See Timothy Manyaga(2008) , "Standards to assure quality in tertiary education: the case of Tanzania", Quality Assurance in Education, Vol. 16 Iss2 pp 164-180*

Figure 9: model for an IQA system
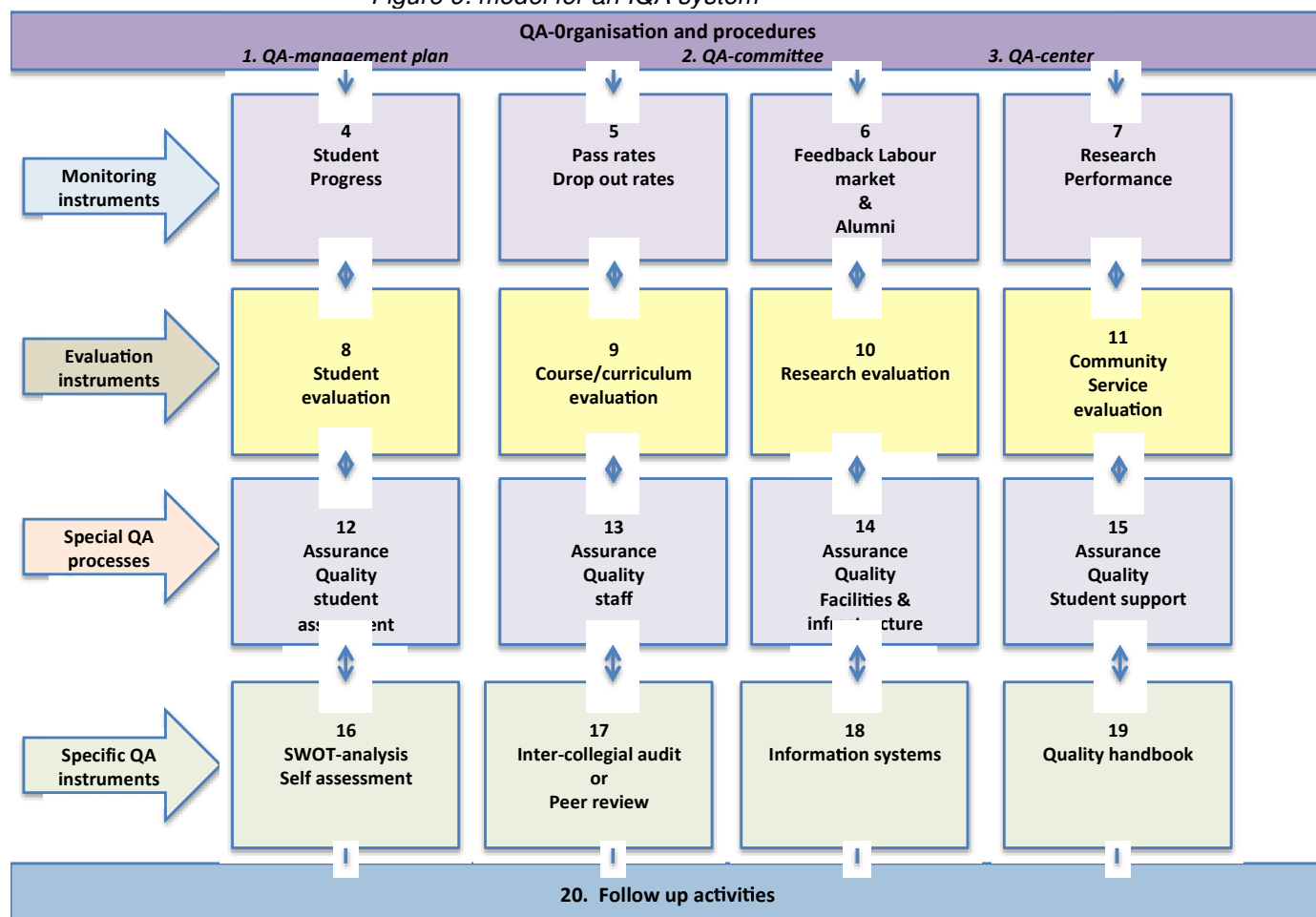
5. 3 Self-assessment of the IQA system at the Institution

An efficient Internal Quality Assurance (IQA) system is necessary to assure our quality. To learn about the quality of the IQA system and to see how far the institution is meeting the criteria of NACTE, the QA-unit will organise a self-assessment of the quality assurance approach in the institution. This section shows how to conduct such self-assessment. The guidelines given for the self-assessment of the IQA system should not be seen as a straitjacket, because the IQA system may differ from institution to institution. Therefore, it should be seen as a benchmark: to what extent

- do we reach the standards of NACTE?
- do we reach internationally accepted standards for IQA?

If we do not reach the NACTE standards or the internationally accepted standards then we should ask ourselves why not and what can we do to change it?

The model in figure 9 will be used for the critical evaluation. The following aspects will be treated:

- Internal Quality Assurance: general aspects
- Monitoring instruments
- Evaluation instruments
- QA procedures to safeguard specific activities
- Specific QA instruments

For each aspect, the following format is used:
1. The name of the cell in the model is given, just as the title of the aspect that will be treated, e.g. Internal Quality Assurance, general aspects.
2. The Criterion concerning the aspect is given in a box. The criterion shows what commonly is expected from an institution. When NACTE has formulated a criterion, different from the commonly accepted criteria, the NACTE criterion is added.

Looking for evidence

A set of questions and statements is drawn up to help the QA-unit to find evidence if the criteria are being met. Please be aware of the following as far as these questions are concerned:

- *The questions-set are not meant as a compulsory list that has to be completed. It is not a questionnaire to be answered point by point. It must be seen as a tool to collect information and evidence. The questions are to be seen as reminders.*
- *The model and the questions have been developed for general use. This means that the list has to be adapted to the institutions own situation and to its specific identity.*

Section 5.4 will lead the institution through all criteria that had to be considered.

5.4 Conducting the self-assessment

> *Go, topic by topic and:*
> - *Give a description of the situation at the moment*
> - *analyse the situation (What do we think about it? Are we satisfied with the situation?)*
> - *If not, describe how you think the situation can be changed and improved.*
> - *What evidence do you have that the formulated criterion (criteria) has (have) been met? (Documentation, effects, outcomes)*

QA –ORGANISATION (CELL 1-3)

World wide is accepted that an institution has a clear policy and associated procedures for the assurance of the quality and standards of its programs and awards. The institution commits itself explicitly to the development of quality culture and quality awareness. To achieve this, the institution develops and implements a strategy for the continuous enhancement of quality. The strategy, policy and procedures should have a formal status and be publicly available. They also include a role for students and other stakeholders. A clearly formulated policy and clearly formulated procedures for quality assurance provide a framework for developing and monitoring the effectiveness of the quality assurance system. They also help to generate public confidence in institutional autonomy. The formulated policy contains the statements of intent and the principal means by which these will be achieved.

1. Quality management plan

Criterion

> *The institution has a "quality management plan" containing clear and specific policies and procedures that provide a framework for the quality assurance activities. The institution should expressively and clearly commit to disseminating the culture of quality among all its members.*

Looking for evidence

- *Does the institution have a quality management plan? It includes strategies, policies and procedures for continuous improvement of performance. The "quality management plan" covering strategies, policies and procedures for continuous improvement of performance should be approved by the management at the institution and then announced to all stakeholders.*
- *The quality management plan includes the following:*
  - *The mission and quality policy of the institution;*
  - *The specific role, authorities, and responsibilities of management and staff of the institution with respect to QA activities;*
  - *The means by which effective communications with personnel actually performing the work are assured;*
  - *The processes used to plan, implement, and assess the work performed;*
  - *The process by which measures of effectiveness for QA activities will be established and how frequently effectiveness will be measured; and*
  - *The continual improvement based on lessons learned from previous experience.*

2. Quality Assurance Committee

Criterion

> *The institution has a Quality Assurance Committee to ensure quality policies and objectives are set, implemented and evaluated*

Looking for evidence

- Does the institution have a Quality assurance committee chaired by a high level official from the higher management of the institution? Tasks of the quality assurance committee include:
  - Offering consultation, advice and guidance to the quality center/ unit/ department regarding the improvement of quality system in the institution and the improvement plan of the institution.
  - Reviewing and approving assessment tools of forms and questionnaires that are used in the quality assurance activities in the institution.
  - Monitoring the performance quality in the institution and submitting the reports required for that.

3. Quality Centre / Unit /department

Criterion

> The institution has a centre/ unit/ department linked to the higher management of the institution with the task is to execute, coordinate and monitor the quality assurance. The size of the quality center/ unit/ department suits the size of the institution.

Looking for evidence

- Has the institution a centre/ unit/ department for managing the activities of quality assurance in the institution?
- Are the required equipment, sources, resources and budget adequately provided for it.
- It should be managed by a high-level faculty member who has knowledge and experience on quality assurance and who has the ability to lead quality assurance activities.
- He is also to be accountable to the chairman/ director of the institution or any high level official and be assisted by a qualified team, preferably small.

THE MONITORING SYSTEM (CELL 4-7)

4. Monitoring student progress

Criterion

> Student progress is systematically recorded and monitored, feed back to students and corrective actions are made where necessary.

Explanation

How students are monitored and supported by staff is essential to a good student career. A institution must ensure that a good physical, material, social and psychological environment is in place.

Looking for evidence

- Is attention paid to study progress? Is student progress recorded? Does the recording lead to problems being pointed out in time? When is first contact made with problem cases? Does this result in remedial and/or preventive actions being introduced for the individual student or program development?
- Is special attention paid to coaching first-year students? If so, how does it work?

5. Monitoring pass rates and drop out

Criterion

> A institution has a structured monitoring system to collect information about the success rates and the drop out among the students.

Explanation

It is important that an institution monitored the success rates and the drop out of the students. (*Pass rates or success rate:* number of students, successfully finishing the program; *Drop out rate:* number of students that do not finish the program).

Looking for evidence

- What is the opinion of the department about the pass rate? If not satisfactory, what measures have been taken to improve the pass rate?

- *Have any fluctuations in the success rate been seen over the last years?*
- *How high is the dropout rate? Are there explanations for the dropout rate?*
- *Does the department know where the dropout students are going?*

6. Feedback labour market and alumni

Criterion

> *The institution has a structured method to obtain feedback from all stakeholders for the measurement of their satisfaction. The monitoring system includes at least:*
> - *Structural feedback from the labour market*
> - *Structural feedback from alumni*

Explanation

An important element of the internal Quality Assurance system is to collect the feedback from the stakeholders in a structured way, especially the labour market and the alumni. How do we know what they think about our performance?

Looking for evidence
  Opinion-Labour market
- *Do structured contacts exist with employers and the labour market for getting feedback on graduates?*
- *How do employers appreciate the graduates? Are there any specific complaints? Do the employers appreciate specific strengths?*
- *How do we cope with complaints from the labour market*

Opinion - Alumni (graduates)
- *Does the institution interview alumni on a regular basis?*
- *What is the opinion and feedback of graduates when they are employed?*
- *Is the feedback of the alumni used to adapt the program?*

7 . Monitoring research performance (if applicable)

Criterion

> *An institution has a structured monitoring system to collect information on the quality of its core activities. This includes monitoring the research out put (number of publications), the number of grants of the staff etc.(if applicable)*

Explanation

As far as the institution also is involved in research, it is important to keep track of the research performance.

Looking for evidence
Does the TI have an efficient monitoring system keeping:
  - *records concerning the number of publications registered by staff*
  - *records on the number of research grants*
  - *citation index?*

EVALUATION INSTRUMENTS (CELL 8-11)

8. Student evaluation

Criterion

> *The institution makes use of student evaluation on a regular base. The outcomes of the student evaluation are used for quality improvement. The institution provides the students with feedback what is done with the outcomes*

Explanation

Students are the first to judge the quality of teaching and learning. They experience the delivery method. They have an opinion about the facilities. Of course, the information given by students has to be

counterbalanced by other opinions. Nevertheless, the institution is expected to carry out student evaluations and to use the outcomes for improvement.

Looking for evidence
– *Does the institution use student evaluation in a structured manner?*
– *Who is responsible for the evaluations?*
– *What is done with the outcome of the evaluations? Are there any examples of this contributing to improvements?*
– *What is the input of the students who sit on the committees involved in the internal quality assurance process?*

9. Course and curriculum evaluation

Criterion

The institution has specific mechanisms approved by NACTE to design, approve, monitor and review the programs within the frame of quality assurance system in the institution.

Explanation
The confidence of students and other stakeholders in Technical Education is more likely to be established and maintained through effective quality assurance activities which ensure that programs are well designed, regularly monitored and periodically reviewed, thereby securing their continuing relevance and currency. The quality assurance of programs and the degrees awarded is expected to include:
• Development and publication of explicit intended learning outcomes;
• Careful attention to curriculum and program design and content;
• Specific needs for different modes of delivery (e.g. full-time, part-time, distance-learning, e-learning) and types of Technical Education (e.g. academic, vocational, professional);
• Availability of appropriate learning resources;
• Formal program approval procedures by a body other than that teaching the program;
• Regular periodic reviews of programs (including external panel members).

Looking for evidence
▪ *Does the institution have a mechanism to ensure the quality of its programs?*
▪ *Does the institution formulate learning outcomes for each program in consistency with the job profiles offered by NACTE?*
▪ *Does the institution have a mechanism to ensure monitoring the implementation and periodic review of the programs to ensure their modernity and connection to the needs of the market and society?*

10. Research evaluation (if applicable)

Criterion

The institution, with a task in research, has a system for regular review of research outcomes.

Explanation
Research assessment is important to learn about the quality of the research efforts of an institution

Looking for evidence
▪ *Is the institution involved in research assessment by an outside body?*
▪ *Is the research of the institution assessed when applying for grants?*
▪ *Does the institution organise research assessment at a regular basis?*

11. Community Service evaluations

Criterion

The institution has a system for regular review of the community outreach.

Explanation

An institution is not only responsible for teaching and sometimes research. It is also responsible for serving society. Consultancy involves a broad range of activities. In general, the term consultancy covers the provision of professional advice or services to an external party for a fee or other non-monetary consideration. It is important to evaluate regularly if the institution is achieving what its want to achieve with the community outreach. Therefore an evaluation system is important.

Looking for evidence
- *Does the institution evaluate the role it is playing in the local, national and international community?*
- *Are the non-profit activities of the institution evaluated?*

SPECIFIC QA PROCESSES (CELL 12 -15)

12. Quality assurance of the student assessment

Criteria
• *An institution has clear procedures to assure the assessment of students.* • *Students are assessed on the basis of published criteria, regulations and procedures that are applied consistently.* • *There are clear procedures to assure the quality of the examinations.* • *There is an appeal procedure.*

Explanation

Student assessment is one of the most important elements of Technical Education. The outcomes of assessment have a profound effect on student's future careers. It is therefore important that assessment is carried out professionally at all times and takes account of the extensive knowledge that exists on testing and examination processes. Assessment also provides valuable information for institutions about the efficiency of teaching and learner support. Student assessment procedures are expected to:
- be designed to measure the achievement of the intended learning outcomes and other program objectives;
- be fit for purpose, whether diagnostic, formative or summative;
- have clear and published grading/marking criteria;
- where possible, the assessment is not relying on the verdicts of single examiners;
- take account of all the possible consequences of examinations regulations;
- have clear regulations covering student absence, illness and other mitigating circumstances;
- ensure that assessments are conducted securely in accordance with the institution's stated procedures;
- be subject to administrative verification checks to ensure the accuracy of the procedures;
- inform students clearly about the assessment strategy being used for their program, what examinations or other assessment methods they will be subject to, what will be expected of them, and the criteria that will be applied to the assessment of their performance.

Looking for evidence
- *Does the assessment method foster open, flexible, reflective and outcome-based assessment?*
- *Are the criteria made explicit?*
- *Are the assessment strategies in line with clearly defined learning outcomes?*
- *Is a range of assessment methods used?*
- *Is the scope and weighting of the assessment known to all concerned?*
- *Are the standards applied in assessment explicit and consistent across the curriculum?*
- *Are procedures regularly applied to ensure that, as far as possible, assessment schemes are valid, reliable and fairly administered?*
- *Do students have ready access to reasonable appeals procedures?*
- *Is the reliability and validity of the assessment methods documented as required and regularly evaluated?*

- *Are new assessment methods developed and tested?*

The formulated questions have to be looked at in a general way, taking into account the general approach across all programs, not just in a specific program. What is the general practice at the institution?

13. Assurance of the quality of the staff

Criterion

An institution   has means to satisfy itself that its staff are qualified and competent to conduct the core activities of the institution: education, (research) and the community outreach:
- *Adequate staff appointment procedures*
- *An adequate staff appraisal system*
- *Staff development activities*

Explanation

Teaching staff is the single most important learning resource available to most students. It is important that those who teach have full knowledge and understanding of the subject they are teaching, have the necessary skills and experience to communicate their knowledge and understanding effectively to students in a range of teaching contexts, and can access feedback on their own performance. Institutions should ensure that their staff recruitment and appointment procedures include a means of making certain that all new staff have at least the minimum necessary level of competence. Teaching staff should be given opportunities to develop and extend their teaching ability and should be encouraged to value their skills. Institutions should provide poor teachers with opportunities to improve their skills to an acceptable level and should have the means to remove them from their teaching duties if they continue to be demonstrably ineffective.

Looking for evidence
- *How is the staff recruitment system organised?*
- *How is the promotion system organised? What criteria are important for promotion?*
- *Are staff appraisals carried out? How are these done? What are the consequences?*
- *Has a clear Human Resource policy been put in place?*
- *Are staff development activities carried out?*

14. Quality assurance of the facilities

Criterion

An institution has clear procedures to ensure that the quality of its facilities needed for student learning are adequate and appropriate for each program offered:
- *Adequate checks on the computer facilities*
- *Adequate checks on the library*
- *Adequate checks on the laboratories*

Explanation

In addition to their teachers, students rely on a range of resources to assist their learning. These vary from physical resources such as libraries or computing facilities to human support in the form of tutors and other advisers. Learning resources and other support mechanisms should be readily accessible to students, designed with their needs in mind and responsive to feedback from users of these services. Institutions should routinely monitor, review and improve the effectiveness of the support services available to their students.

Looking for evidence
What procedures do you have to assure the quality of the:
- *Lecture halls, etc.?*
- *Libraries?*
- *Laboratories?*
- *Learning resources*
- *Research resources?*

15. Quality assurance of student support

Criterion

The institution has clear procedures to assure the quality of the student support and student advice.

In establishing a learning environment to support the achievement of quality student learning, teachers must do everything in their power to provide not only a physical and material environment that is supportive of learning and is appropriate to the activities involved, but also a social or psychological environment.

Explanation
It is important that the quality of student support is assured. This may include, student advice and/or counselling plus the physical and material environment.

Looking for evidence
What procedures to you have to assure the quality of the student support activities?
- *A tutoring system?*
- *Student advice and/or counselling?*
- *Student housing?*
- *Sports facilities?*

SPECIFIC QA INSTRUMENTS (CELL 14-17)

16. The SWOT-analysis or self-assessment

Criterion

The institution regularly (but at least once every 5 years), conducts a self-assessment of its core activities and of the institution as a whole to learn about its strengths and weaknesses. This self-assessment must lead to a quality plan.

Explanation
A self-assessment or a SWOT analysis is a powerful instrument for learning more about the quality of the core activities and the quality of the institution as a whole. It will answer the basic questions whether the institution is doing the right things right and whether it is able to achieve its goals. Often a self-assessment is connected with external assessment or accreditation, because the accrediting body or external assessors ask for a self-assessment report as input. Even when there is no connection with an external assessment, it will be productive for the institution to conduct self-assessment on a regular basis.

Looking for evidence
- *Does the institution already have experience with the instrument of self-assessment?*
- *Is there any connection with external assessment/accreditation?*
- *If not yet done, are you planning to conduct self-assessments on a regular basis?*
- *If the institution has or has not yet conducted self-assessments, how does it know what its quality?*

17. The inter-collegial audit/peer review

Criterion

A self-assessment might be part of an External Quality Assessment (EQA) or accreditation process where the self-assessment report acts as input for the external review team. If the self-assessment is not connected to the EQA, the institution will be expected to organise an audit itself based on the self-assessment report.

The self-assessment gives us a good idea about our quality. However, this is not enough. We have to check our own view against the views of the outside world. Therefore, it is advisable to organise an inter-collegial audit. This means that experts/colleagues from an other institutions will check our SAR

Looking for evidence
- *Does the institution have an inter-collegial audit system?*
- *How often is the system used?*
- *Does the institution have trained auditors? Where were they trained?*
- *What does the institution do with the outcomes of an audit? Give some examples.*

18 information systems

Criterion

> *The institution should have an information system that documents its performance on the key performance indicators approved in the quality improvement plan. Updated, fair and objective information on programs should be published taken from the outcomes of its information system or any other comparative studies.*

Explanation
Institutional self-knowledge is the starting point for effective quality assurance. It is important that institutions have the means to collect and analyse information about their own activities. Without this they will not know what is working well and what needs attention, or the results of innovatory practices.
The quality-related information systems required by an individual institution will depend to some extent on local circumstances, but are at least expected to cover:
- Student progression and success rates;
- Employability of graduates;
- Student satisfaction with their programs; effectiveness of teachers;
- Profile of the student population;
- Available learning resources and their costs;
- The institutions own key performance indicators.

An efficient information system is also important for benchmarking the institution in question with other institutions in the region. In fulfilling their public role, Technical Education institutions have a responsibility for providing information about the programs they offer, the intended learning outcomes of these, the qualifications they award, the teaching, learning and assessment procedures used, and the learning opportunities available to their students. Published information might also include the views and employment destinations of past students and the profile of the current student population. This information should be accurate, impartial, objective and readily accessible and should not be used simply as a marketing opportunity. The institution should verify that it meets its own expectations in respect of impartiality and objectivity.

Looking for evidence
- *Does the institution have an information system revolving on the key performance indicators and does it collect data on the key performance indicators and feed the information system with it, then analyzes that data and uses it to improve its activities and academic programs?*
- *Does the institution have an office assigned with linking the institution with the society*
- *Does the information system cover the key performance indicators? Are the results used to compare the performance of the institution with other institutions similar in type and size.*

19. The QA handbook

Criterion

> *An institution has a QA handbook that documents all regulations, processes and procedures concerning Quality Assurance. This handbook is public and known to all the people concerned.*

Explanation
A QA handbook contains all the documents (or references to the documents), processes and procedures concerning activities in the Quality Assurance process.

Looking for evidence
- *Does the institution already have a QA handbook?*
- *What is the content of the QA handbook? Sum up the chapters.*
- *What documents, processes and procedures are already available?*
- *What documents, processes and practices need to be developed?*
- *Who will collect and compile all the information?*

20. The follow up

Criterion

There is clear evidence that the institution used the information from the monitoring system and the outcomes of evaluations to improve the quality.

Explanation
Quality assurance and the activities in the framework of Internal Quality Assurance only make sense if the outcomes and information are used for the enhancement and improvement of the quality. Without follow up actions, evaluation is a waste of time. Especially a self-assessment must lead to a quality plan for the near future.

Looking for evidence
- *The institution I has a clear policy for enhancement and improvement of the quality*
- *The institution uses the information collected by the monitoring system and the outcomes of evaluation to develop a yearly quality plan*
- *There are examples, showing the results of Quality Assurance.*

5.4 The Self-assessment report (SAR)
After finishing the self-assessment of the Internal Quality Assurance system, one will write down the outcomes of the assessment in a Self Assessment Report (SAR). The SAR is an important document. It contains the basic information to be provided to NACTE within 18 months after registration or for the Quality Audit to be organised by NACTE.

On the other hand the SA is the basic document for the institution for the formulation of a quality improvement plan for the coming years. The content of the SAR follows the lines of the aspects, discussed during the self-assessment process. For each aspect to be treated one should:
- Describe clearly the state-of-the art. An outsider must understand the situation.
- Analyse the situation. What is your opinion about it? Satisfied or not? If not, why not?
- Describe how far you meet the formulated criteria. What evidence can you provide?
- Describe the weakness and the strengths.

Content of the self-assessment report
Table 6 defines the content of the self-assessment report. Be sure to discuss the report within the institution and ensure that everybody is able to recognise himself/herself in this picture.

Table 6: Content of a self-assessment report IQA-system

Introduction   • *How was the self-assessment carried out?*   • *Short description of the institution*
Chapter 1: Policy and procedures for Internal Quality Assurance
Chapter 2: The Monitoring instruments   *2.1 student progress*   *2.2 Pass rates and drop out*   *2.3. Program organisation*   *2.4 Feedback labour market + alumni*   *2.5 Research performance*
Chapter 3 Evaluation instruments

3.1 Student evaluation		
3.2 course + curriculum evaluation		
3.3. Research evaluation		
3.4. Service evaluation		
Chapter 4: Specific Quality assurance processes		
4.1 Assurance student assessment		
4.2 Assurance quality of the staff		
4.3. Quality assurance facilities		
4.4. Quality assurance student support		
Chapter 5: Specific instruments		
5.1 Self-assessment/Swot analysis		
5.2. Inter-collegial audit/peer review		
5.3. Information system		
5.4 Quality handbook		
Chapter 6: Follow up activities		
Chapter 7 Strengths-weaknesses analysis		
7.1 Summary of strengths		
7.2 Summary of weaknesses		
7.3 Quality plan for the coming years		

5.5. Strengths/weaknesses analysis

The self-assessment is followed by a strengths-weaknesses analysis. At the same time, this serves as a check to see how far the institution is in compliance with the given criteria. This is best done, using the checklist (see appendix 1) and summarizing the outcomes in table 3.

The different aspects of the program will be assessed on a scale 1-7. The marks have the following meaning:
> *1 = absolutely inadequate; immediate improvements must be made*
> *2 = inadequate, improvements necessary*
> *3 = inadequate, but minor improvements will make it adequate*
> *4 = adequate as expected*
> *5 = better than adequate*
> *6 = example of good practice*
> *7 = excellent*

The overall assessment of the different aspects is based on the scores given to each sub-aspect in the category. But, of course not all sub-aspects have the same weight. This means that you cannot calculate mathematically an average. You have to balance the various sub-aspects and judge the importance of each of them. Aspects with positive outcomes may compensate for some negative ones. Summarizing the outcomes per category is not a mathematical enterprise, nor ticking boxes. One has to balance the importance of each criterion. The same counts for the overall judgment of the IQA-system. One cannot calculate the average of the categories, but look at the importance of the category.

Summarizing the outcomes for each category shows the strengths and weakness of the IQA system. Use table 7.

Table 7 : Summary of the assessment of the IQA system

		1	2	3	4	5	6	7
1	***QA Organisation***							
2	***Monitoring***							
3	***Evaluation Instruments***							
4	***Special QA processes***							
5	***Specific QA instruments***							
6	***Follow up***							
	Overall judgment about the QA -system							

Summary of strengths
Summaries the points that the institution considers to be its strengths and mark the points that you are proud of.

Summary of weaknesses
Indicate which points the institution considers to be weak and in need for improvement. Also indicate what you are going to do about this.

For the improvement of the weaknesses, the institution must include actions in the Quality improvement plan. Only with a clear follow up and a quality and action plan, the investment in the self-assessment and the SAR make sense.

5.5 Preparation for the Quality audit

All institutions, must within 18 months, send a SAR report of th evaluation of the IQA system to NACTE. In some cases, the self-assessment of the IQA system will be followed by a Quality Audit, organised by NACTE. An external audit team will visit the institution. To prepare the institution for the Quality Audit, the following is important:
• Take care that the SAR is on time at NACTE
• Take care that the SAR is informative, analytical and honest. The SAR is the basic information for the audit team
• Take care that all staff and students knows about the SAR
• Take care that during the site visits the most important documents, showing evidence that you are meeting the criteria, are displayed for the audit team
• Take care that everybody is available for interviews during the site visit.

6. SELF-ASSESSMENT OF THE INSTITUTION AS PREPARATION FOR ACCREDITATION

NACTE has the task to accredit Technical Institutions (section 5(1) (a) of the National Council for Technical Education Act, 1997. Accreditation means that NACTE will check if the institution indeed is offering quality based on past performance and provide the institution with a quality label. Because accreditation is based on past performance it is necessary for the institution to have at least one cohort of graduates. Institutional Accreditation will take place within 3 years after registration.

When NACTE will conduct an institutional accreditation, the institution will prepare it self by a Self-assessment of the institution. If institutional accreditation by NACTE at short notice is not foreseen, the QA-officer may still organize the Self-evaluation for the improvement of the institution. This chapter offers the QA-officer an instrument to conduct the self-assessment at institutional level.

6.1 An analysis Model for the Self-Assessment of the Institution

In order to map the quality in a self-assessment we need a clear model to prevent looking at some aspects and ignoring others. Figure 6 (next page) shows a model for the analysis of quality of the institution. For the critical self-assessment, this analysis model will be used

Concerning criteria we have to keep in mind that there are no absolute and objective criteria and standards. The criteria for assessing the quality given in the handbook are based on the criteria as formulated by external quality assessment agencies, e.g. European, American, Asian, Australian and South African accrediting bodies, among others. After studying many sets of standards and criteria, a common denominator has been formulated. To verify compliancy of its own criteria, the TI can use the regional criteria as benchmark. In general, one may say that the formulated criteria can be seen as the minimum criteria.

The Academic standards, formulated by NACTE are included in the model. Table 8 shows the number of the cells of the analysis model, where the NACTE standards are discussed.

Table 8: NACTE standards and the analyze model of the quality of an institution

NACTE Standard	Cell nr. Analysis model
Standard 1: Institutional Vision and Mission;	2
Standard 2: Governance and Administration;	4
Standard 3: Institutional Integrity;	2
Standard 4: Institutional Effectiveness;	4/8
Standard 5: Educational Programmes;	8/11
Standard 6: Student Information and Admission to Programmes;	8
Standard 7: Student Guidance and Support;	8
Standard 8: Staff Selection, Appraisal and Development;	5/8
Standard 9: Physical Resources	7
Standard 10: Financial Resources.	7

The self-assessment aims at finding evidence that the institution is meeting the criteria. Therefore, one has to look at the criteria and try to find indications of meeting the criteria:
- give a description of the state-of-the-art of the aspect
- make a critical analysis of the state-of-the-art. (Is one satisfied with it or not?)
- describes the strengths and weaknesses concerning the mentioned aspect
- what evidence is there that you are meeting the criteria?
- if there are problems or if you are not satisfied, what actions are planned to overcome the shortcomings?
- Set up a time frame for the action plan

Figure 10 shows a model for the analysis of quality of the institution. For the SWOT-analysis, this model will be used. In section 6.2, under the heading of the aspects (such as *Mission, Vision, Goals and Aims*, *Quality Assurance*, *Facilities and Infrastructure)* the criteria to be met are given. An explanation and interpretation of the criteria is given where necessary.

For each aspect, the following format is used:
- The name of the cell in the model is given, just as the title of the aspect that will be treated, e.g. *Vision and Mission of the Institutions*
- The Criterion concerning that aspect is given in a box. The criterion shows what commonly is expected form an institution. The Academic standards as formulated by NACTE has priority above the general accepted criteria
- If NACTE is not mentioning a criterion, but the criterion is seen internationally as important, the criterion is mentioned.

Under de heading *"Evidence"* a set of questions and/or statements is drawn up to help to find evidence if the criteria are being met. Please be aware of the following as far as these questions are concerned:
- *The questions-set are not meant as a compulsory list that has to be completed. It is not a questionnaire to be answered point by point. It must be seen as a tool to collect information and evidence. The questions are to be seen as reminders.*

Figure 10: Analysis model for the quality of the institutions
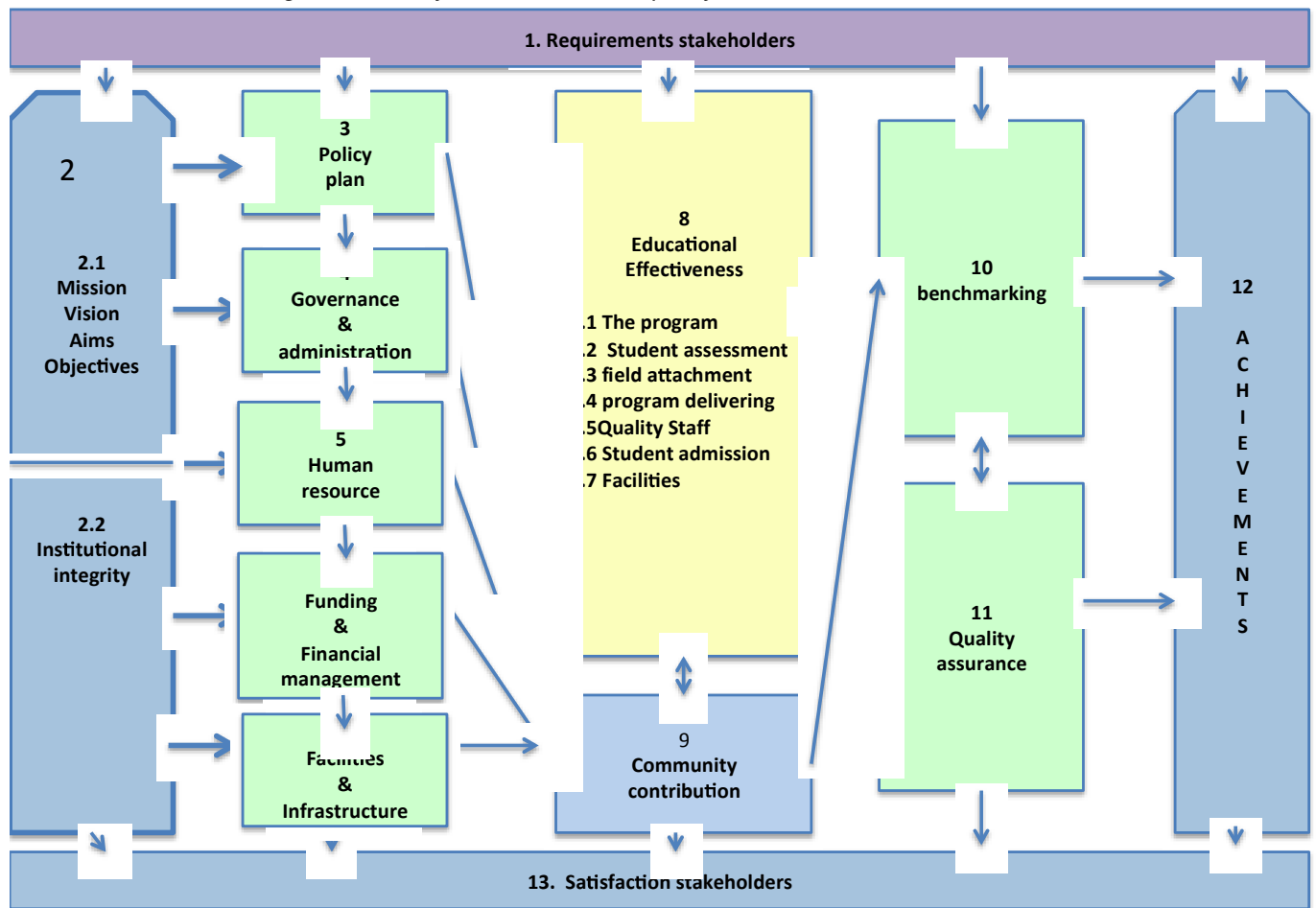
6.2 the self-assessment: the quality aspects to be assessed

1. Requirements of stakeholders

Criterion

The institution has a clear idea about the relevant demands and needs of all stakeholders

Explanation
Technical Education has many stakeholders and each stakeholder has its own ideas about quality: the government or the state, the employers, the academic world, the students and parents, and society at large. Each stakeholder will appreciate different aspects of quality. Because each stakeholder has its

own ideas and expectations, each stakeholder needs to formulate, as clearly as possible, his/her requirements. The TI, as an ultimate supplier, must try to reconcile all these different wishes and requirements. As far as possible, the requirements of all stakeholders should be translated into the expected goals and objectives/outcomes of the institution. This regards the three core activities: teaching/learning, research and community outreach.

Evidence
- *Does the institution have a clear idea about the requirements set by the government?*
- *Does the institution know clearly the requirements of academia?*
- *does the institution know the needs and requirements of the labor market?*
- *Does the institution analyze the needs and requirements of the students/parents?*
- *Does the institution analyze the needs and requirements of the society?*
- *How does the institution balance the requirements of the different stakeholders?*

2. Mission, vision, aims and objectives; integrity

2.1 Mission, vision, aims and objectives

Criterion

The institution has a statement of vision and mission that defines the institution, its educational purposes, its student constituency, and its place in the technical education and training community.

Explanation

The mission and objectives of the TI should be drafted at the level of the TI and suit its nature and the group it serves to clearly determine its identity, academic activities and its current and future role in Technical Education in a brief, realistic and comprehensive manner.

Evidence
- *Existence of a statement of vision and mission, adopted by the governing board or advisory board or council identifying the broad-based educational purposes it seeks to achieve;*
- *A clear vision and mission statement consistent with the original objectives and defining the students the institution intends to serve as well as the parameters under which programs can be offered and resources allocated;*
- *Institutional planning and decision-making guided by the vision and mission statement;*
- *Regular evaluation and revision of the institution's vision and mission statement.*

2.2 Institutional integrity

Criterion

The institution demonstrates honesty and truthfulness in presentations to its constituencies and the public; in pursuit of truth and the dissemination of knowledge; in its treatment of and respect for administration, academic staff, other staff, and students; in the management of its affairs and in relationships with NACTE and other external agencies.

Evidence
- *Clear, accurate, and consistent statements and publications to its constituencies, the public, and prospective students through its prospectus including those presented in electronic formats concerning:*
  - *Educational purposes;*
  - *Qualifications, curricular offerings, educational resources, and course offerings;*
  - *Student fees and other financial obligations, student financial aid;*
  - *Requirements for admission and for achievement of awards, including the academic calendar and information regarding program length; and*
  - *The names of administrators, academic staff, and governing or advisory board.*
- *Readily available governing or advisory board-adopted policy stating the institutional commitment to the pursuit and dissemination of knowledge and which fosters the integrity of the teaching-learning process;*
- *Academic staff and other staff distinguish between personal conviction and proven conclusions and present relevant data fairly and objectively to students and others;*

- *Clear policies concerning the principles of academic honesty and the sanctions for violation;*
- *Policies and practices, of appropriate understanding of and concern for issues of equity and diversity;*
- *Honesty and integrity in its relationships with NACTE and compliance with NACTE standards, policies, guidelines, public disclosure, and self-study requirements;*
- *Regular evaluation and revision of institutional policies, practices, and publications to ensure integrity in all representations about its vision and mission, programs and services.*

3. The policy plan

Criterion

- *The institution plans constantly to achieve its mission and objectives and evaluate the extent, way and quality of achieving them. Results of the annual assessment are used in the processes of continuous comprehensive planning and assessment. It also works on self-analysis and criticism and reviews its objectives, policies and procedures according to that.*
- *The institution ensures the participation of all councils, committees, administrations, faculty members and students in planning and assessment.*
- *The institution periodically reviews the assessment processes and planning activities to ensure their effectiveness.*

Evidence

- *The institution adopts strategic planning based on complete analysis of the current situation, identifying the gap between it and its desired measurable objectives, and prepares executive plans to fill the gap and links them to its budget so they are implementable.*
- *The institution commits to having assessment as one of the main components in the process of strategic planning. It evaluates its activities including teaching, learning, research and community service in light of its mission and objectives. Results of the assessment are used to improve the quality of its academic programs, services and activities.*
- *The institution provides the necessary resources for the processes of planning and assessment.*

4. Governance and Administration

4.1 The Governing Board, Advisory Council

Criterion

The institution has a Governing Board or Advisory Board or Council responsible for the quality and integrity of the institution.

Explanation
The leadership and administration of the TI should be faithful to the TI and work to achieve its interests and the interests of the beneficiaries of its services. Managers and leaders should perform their tasks within an accurate organizational structure, set clear administrative systems that are consistent with the mission and objectives of the TI, and prepare clear policies for managing it and an accurate accountability system.

Evidence
- *Existence of a Governing Board/Advisory Board/Council, which is an independent policy-making board capable of reflecting the public interest in board/council activities and decisions;*
- *Putting in place a mechanism that provides for continuity of board/council membership and staggered terms of office;*
- *Having in place operational policies and procedures for ensuring that all inputs, work processes, and products or services of the institution are in line with its vision and mission .*

4.2. Administration and Governance

Criterion

The Institution has effective Administration and Governance.

Evidence
- *Existence of qualified administrative staff of appropriate number to enable the institution to achieve its goals and is organized to provide appropriate administrative services;*
- *A lean governance/administrative structures and systems which ensure appropriate roles for the board, administration, academic staff, supporting staff, and students, and facilitate effective communication among the institution's constituencies.*

5. Human resources (HR)

Criterion

- *The institution takes care of high-quality faculty staff and support staff by clearly defining their responsibility, and by evaluating their performance on a regular basis by means of an adequate staff appraisal system*
- *The institution provides for:*
  - *a system of staff development to enhance the knowledge and skills of faculty and supporting staff in conducting activities that have a direct influence on the quality of teaching-learning. This should include the formulation of a concrete personnel development plan;*
  - *evaluation of the effectiveness of the provided training*
  - *compilation of records of education, experience, training, and other essential qualifications required of lecturers and supporting staff.*
- *The institution establishes an activity plan and evaluates activities to encourage students, faculty members and other personnel to be conscientious in their thoughts and speech.*
- *The institution enhances the professional ethics of its students, faculty members and other personnel*

Evidence
- How does the institution select and appoint its academic staff?
- Is an adequate staff appraisal system in place for use in evaluating performance and promotion?
- How is staff performance evaluated?
- What opportunities are given for staff/HR development and training?
- How does the institution evaluate the efficiency of its staff/HR development activities?
- How does the institution stimulate the ethics of its students, academics and other staff?

6. Funding and financial management

Criterion

The provision of financial resources to meet academic requirements is effectively planned and reviewed.

Explanation
The institution should ensure providing sufficient financial resources to implement its academic programs and the services it offers and use these resources with high efficiency. The TI adopts long term planning while preparing the budget. It should have effective systems for delegating financial authorities as to provide administrators in different levels with flexibility to make financial decisions governed by an accurate accountability system.

Evidence
- *Effective planning, provision and management of financial resources, which are accurately assessed and integrated with academic priorities and programme requirements;*
- *Availability of adequate financial resources to achieve, maintain, and enhance institutional programmes and services to enable students to attain the required programme outcomes;*
- *Adequate level of financial resources that provides a reasonable expectation of financial viability and institutional improvement;*
- *Good management of institutional financial affairs that is subjected to regular external audit.*

7. Facilities and infrastructure

Criterion

> *The provision of physical resources to meet academic requirements is effectively planned and reviewed.*

Explanation

The institution should design education buildings and facilities or modify them to fulfill the needs of teaching and learning required by the academic programs and its activities and services. It should ensure that education buildings and facilities are safe and healthy in order to provide high quality service.

Evidence
- *Effective planning and provision of physical resources, which are accurately assessed and integrated with academic priorities and programme requirements;*
- *Availability of sufficient and appropriate physical resources to enable students to attain the required programme outcomes; and*
- *Physical resources that are reviewed and maintained to ensure that they are fit for the purpose.*
- *Facilities of the institution are clean and attractive and are being maintained.*
- *The educational facilities meet the standards of safety and are adequate for the use of persons of special needs.*
- *The institution provides administration, maintenance and operation of the educational facilities in a sufficient manner that ensures achieving the requirements of necessary quality and safety whether while implementing the academic programs or while providing the rest of services of the institution.*

8. Institutional/Educational Effectiveness

Educating competent graduates is one of the core activities of an institution. To determine the quality of the teaching/learning process and the quality of curricula, faculties/departments one have to evaluate the programs individually. The outcomes must be used to get a general overview of the quality of the educational provisions. For self-analysis at program level and the criteria on teaching/learning, see chapter 7 of the handbook.

The outcomes of the self-assessment at program level will be used for assessing the average quality of the core activity teaching and learning of an institution. At the institutional level an analysis need to be made from the following aspects:

      8.1 The programs
      8.2 Student assessment
      8.3 Field attachment/workplace training components
      8.4 Program delivery
      8.5 Quality of the staff
      8.6 Students admission
      8.7 Facilities and infrastructure

8.1. The programs

Criterion

- *The programs at offer in the institution:*
-   *are meeting the expectations of the stakeholders*
-   *are meeting the current competence requirements*
-   *have clearly formulated expected learning outcomes*
-   *are coherent*
-   *are up-to-date*
- *Stakeholders have appropriate opportunities to be involved in review of program outcomes.*

Explanation

The programs at offer in the institution should be in line with the expectations of the stakeholders and should be in line with the mission and vision of the institution. The objectives and the expected learning outcomes[16] must make this clear. The programs should be in line with the current expected competence requirements.

Evidence

- *Qualifications are guided by current labour market demand. Formulation of the job profile is based on occupational analysis to incorporate current competence requirements;*
- *Curriculum (programme) development process is guided by job profile*
- *Clear and concise programme regulations, which are consistent with the level of the qualification and with the institution's academic policies and procedures;*
- *Curriculum development process includes inputs from internal and external stakeholders;*
- *The completion of curriculum approval processes which include appropriate input by external and internal stakeholders. This includes the development and approval of awards and qualifications associated with the programme.*
- *Development and approval processes for revised or extended programmes, which are consistent with the requirements for establishing a new programme at that level.*

8.2. Student assessment

Criterion

- *The institution has well functioning student assessment systems through all programs at offer and clear rules to assure the quality of the assessments.*
- *The institution I has a clear policy to promote that the examinations are objective, equivalent and trustworthy*
- *The institution take care of the consistency of the examinations; consistency between the programs and consistency in time*
- *The institution has a policy to promote a variety of assessments methods*
- *The institution takes care that examination committees function adequately and performs the statutory task.*
- *Students have an opportunity to appeal the results of assessment in a manner that is fair and equitable.*

Explanation

Student assessment is an important element in Technical Education. The outcomes of the assessment have a profound effect on students' future careers. It is therefore important that assessment is carried out professionally at all times and takes into account the extensive knowledge that exists on testing and examination processes. Assessment also provides valuable information for institutions about the efficiency of teaching and learner support. It is the responsibility of the faculty/department to assure the quality of the student assessment. The central management must have a good policy and good control mechanism to check the decentralized activities.

Student assessment procedures are expected to:
- be designed to measure the achievement of the intended learning outcomes and other program objectives;
- be fit for purpose, whether diagnostic, formative or summative;
- have clear and published grading/marking criteria;
- take account of all the possible consequences of examination regulations;
- have clear regulations covering student absence, illness and other mitigating circumstances;
- ensure that assessments are conducted securely in accordance with the institution's stated procedures;
- be subject to administrative verification checks to ensure the accuracy of the procedures;

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[16] **Learning outcome**: *A learning outcome is the specification of what a student should learn as the result of a period of specified and supported study (INQAAHE,: Harvey, L., 2004–6, Analytic Quality Glossary, Quality Research International). See also section 1.3.1 of this handbook.*

- inform students clearly about the assessment strategy being used for their program, what examinations or other assessment methods they will be subject to, what will be expected of them, and the criteria that will be applied to the assessment of their performance.
-

Evidence
- *Pegging the learning outcomes prescribed for a particular qualification with corresponding assessment criteria and credit values;*
- *Implementation of procedures for the moderation of assessment for all programs and a process for ensuring that the results are used as feedback for ongoing improvement of the program;*
- *Mechanisms to ensure consistency of assessment of learning outcomes where different modes of delivery are utilized for students enrolled on different programs leading to the same qualification, or where the same program is delivered on more than one site.*
- *Student appeals procedures, which are made known to students and present no unreasonable barriers to access i.e. students should understand the details of appeal procedures and should have access to them without prejudice; and*
- *Records of student appeals and outcomes, which demonstrate the fairness and equity of the process.*

8.3 Field attachment/workplace training components

Criterion

> *Field attachment/workplace training components are effective and integrated into curricula*

Explanation
Field attachment, practical work and workplace training are essential elements in a competence oriented program.

Evidence
- *Consistency between the learning outcomes and assessment strategies of the field attachment/workplace training components of programs and the aims and philosophy of those programs;*
- *Collaboration of training institution with stakeholders during the development of the rationale for the field/work-based training components of programs;*
- *The use of clear criteria that address both academic and safety issues for the selection and monitoring of suitable training sites; and*
- *Clear definition of the respective responsibilities of staff, students and industry personnel, and mechanisms in place to ensure that these responsibilities are fulfilled.*

8.4 Program delivery

Criterion

> *The institution fosters good teaching-learning process*

Evidence
- *Established policies and procedures to foster and evaluate good practice;*
- *Delivery modes and teaching-learning methods appropriate to the level and contents of the program as well as to the class size of learners;*
- *Modular delivery of courses to enhance flexibility to learners and promotion of transfer of credits;*
- *Delivery modes designed to address a diversity of student learning styles and needs;*
- *Appropriate access for students to learning resources; and*
- *Systematic and valid student evaluation of teaching practice linked to ongoing quality improvement.*

8.5. Quality of Staff

Criterion

- *Appropriately qualified staff is employed to enable quality provision of programs.*
- *The institution actively encourages the development of all staff.*

Explanation

The quality of the academic staff is the key to the quality of the institution. There will be no quality without qualified and competent staff. Looking at the criteria, we have to look at:
- The size of the staff and their qualifications
- The staff/HR management.

Evidence
- *The institution has sufficient academic and support staff with appropriate qualifications and experience to meet program development and delivery requirements.*
- *Appropriate and effective staff induction processes;*
- *Systematic performance review of all staff, which is used to recognize excellent practice;*
- *Effective planning and monitoring of outcomes of appropriate staff development opportunities that have been agreed and negotiated with each staff member. Planning for professional development should have the overall objective of enhancing student learning;*
- *The availability of sufficient resources to enable planned staff development to take place; and*
- *Availability of induction programs, performance review and professional development opportunities to part-time and temporary staff.*

8.6. Students information and admission

Explanation

It is important to attract the right students and to select the students that can finish the training.

Criterion
- *Prospective and continuing students have effective guidance to assist them in making informed decisions on their programme of study*
- *Entry and selection criteria are appropriate for the level of each programme, are well publicised, and are applied consistently.*
- *The institution has implemented effective credit transfer policies and procedures*
- *The institution makes appropriate provision for the recognition of prior learning and current competency for its enrolled students.*

Evidence
- *The provision to students of timely and accurate information on credit transfer, cross crediting and opportunities for the recognition of prior learning; and*
- *The provision of assistance to students in making informed and appropriate choices in the selection of programs.*
- *Clear and appropriate admission and selection criteria, which are published, accessible to students and include no unreasonable barriers;*
- *Records of student selection decisions that demonstrate consistent application of the criteria.*
- *Absence of unreasonable barriers to credit transfer and cross crediting;*
- *The provision to students of timely advice and decisions on credit transfer and cross credits.*
- *the provision and promotion to students of effective services for recognition of prior learning and recognition of current competency assessment appropriate to the program of study.*

8.7. Facilities and infrastructure

Criterion

The provision of physical resources to meet academic requirements is effectively planned and reviewed.

Explanation

Facilities and resources should be in line with the formulated goals and aims and with the designed program. Facilities are also connected to the teaching/learning strategy. For example, if the philosophy is to teach in small working groups, small rooms must be available. Computer-aided instruction can only be realised with enough computers for the students. The main learning resources consist of books, brochures, magazines, journals, posters, information sheets, Internet and intranet, CD-ROMs, maps, aerial photographs, satellite imagery and others.

Evidence

- *Effective planning and provision of physical resources, which are accurately assessed and integrated with academic priorities and program requirements;*
- *Availability of sufficient and appropriate physical resources to enable students to attain the required program outcomes; and*
- *Physical resources that are reviewed and maintained to ensure that they are fit for the purpose.*

Teaching rooms
- *Are enough lecture halls, seminar rooms, laboratories, reading rooms, and computer rooms available? Do these meet the relevant requirements?*
- *Is the library sufficiently equipped for education?*
- *Is the library within easy reach (location, opening hours)?*
- *Are laboratory facilities and support staff sufficient?*
- *Do the laboratories meet the relevant requirements?*

Didactic aids and tools
- *Are sufficient audio-visual aids available?*
- *Are there enough computers? Appropriate and enough computer programs (computer-aided education, maths programs, design programs, etc)?*
- *To what extent do the facilities/infrastructure promote or obstruct delivery of the program?*
- *Is the total budget for aids and tools sufficient?*

9. Community contribution

Criterion

> *The institution has clear guidelines for consultancy and community outreach*

Explanation

The institution is not only responsible for teaching and (if applicable) doing research. It is also responsible for serving society. Consultancy involves a broad range of activities. In general, the term consultancy covers the provision of professional advice or services to an external party for a fee or other non-monetary consideration. Among other things, guidelines on providing consultancy cover the following:
- Policy objectives
- Policy on key policy principles, compliance, accountability framework, legal and financial protection, conflicts of interest
- Procedures for the contribution to society and the community
- Procedures for institutional/academic consultancy
- Procedures for private consultancy

Evidence
- *What role does the institution play in the local, national and international community*
- *What are the key activities, which of these lay outside normal teaching or research? How do they relate to the institution's mission?*
- *What are the non-profit activities of the institution?*
- *Is there a clear policy on consultancy and the contribution to society and the community?*
- *How is the income from consultancy regulated?*

10. Benchmarking

Criterion

> *The institution uses the instrument of benchmarking for analyzing the quality of its core activities and its management*

Explanation

The UNESCO definition of benchmark is: A standard, a reference point, or a criterion against which the quality of something can be measured, judged, and evaluated, and against which outcomes of a specified activity can be measured. The term, benchmark, means a measure of best practice performance. The existence of a benchmark is one necessary step in the overall process of benchmarking.

NACTE defines benchmarks as:
A systematic and continuous measurement process; a process of continuously measuring and comparing an organization business process against business leaders anywhere in the world to gain information which help the organization to take action to improve its performance [17]

Benchmarking is a process that enables comparison of inputs, processes or outputs between institutions (or parts of institutions) or within a single institution over time. It is important for a n institution to compare its functioning with equivalent institutions in the country, the region and internationally.

Evidence
- *Is the institution using the instrument of benchmarking? How is it using the instrument?*
- *Does the executive management use the collected information?*
- *What is done with the benchmarking?*

11. Quality Assurance

Criterion

> *The institution has an efficient internal quality assurance system*

Explanation

A robust and well functioning system of internal quality assurance is necessary to deliver quality and to provide "consumer" protection.

Evidence

To find evidence that the IQA system is working well, one has to evaluate the IQA system in the framework of the institutional self-assessment. For the self-assessment of the IQA system, see chapter 5 of the handbook.

When the self-assessment will be followed by institutional accreditation and there has not yet been a Quality Audit, the institution must conduct a self-assessment of the QA-system too.

12. Achievements

Criterion

> *An institution has the means and the opportunity to check whether the achievements are in line with the expected outcomes.*

Evidence
- *Are the achieved outcomes (our graduates; the research output; services to society) in line with the formulated goals and aims?*

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[17] *NACTE, Benchmarks for Comparing Performance Across Courses and Across Technical Institutions, January 2004.* The publication offers a lot of information about the benchmark process.

- *How does the institution check that it achieves what it wants to achieve?*
- *If the achievement is not satisfactory, what remedial action does the institution take?*

13. Stakeholder satisfaction

Criterion

An institution has a structured method for obtaining feedback from the stakeholders

Explanation

After analyzing the mission of the institution, the management structure, policy and strategic planning, human resource management and the core activities, the institution has to analyse the satisfaction of all stakeholders. What do they think about the performance? How do we know that?

Evidence
- *Is regular student evaluation carried out? How is it done? Is it adequate?*
- *What is done with the results of student evaluations?*
- *Does the TI have an insight into the opinion and feedback of graduates when they are employed?*
- *Are the complaints or positive feedback received from alumni used to adapt the programs?*
- *Are there any structured contacts with employers and the labour market for obtaining feedback?*
- *How do the employers appreciate graduates?*
- *Are there any specific complaints?*
- *Are specific strengths appreciated by employers?*
- *Does the TI have any tools to obtain feedback from society?*

6.3 The Self-assessment report (SAR)

After finishing the SWOT-analysis of the institution, one will write down the outcomes of the assessment in a Self Assessment Report (SAR). The SAR is an important document. At the one hand it contains the basic information for the Institutional Accreditation by the NACTE expert team that will come and assess the institution. On the other hand it is the basic document for the institution for the formulation of a quality improvement plan for the coming years.

The content of the SAR follows the lines of the aspects, discussed during the self-assessment process. For each aspects to be treated one should:
- describe clearly the state-of-the art. An outsider must understand the situation.
- analyse the situation. What is your opinion about it? Satisfied or not? If not, why not?
- Describe how far you meet the formulated criteria. What evidence can you provide?
- describe the weakness and the strengths.

Content of the self-assessment report

Table 9 defines the content of the self-assessment report. Be sure to discuss the report within the institution and ensure that everybody is able to recognise himself/herself in this picture.

Table : Content of a self-assessment report at institutional level.

Introduction
• *How was the self- assessment carried out?*
• *Composition of the SAR team*
• *Short description of the institution and its departments*
• *The specific profile of the institution*
Chapter 1: Requirements and expectation stakeholders
Chapter 2: The organisation
2.1 Mission, vision, aims and objectives
2.2 Institutional integrity
2.3 The policy plan
2.4 Governance and Administration
2.5 Human Resource
2.6 Funding and financial management
Chapter 3 Educational effectiveness
3.1 The programs
3.2 Student assessment
3.3 Field attachment/workplace training components

3.4 Program delivery 3.5 Quality of the staff 3.6 Students admission 3.7 Facilities and infrastructure	
Chapter 4: Community service	
Chapter 5: Quality Assurance 5.1 Internal Quality Assurance 5.2 Benchmark	
Chapter 6 :Achievements of the institution 6.1 graduates/graduate profile 6.2 Research output (as far as applicable) 6.3 Community services	
Chapter 7 Strengths-weaknesses analysis 7.1 Summary of strengths 7.2 Summary of weaknesses	
Summary of the recommendations	

6.4 Strengths/weaknesses analysis

The self-assessment is followed by a strengths-weaknesses analysis. At the same time, this serves as a check to see how far the institution is in compliance with the given criteria. This is best done, using the checklist (see Appendix 2) and summarizing the outcomes in table 6. The different aspects of the quality of the institution will be assessed on a scale 1-7. The marks have the following meaning:

> 1 = absolutely inadequate; immediate improvements must be made
> 2 = inadequate, improvements necessary
> 3 = inadequate, but minor improvements will make it adequate
> 4 = adequate as expected
> 5 = better than adequate
> 6 = example of good practice
> 7 = excellent

The overall assessment of the different aspects is based on the scores given to each sub-aspect in the category. But, of course not all sub-aspects have the same weight. This means that you cannot calculate mathematically an average. You have to balance the various sub-aspects and judge the importance of each of them. Aspects with positive outcomes may compensate for some negative ones. Summarizing the outcomes per category is not a mathematical enterprise, nor ticking boxes. One has to balance the importance of each criterion. The same counts for the overall judgment of the quality of the institution. One cannot calculate the average of the categories, but look at the importance of the category. Community contribution and benchmarking are less important than Educational effectiveness or Quality Assurance.

Summarizing the outcomes for each category shows the strengths and weakness of the institution. See table 10

Table 10: summary quality aspects institutional analysis

no		1	2	3	4	5	6	7
1	Requirements stakeholders							
2	Mission, vision, aims, objectives; integrity							
3	Policy plan							
4	Governance & administration							
5	Human resource							
6	Funding & Financial management							
7	Facilities & infrastructure							
8	Educational effectiveness							
9	Community contribution							
10	Benchmarking							
11	Quality assurance							
12	Achievements							
13	Satisfaction stakeholders							
	Overall judgment							

Summary of strengths

Summaries the points that the institution considers to be its strengths and mark the points that you are proud of.

Summary of weaknesses
Indicate which points the institution considers to be weak and in need for improvement. Also indicate what you are going to do about this.

For the improvement of the weaknesses, the institution must include actions in the Quality improvement plan. Only with a clear follow up and a quality and action plan, the investment in the self-assessment and the SAR make sense.

6.5 Preparation for the Institutional accreditation

The self-assessment of the institution will be followed by a institutional accreditation by NACTE. To prepare the institution for the accreditation, the following is important:
• Take care that the SAR is on time at NACTE
• Take care that the SAR is informative, analytical and honest. The SAR is the basic information for the audit team
• Take care that all staff and students knows about the SAR
• Take care that during the site the most important documents, showing evidence that you are meeting the criteria are displayed for the audit team
• Take care that everybody is available for interviews during the site visit.

7. HOW TO DISCOVER THE QUALITY OF OUR PROGRAMS?

NACTE has the task to validate and approve the programs of an institution. A instrument for assessing the quality of the programs is program accreditation. The input for the Program Accreditation is the self-assessment report (SAR) of the department and the program involved.

Because it will not be possible to have an assessment with site visits, NACTE might use the following modalities:

1. *The Institutional Accreditation showed some doubts about the program(s) in the institution and NACTE will verify the quality by an individual Program Accreditation.*
2. *NACTE takes the initiative and announces a nation wide Program Accreditation for a certain type of programs (e.g accountancy or nursing). An advantage of the nation wide approach is that there is a possibility of benchmarking of the programs in the different institutions. This comparative character of the Program Accreditation makes it possible to have a good overview of the state-or-f-the-art in that discipline/subject. The programmes involved are expected to conduct a self assessment. An expert team, installed by NACTE, will assess the quality without site visit*
3. *The institution ask NACTE to organise a program accreditation*

The basic information will always be the SAR. Even when no Program Accreditation is foreseen, it is worthwhile for the institution to conduct a self-assessment of the department and its program(s) do find out the weakness and strengths of the department. This chapter offers the instrument of self assessment of the program(s)

7.1 An analysis Model for the Self-Assessment of the department and its programs

In order to map the quality in a self-assessment we need a clear model to prevent looking at some aspects and ignoring others. Figure 11 shows a model for the analysis of quality of our programs. For the critical self-assessment, this analysis model will be used

Concerning criteria we have to keep in mind that there are no absolute and objective criteria and standards. The criteria for assessing the quality given in the handbook are based on the criteria as formulated by external quality assessment agencies, e.g. European, American, Asian, Australian and South African accrediting bodies, among others. After studying many sets of standards and criteria, a common denominator has been formulated. The criteria for validation of Curricula, formulated by NACTE [18]are included in the model.

For each aspect, the following format is used:
- The name of the cell in the model is given, just as the title of the aspect that will be treated, e.g. *Learning Outcomes*
- The Criterion concerning that aspect is given in a box. The criterion shows what commonly is expected form an institution.
- If NACTE is not mentioning a specific criterion, but the criterion is seen internationally as important, the criterion is mentioned.

Looking for evidence
A set of questions and/or statements is drawn up to help the department to find evidence if the criteria are being met. Please be aware of the following as far as these questions are concerned:
- *The questions-set are not meant as a compulsory list that has to be completed. It is not a questionnaire to be answered point by point. It must be seen as a tool to collect information and evidence. The questions are to be seen as reminders.*
- *The statements will help you to demonstrate that you are meeting the criterion.*

The basic rules to apply in self-assessment are:
- All aspects (segments of the model) need to be discussed. It is not possible to make a selection.
- For each aspect the following steps are to be taken:
  - description

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[18]   NACTE, Procedures for Curriculum Approval and Validation, August 2004.

- analysis
- evidence for meeting the criteria
- formulation strengths and weaknesses
- action plan for improvement

Figure 11: An analysis model for the self-assessment of Teaching and Learning
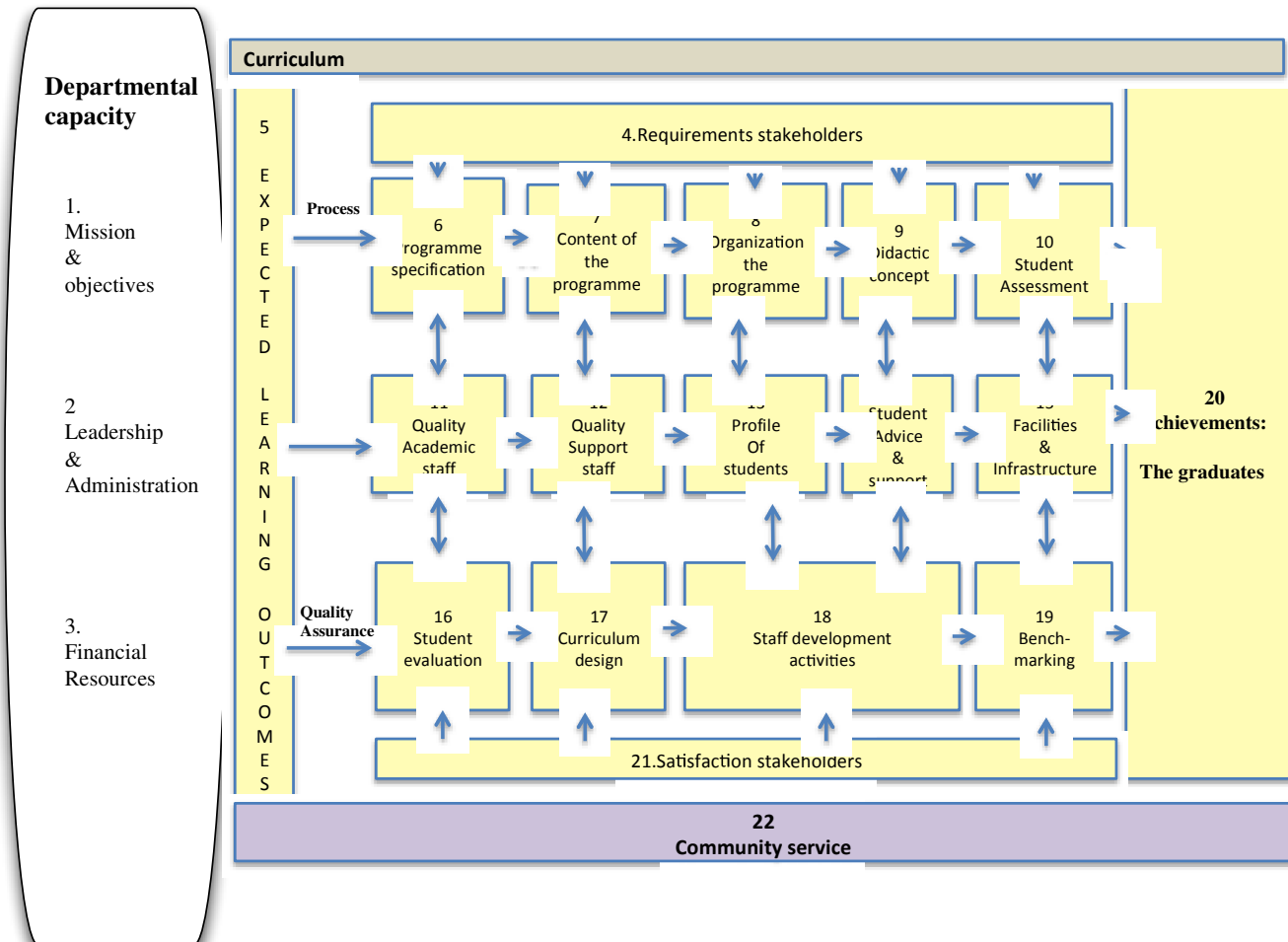
7.2. The self-assessment: the quality aspects to be assessed

A: THE DEPARTMENT

1. Mission and objectives

Criterion

> - *The mission of the department is consistent with the mission of the institution. It is applied based on specific objectives and requirements associated with the nature of specialization. It should be clearly stated and be influential in guiding, planning and implementing the program.*
> - *The mission of the department is the guide for the processes of planning and decision-making. It is carefully employed while preparing and reviewing the academic program.*
> - *The program and its objectives are periodically reviewed in light of performance assessment and the interaction of implementers of programs with their surrounding.*

Explanation

The program should have a mission, objectives and learning outcomes that are consistent with the mission and objectives of the department and the educational institution, and that reflect what is planned for students to gain from studying the program. The mission and objectives should guide the

processes of planning and decision-making. Also the mission is employed while preparing and reviewing the program and in all the program's activities and it is considered a reference when assessing its effectiveness.

Evidence
- *The department has a mission and objectives prepared through participation of all concerned persons. It is publically known for beneficiaries inside and outside the department.*
- *The mission and objectives of the department reflect its nature, educational role, social responsibility and future requirements.*
- *The mission and objectives of the department are consistent with the mission and objectives of institution.*

2. Leadership and administration

The administration of the department should reflect appropriate balance between commitment to accountability before the senior management of the institution and the flexibility needed for achieving the specific requirements of the academic program. The concerned parties should be involved in the processes of planning (such as students, specialized bodies, representatives of industry or commerce or the external entity benefitting from the graduates, and faculty members) in developing the objectives and purposes and reviewing the achieved results and responding to them.

2.1 Strategic planning

Criterion
- *The department plans to achieve its mission and objectives and assess the extent, way and quality of achieving its mission and objectives. Results of the annual assessment are used in the processes of continuous comprehensive planning and assessment.*
- *The department ensures the participation of all councils, committees, administrations, faculty members and students in planning and assessment.*
- *The department periodically reviews the assessment processes and planning activities to ensure their effectiveness.*

Evidence
- *The department pursues strategic planning based on complete analysis of current situation, identifying the gap between it and its desired measurable objectives, and prepares plans to fill the gap. It also searches for the suitable funding so they become achievable.*
- *The department evaluates its activities including teaching, learning, research and community service in light of its mission and objectives. Results of the assessment are used to improve the quality of the academic programs, services and activities.*
- *The department provides the necessary resources for the processes of planning and assessment.*

2.2 Head of the Department/Program

Criterion

The head of the department decides on the program's priorities, prepares development plans, supports administrators and faculty members and the environment of teaching and learning as to achieve the mission and objectives of the program. There is also clear specification of the responsibility of the academic program.

Evidence
- *A head is appointed for each program according to the laws in force. He/she is responsible of managing the academic and administrative affairs of the department and matters of research (if applicable) and community service.*
- *The head of the department provides all the required documents to the council of the department when presenting the academic and administrative topics that needs the approval of the council. He also ensures that the recommendations he offers are presented in a way that shows the different options and what results of each of them.*

2.3 Administration

Criterion

> The council of the department is responsible in the first place of the quality and credibility of implementing the program. It should give priority for the effective development of the program as to ensure the interests of the students and community it serves.

Evidence
- The tasks, responsibilities and key requirements for governing the department and program and the administrative procedures are clearly set and published.
- The department/ program periodically assesses its performance and reviews its policies whenever is necessary to ensure the effective undertaking of responsibilities.

3. Financial resources

3.1 Financial planning and the budget

Criterion

> The process of financial planning is directed to achieve the objectives and priorities of the program.

Explanation

The financial resources should be sufficient for the adequate implementation of the academic program. Requirements of the program should be introduced sufficiently and in advance to prepare the budget according to scientific bases. The budget should allow for long-term planning at least for three years. Sufficient amount of the flexibility needed for the effective administration and responding to unexpected events should be available. This flexibility should be associated with suitable mechanisms for accountability, transparency and report submission.

Evidence
- Requirements of the program are inserted into the annual budget of the institution in consultation with the procurement administration, and they are reviewed carefully before approving them.
- The institution has a policy for linking the financial planning with its strategies and objectives.

3.2 Financial management

Criterion

> - Financial affairs should be effectively managed as to ensure balance between the required flexibility in units and the central accountability and responsibility.
> - The budget and accounts of the department are managed by a specialized financial manager.

Evidence
- The program has a sufficient budget.
- The head of the department or the program coordinator participates in preparing the budget and is responsible for spending within the frame of the approved budget.
- Spending authorities are clearly defined with monitoring the commitment to that in the annual review.

B: The quality of the program/curriculum

4. Requirements stakeholders

Criterion

> The department, responsible for the program has a clear idea about the relevant demands and needs of all stakeholders, based on situation analysis

Explanation

There are many players in the field of Tertiary Education. Tertiary Education has many stakeholders and all stakeholders have their own ideas about quality:

• The government or the state
• The employers
• The academic world
• The students
• The parents
• The Society at large

Each stakeholder will appreciate different aspects of quality and because all stakeholders have their own ideas and expectations, we may say that *Quality is a matter of negotiating between the institution and the stakeholders.* In this negotiation process, each stakeholder needs to formulate, as clearly as possible, his/her requirements. The organization (=faculty or department) as supplier of the academic training must try to reconcile all these different wishes and requirements. As far as possible, the requirements of all stakeholders should be translated into the expected learning outcomes of the program.

Evidence

• *Does the department have a clear idea about the requirements set by the government?*
• *How does the department know the needs and requirements of the labour market?*
• *Does the department conducted situation analysis or is the knowledge about requirements of stakeholders based on situation analysis, done by others (e.g. NACTE)?*
• *How does the department analyse the needs and requirements of the students/parents*
• *How does the department analyse the needs and requirements of the society?*
• *How does the department n balance the requirements of the different stakeholders?*

5. Expected learning outcomes

Criterion

The program/curriculum has clearly formulated learning outcomes (knowledge, skills, attitude) reflecting the relevant demands and needs of all stakeholders, especially the labour market

The expected learning outcomes are competence based

The program has formulated learning outcomes on entrepreneurial skills

The program has a learning outcome, enabling the student to get a gender sensitive attitude

Explanation

Before we can assess the quality of our program, we need to know clearly what we expect that students will learn. We must formulate very clearly the *learning outcomes*. Students come to the HEI to learn something. Therefore, we have to formulate very clearly what we expect the student to learn and what we expect our graduates have learned in terms of knowledge, skills and attitude. The expected learning outcomes form the starting point for the self-assessment. We have to distinguish between generic academic skills and discipline specific skills.

Special attention must be paid to the formulation of learning outcomes, promoting entrepreneurial skills and learning outcomes promoting a gender sensitive attitude.

Some definitions:
• **Aim**: An aim is an overall specification of the intention or purpose of a programme of study or institutional mission or policy.
• **Learning outcome**: A learning outcome is the specification of what a student should learn as the result of a period of specified and supported study (*The graduate will be able to…..)*
• **Program Objective**: An objective is a specific statement about what we expect from the program (*the program will contribute to a better understanding…*)

Evidence
- *What are the expected learning outcomes (ELO) of the program?*
- *Are the ELO's based on a Job profile/qualification standard, formulated by NACTE?*
- *Are the ELO's in line with the NTA level?*
- *How does the ELO fit into the mission of the institution as a whole?*
- *Does the labour market express specific requirements for graduates to meet? Is there a well-defined job profile for the graduates of this program?*
- *Does the formulated learning outcomes offer the student the possibility to acquire entrepreneurial skills?*
- *Enable the learning outcomes the students to acquire a gender sensitive attitude?*
- *How are the ELO's made known to the staff and the students?*
- *To what extent do we think the ELO's have been realised?*
- *Do we have any plans to adjust the ELO's? Why?*

THE PROCESS (CELL 6-10)

6. The Program specifications (or program description)

Criterion

The department publish, for each program they offer, a program specification/description which gives the intended learning outcomes of the program in terms of:
- *knowledge and understanding that the students will have acquired upon completion of the program*
- *cognitive skills, such as an understanding of methodologies or ability in critical analysis*
- *subject specific skills, such as laboratory skills, clinical skills, etc.*

Explanation

The formulated learning outcomes must be translated into the program. It is important that the objectives are well known to everybody. Therefore, the department will publish a program specification or description for each program they offer. The program specification is:
- As a source of information for students
- As a source of information for employers, particularly about the skills and other transferable intellectual abilities developed by the program.
- As a source for professional and statutory regulatory bodies, accrediting Technical Education programs, leading to entry into a profession or other regulated occupations.

Evidence
- *Does the department have a clear program/curriculum specification/description?*
- *What is the content of the description?*
- *Is the description known to staff and students?*

7. The content of the program/curriculum

Criterion

- *The program shows a balance between specialist contents and general knowledge and skills.*
- *The program takes into account and reflects the vision, mission, aims and objectives of the institution.*
- *The objectives and expected learning outcomes of the program are explicit and are known to staff and students.*
- *The program shows the expected learning outcomes of the graduate. Each course should clearly be designed to show the expected learning outcomes of the course. To obtain this, a curriculum map must be constructed. A program map must be available.*
- *The program shows evidence of attention to develop entrepreneurial skills*
- *The program shows evidence of attention to develop a gender sensitive attitude*

Explanation

The content of a program is closely linked to the translated goals and aims. The formulated learning outcomes decide the content of the program. Furthermore, the program must be coherent and up-to-date. For each course it should be clear how it contribute to the achievement of the overall learning outcomes.

Evidence
- *Do the contents of the program reflect the expected learning outcomes?*

- *Can the program be considered as adequate for achieving the expected outcomes?*
- *Are the courses in the program clearly interrelated?*
- *Is the program coherent?*
- *Is there a balance between specific and general courses?*
- *Do the courses demonstrate a growing complexity?*
- *Is the program content up-to-date?*

8. The organisation of the program

Criterion

> - *The program is designed in such a way that the subject matter is integrated and also strengthens other courses in the program*
> - *The program shows range, depth and coherence of the courses*
> - *The program is organised in a modular way*

Evidence
- *Why is this program structure chosen?*
- *How are the modules organised?*
- *Has the program been changed structurally over recent years? If so, why?*
- *Were any requirements specified on the internal coherence of the courses? Who set these requirements?*
- *Are bottlenecks experienced within the program?*
- *Is the instruction/teaching provided by other departments satisfactory?*
- *Is the chosen academic year structure (trimester or semester) adequate? What is the opinion of those involved ?*

9. Didactic concept and teaching/learning strategy

Criterion

> - *The faculty has a clear didactic concept*
> - *The didactic concept is student oriented. Hence, the conception of teaching is the facilitation of learning.*
> - *In promoting responsibility in learning, teachers should:*
>   - *create a teaching-learning environment that enables individuals to participate responsibly in the learning process*
>   - *provide curricula that are flexible and enable learners to make meaningful choices in terms of subject content, program routes, approaches to assessment and modes and duration of study*

Explanation
Didactic concept means *the strategy developed by the institution/department with regard to the didactic and pedagogical approach in the program.* What didactic and pedagogic approaches are practised? Of course there is not a single didactic concept that is valid for all. However, at least one has to think about the didactic model behind the program.

Evidence
- *Is there an explicit didactic concept and teaching learning strategy shared by all staff members? Is this adequate?*
- *Are the instructional methods used (organisation of self-instruction for students, size of classes, organisation of seminars, practical courses/internships etc.) satisfactory?*
- *The role of the computer in the program?*
- *Is there sufficient variety in the teaching/learning methods?*
- *Circumstances that prevent the use of desired instructional methods (number of students, material infrastructure, lecturer skills)?*

If research is a done by the department:
- *When do students come into contact with research for the first time?*
- *How is the interrelationship between education and research expressed in the program?*
- *How are the research findings included in into the program?*

The practical training of students (trainees) is a specific aspect in the didactic concept. Describe the position given to practical training in the program:

- *Is practical training a compulsory part? Size in credit points.*
- *Have any criteria been formulated for the practical training to comply with?*
- *Preparation of practical training in the program (concerning content, method and skills).*
- *Is the level of the practical training satisfactory?*
- *Are there any bottlenecks in the practical training? If so, what causes them?*
- *How are students coached?*
- *How is the assessment done?*

10. Student assessment

Criterion

> - *The system of assessments and examination provides an effective indication whether the students have reached the expected learning outcomes of the program or its components.*
> - *The tests, evaluations and examinations are in line with the content and learning objectives of the various parts of the program.*
> - *The program provides individual students with adequate feedback concerning the extent to which the various learning objectives have been achieved.*
> - *The program ensures adequate consistency of the student assessments.*
> - *The assessment is adequately organized (as regards e.g. announcement of the results, opportunities to re-sit tests or examinations, compensation arrangements etc.).*
> - *The examination committee functions adequately and performs its statutory tasks*

Explanation

Student assessment is one of the most important elements of education. The outcomes of such assessment have a profound effect on students' future careers. It is therefore important that assessment is carried out professionally at all times and takes into account the extensive knowledge that exists on testing and examination processes. Assessment also provides valuable information for institutions about the efficiency of teaching and learner support.

Student assessment procedures are expected to:
- be designed to measure the achievement of the intended learning outcomes and other program objectives;
- be fit for purpose, whether diagnostic, formative or summative;
- have clear and published grading/marking criteria;
- be undertaken by people who understand the role of assessment in the students' progression towards achieving the knowledge and skills associated with their intended qualification; where possible, not relying on the verdicts of single examiners;
- take into account all the possible consequences of examination regulations;
- have clear regulations covering student absence, illness and other mitigating circumstances;
- ensure that assessments are conducted securely in accordance with the institution's stated procedures;
- be subject to administrative verification checks to ensure the accuracy of the procedures;
- inform students clearly about the assessment strategy being used for their program, what examinations or other assessment methods they will be subject to, what will be expected of them, and the criteria that will be applied to the assessment of their performance.

Evidence
- *To what extent do the assessments and examinations cover the content of the courses and program? To what extent do the assessments and examinations cover the objectives of the courses and of the program as a whole?*
- *Do the assessments have clear and published grading/marking criteria? Are the pass/fail criteria clear?*
- *Are a variety of assessment methods used? What are they?*
- *Are the assessment/examination regulations clear?*

- *Are the procedures clear? Are they well known? Well followed?*
- *Are any safeguards in place to ensure objectivity?*
- *Are the students satisfied with the procedures? What about complaints from students?*
- *Do clear rules exist for re-assessments and are students satisfied with these?*

A special form of student assessment is the final project (essay, thesis or assignment). This requires students to demonstrate their knowledge and skills and their ability to manipulate the knowledge in a new situation.
- *Do clear regulations exist for the final project/final essay?*
- *Are the criteria for the final project clear?*
- *Is the level of the final project/final essay satisfactory?*
- *Do any bottlenecks exist for producing the final project? If so, why?*
- *Describe how students are coached.*

INPUT VARIABLES (CELL 11-15)

A department's quality not only depends on the program itself. We also have to look at the input:
- The quality of the program will be near impossible to achieve without qualified and competent teaching staff and support staff
- The quality of the entering student will influence the quality of our process and the quality of the output.
- Not only the human resources are important; so too are the financial resources, i.e. the programs funding and financing for the facilities.

11. Quality of the teaching staff

Criterion

> - *The staff is competent and qualified*
> - *The size of the teaching staff is sufficient to deliver the curriculum and suitable in terms of the mix of qualifications, experience, aptitudes, age, etc.*
> - *Recruitment and promotion of academic staff are based on merit system, which includes teaching, (research) and services*
> - *Duties allocated are appropriate to qualifications, experience, and aptitude.*
> - *Time management and incentive system are directed to support quality of teaching and learning.*
> - *There are provisions for review, consultation, and redeployment.*
> - *Termination, retirement and social benefits are planned and well implemented.*
> - *There is a well-planned staff appraisal system based on fair and objective measures in the spirit of enhancement which are carried out regularly*

Explanation

The quality of a program depends on the interaction between the staff and the student. We expect that the staff is competent and qualified. Competent teaching staff is able to:
- design and deliver a coherent teaching and learning program
- apply a range of teaching and learning methods and select methods most appropriate to desired learning outcomes
- employ a range of techniques to assess students' work and match these to intended learning outcomes
- monitor and evaluate their own teaching performance and evaluate programs they deliver
- reflect upon their own teaching practices

Size of the staff and their qualifications
Use table 10 to specify the number of staff. Mention possible vacancies separately, and specify the reference date for the data. Specify the staff/student ratio and the staff/graduate ratio as per table 11.

Table 10: Teaching staff in the program

Rank	Full time	Part time	Total
Assistant Tutor II			
Assistant Tutor I			
Tutor/instructor II			
Tutor/instructor I			
Senior Tutor/instructor II			
Senior Tutor/instructor I			
Principal Tutor/instructor II			
Principal Tutor/instructor I			
Chief Tutor/instructor II			
Chief Tutor/instructor I			
Tutorial assistant			
Assistant Lecturer			
Lecturer			
Senior Lecturer			
Associate professor			
Professor			
Guest Lectures from industry			

Table 11: Staff/student ratio and staff/graduate ratio (please specify the year)

Number of staff	Number of Students	Number of graduates Year:	Number of students Staff member	Number of graduates staff member

Evidence
- *Is the staff competent and qualified for their job? Are the competencies and expertise of the staff adequate for delivering this program?*
- *Are there any problems with the human resources? Age structure? Vacancies difficult to fill? What difficulties are there in attracting qualified staff?*
- *What policy is pursued with regard to the employment of staff, both in teaching and research?*
- *What about teaching load? The staff/student ratio? The staff/graduate ratio?*
- *What about the involvement of instructors/lectures from the industry/labournmarkt?*

Staff management
- *Does the department have a clearly formulated staff management structure?*
- *Is staff recruitment based on experience in teaching or practical experiences?*
- *Is there a system of staff appraisal?*
- *What role do teaching qualifications and teaching activities play in the career of the staff members?*
- *What does the department think of its HR policy so far?*
- *What future developments are there?*
- *How are teachers prepared for the teaching task?*
- *Is the teaching delivered by the staff supervised and assessed?*

12 Quality of support staff

There is adequate support in term of staffing at the libraries, laboratories, administration and student services.

Explanation
Program quality depends mostly on interaction between staff and students. However, teaching staff cannot perform well without the quality of the support staff. These might be staff members who support the library, laboratories, computer facilities etc.

Evidence
- *Are the library support staff members competent and sufficient?*
- *Are the laboratories support staff members competent and sufficient?*

- *Are the computer facilities support staff members competent and sufficient?*
- *Are the administrative support staff members competent and sufficient?*

13. The profile of the Student

Criterion

- *There are clearly formulated admission criteria for the programs?*
- *If there is selection, the procedure and criteria are clear, adequate and transparent*
- *The planned study load is in line with the real study load*

Explanation

The quality of the output depends a lot on the quality of the input. This concerns also the entering students.
The intake
- Give a summary of the intake of first year students using Table 12.
- Give a summary of the total number of students enrolled in the program using Table 13.

*Table 12: Intake of **first-year** students (last 5 years)*

year	Full-time			Part-time		
	M	F	Total	M	F	Total

*Table 13: **Total number** of students (last 5 years)*

year	Full-time			Part-time		
	M	F	Total	M	F	Total

Evidence
- *How do you analyse the development of the student intake? Reasons to worry? Causes of problems? Prospects for the future?*
- *What are the admission procedures? Are students selected? If so, how are they selected? What are the requirements?*
- *What policy is pursued with regard to the intake of students? Does it aim to increase the intake or to stabilise it? Why?*
- *What measures are taken to affect the quality and size of the intake? What effect do these measures have?*

Study load
- *Does the department use a credit points system? How are credits calculated?*
- *Does the program's actual study load correspond with the prescribed study load?*
- *Is the study load divided equally over and within the years?*
- *What measures are taken in the field of program development and/or student advice when parts of the program deviate from the prescribed study load (too difficult/heavy or too easy)? Are these measures effective?*
- *Can an average student complete the program in the planned time?*

14. Student advice and support

Criterion

- *Student progress is systematically recorded and monitored, feed back to students and corrective actions are made where necessary.*

- *In establishing a learning environment to support the achievement of quality student learning, teachers do all in their power to provide not only a physical and material environment which is supportive of learning and which is appropriate for the activities involved, but also a social or psychological one.*

Explanation
How students are monitored and supported by staff is essential to a good student career. A department must ensure that a good physical, material, social and psychological environment is in place.

Evidence
- *What role do staff members play in informing and coaching students?*
- *What role do they play in integrating students into the department?*
- *How is the information flow to potential students organised? Is sufficient attention paid to the requirements of their educational background?*
- *Does the future student get a good impression of the education offered? Is the information evaluated? If so, what happens with the results?*
- *How are students informed about the study program?*
- *Is attention paid to study progress? Is student progress recorded? Does the recording lead to problems being pointed out in time? When is first contact made with problem cases? Does this result in remedial and/or preventive actions being introduced for the individual student or program development?*
- *Is special attention paid to coaching freshmen? If so, how does it work?*
- *Are there specific facilities to provide study skills for students with problems? Are these available within the department, the faculty or centrally? How is information on these matters organised?*
- *Is separate attention paid to coaching advanced students?*
- *Is assistance given in completing the final project? Where can students who get stuck with their practical training or final project get help?*
- *How are students advised on problems concerning course options, change of options, interruption or termination of studies?*
- *Is information provided on career prospects? Do students have the opportunity to familiarise themselves with the labour market by means of practical training, application courses and the like?*
- *If students wish to extend their course of study, are the reasons examined? If yes, what are usually the findings and what measures do they result in?*
- *To what extent do the structure and organisation of the program contribute to students taking on an active study approach?*
- *To what extent does the program challenge student to make a satisfactory investment in their studies/program?*
- *Are you satisfied with the tools available to improve study progress?*

15. Facilities and infrastructure

Criterion

- *The physical resources to deliver the program, including equipment, materials and information technology are sufficient*
- *Equipment is up-to-date, readily available and effectively deployed*
- *Information technology systems are set up or upgraded*
- *The computer centre continuously provides a highly accessible computer and network infrastructure that enables the campus community to fully exploit information technology for teaching, research and development, services and administration.*

Explanation
Facilities and resources should be in line with the formulated goals and aims and with the designed program. Facilities are also connected to the teaching/learning strategy. For example, if the philosophy is to teach in small working groups, small rooms must be available. Computer-aided instruction can only be realised with enough computers for the students. The main learning resources consist of books, brochures, magazines, journals, posters, information sheets, internet and intranet, CD-ROMs, maps, aerial photographs, satellite imagery and others.

Evidence

Teaching rooms
- *Are enough lecture halls, seminar rooms, laboratories, reading rooms, and computer rooms available? Do these meet the relevant requirements?*
- *Is the library sufficiently equipped for education?*

- *Is the library within easy reach (location, opening hours)?*
- *Are laboratory facilities and support staff sufficient?*
- *Do the laboratories meet the relevant requirements?*

Didactic aids and tools
- *Are sufficient audio-visual aids available?*
- *Are there enough computers? Appropriate and enough computer programs (computer-aided education, maths programs, design programs, etc)?*
- *To what extent do the facilities/infrastructure promote or obstruct delivery of the program?*
- *Is the total budget for aids and tools sufficient?*

QUALITY ASSURANCE (CELL 16-19)

The confidence of students and other stakeholders in Technical Education is more likely to be established and maintained through effective and efficient quality assurance activities which ensure that programs are well-designed, regularly monitored and periodically reviewed, thereby securing their continuing relevance and currency. A well functioning quality assurance system has at least the following elements
- Student evaluation (16)
- Curriculum design (17)
- Staff development activities (18)
- Benchmarking (19)

16. Student evaluation

Criterion

- *The department makes use of student evaluation on a regular base*
- *The outcomes of the student evaluation are used for quality improvement*
- *The department provides the students with feedback on what is done with the outcomes of the evaluation.*

Explanation

Students are the first to judge the quality of teaching and learning. They experience the delivery method. They have an opinion about the facilities. Of course, the information given by students has to be counterbalanced by other opinions. Nevertheless, the institution/department is expected to carry out student evaluations and to use the outcomes for improvement.

Evidence
- *Do the department use student evaluations in a structured manner?*
- *Who is responsible for the evaluations?*
- *What is done with the outcome of the evaluations? Are there any examples of this contributing to improvements?*
- *What is the input of the students who sit on the committees involved in the internal quality assurance process?*

17. Curriculum design & evaluation

Criterion
- *The curriculum design (or redesign) is done in a structured way, involving all stakeholders, specially employers.*
- *There is a well functioning program or curriculum committee*
- *The curriculum is regularly evaluated*
- *Revision of the curriculum takes place at reasonable time periods*
- *Quality assurance of the curriculum is adequate*

Explanation

Developing or designing a curriculum is a special activity. Too often, a curriculum is seen as a number of courses provided by the present teachers. They sometimes act like small shopkeepers, selling their

own product, but not knowing what others offer. Curriculum design should start with the formulation of the expected learning outcomes. The next question will be what courses are needed to achieve the objectives and finally who will teach the courses? It is important that a curriculum is seen as a joint enterprise.

Evidence
- *Who is responsible for designing the curriculum?*
- *How is the labour market involved in the curriculum design?*
- *How do curriculum innovations come about? Who takes the initiative? On the basis of what signals?*
- *Who is responsible for implementation?*
- *When designing curricula, is there any benchmarking with other institutions?*
- *In which international networks does the department participate?*
- *With which institution abroad does exchange take place?*
- *Has the program been recognised abroad?*

Course and curriculum evaluation
- *How is the program (curriculum) evaluated? At course level? At curriculum level?*
- *Is the evaluation done systematically?*
- *How are the students involved in evaluating the education and training?*
- *How and to whom are the results made known?*
- *Is anything done with the results? How is this made transparent?*

18. Staff development activities

Criterion

> - *Staff development needs are systematically identified, in relation to individual aspirations, the curriculum and institutional requirements.*
> - *Teaching and supporting staff undertake appropriate staff development programs related to identified needs*

Explanation
It is important that the teaching staff have full knowledge and understanding of the subject they are teaching, have the necessary skills and experience to communicate their knowledge and understanding effectively to students in a range of teaching contexts, and can access feedback on their own performance. Institutions should ensure that their staff recruitment and appointment procedures include a means of making certain that all new staff have at least the minimum necessary level of competence. Teaching staff should be given opportunities to develop and extend their teaching ability and should be encouraged to value their skills. Institutions should provide poor teachers with opportunities to improve their skills to an acceptable level and should have the means to remove them from their teaching duties if they continue to be demonstrably ineffective.

Evidence
- *Does the department have a training program for the staff about:*
    - *Curriculum design*
    - *Test construction*
    - *Teaching skills*
    - *Computers in the class room*
- *Does the HEI offer the staff possibilities to develop and extend their teaching abilities by participation in conferences etc?*

19. Benchmarking

> *The faculty/department uses the instrument of benchmarking for analysing the quality of its program and its performance.*

The UNESCO definition of benchmark is: A standard, a reference point, or a criterion against which the quality of something can be measured, judged, and evaluated, and against which outcomes of a specified activity can be measured. The term, benchmark, means a measure of best practice performance. The existence of a benchmark is one necessary step in the overall process of benchmarking. NACTE defines benchmarks as:

A systematic and continuous measurement process; a process of continuously measuring and comparing an organization business process against business leaders anywhere in the world to gain information which help the organization to take action to improve its performance [19]

Benchmarking is a process that enables comparison of inputs, processes or outputs between institutions (or parts of institutions) or within a single institution over time. It is important for a n institution to compare its functioning with equivalent institutions in the country, the region and internationally.

Evidence
- *Is the HEI using the instrument of benchmarking? How is it using the instrument?*
- *Does the executive management use the collected information?*
- *What is done with the benchmarking?*

20. The achievements

Proof of the pudding is in the eating. In assessing our quality we have to look not only at our process quality, but also have to take into account the output. First of all, we must look at our graduates. Did they achieve the expected standards? Are the achieved outcomes equal to the expected outcomes? Have the graduates acquired the expected knowledge, skills and attitudes?

20.1 The profile of the graduates

Criterion

> - *The final qualifications achieved by the graduates are in line with the formulated NTA level*
> - *The content and level of the graduation projects are in line with the NTA degree and the NQF.*
> - *Graduates are able to operate adequately in the field for which they have been trained.*

Explanation
Quality has been formulated as achieving our objectives *in an efficient and effective way, assuming that the goals and aims reflect the requirements of all our stakeholders in an adequate way.* The final test of our quality is the graduate. Did he or she really achieve the expected learning outcomes? This is not easy to measure and can only be known by means of feedback from the labour market and feedback from alumni.

Evidence
- *Is the average standard of our graduate satisfactory?*
- *Do the achieved standards match the expected standards?*
- *Do our graduates easily get jobs? Are the jobs that the graduates get in accordance with the level of graduation?*
- *Have any changes been signalled in the labour market prospects of graduates over the last few years? What are the prospects?*

20.2 Pass rates and drop out rates

Criterion

> - *The department responsible for the program has set targets for the student success rate (i.e number of graduates per year) and the duration of studies comparable with those for other relevant programs.*
> - *The actual student success rate is in line with these targets.*

Explanation
Because the output quality has to be evaluated within the framework of the process, we have also to look at the efficiency of our provisions, among others we have to look at the pass rates and the dropout rate, the average time to complete a degree program (graduation time), and the employability of graduates.

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[19] *NACTE, Benchmarks for Comparing Performance Across Courses and Across Technical Institutions, January 2004.* The publication offers a lot of information about the benchmark process.

Pass rates or success rate: number of students, successfully finishing the program *Drop out rate:* number of students that do not finish the program. The dropout may be enrolled in an other academic program in or outside of the department, but for the program he or she left, it is counted as drop out. Provide information on the pass rate and dropout rates.

Evidence
- *What is the opinion of the department about the pass rate? If not satisfactory, what measures have been taken to improve the pass rate?*
- *Have any fluctuations in the success rate been seen over the last five years?*
- *How high is the dropout rate? Are there explanations for the dropout rate?*
- *Does the department know where the dropout students are going?*

20.3 Average time to graduation

> The average time for graduation is in line with the planned time for finishing the program

Indicate the average time a student spends on a program. If necessary, categorise the students in groups.
- *What does the department think of the average time to graduation?*
- *What measures have been taken to promote graduation and to shorten the average time to graduation?*
- *What effect have these measures had?*

20.4 Employability of the graduates

Criterion

> The employment/unemployment rate of the graduate are in line with the target set by the faculty.

- *What percentage of graduates found a job within six months of graduation over the past five years? How many within a year?*
- *What percentage of graduates are still unemployed 2 years after graduation?*

21. Stakeholders satisfaction

Criterion

> The department must have a structured method to obtain feedback from all stakeholders for the measurement of their satisfaction.

Explanation
After analysing the input, the process and the output, we have to analyse the satisfaction of all stakeholders. What do they think about our performance? How do we know that?
Evidence
Opinion - Students
- *Does the department know what students think about the courses, the program? The teaching? The examinations?*
- *Is student evaluation carried out regularly? Is it done adequately?*
- *What is done with the outcomes of student evaluations?*
- *How does the department cope with complaints by students?*
Opinion - Alumni (graduates)
- *Does the department interview graduates on a regular basis?*
- *What is the opinion and feedback of graduates when they are employed?*
- *Is the feedback of the alumni used to adapt the program?*
 Opinion-Labour market
- *Do structured contacts exist with employers and the labour market for getting feedback on graduates?*
- *How do employers appreciate the graduates? Are there any specific complaints? Do the employers appreciate specific strengths?*
- *How do we cope with complaints from the labour market?*

22. Community contribution

Criterion

> *The department has clear guidelines for consultancy and community outreach*

Explanation

The department is not only responsible for teaching and (if applicable) doing research. It is also responsible for serving society. Consultancy involves a broad range of activities. In general, the term consultancy covers the provision of professional advice or services to an external party for a fee or other non-monetary consideration. Among other things, guidelines on providing consultancy cover the following:

• Policy objectives
• Policy on key policy principles, compliance, accountability framework, legal and financial protection, conflicts of interest
• Procedures for the contribution to society and the community
• Procedures for institutional/academic consultancy
• Procedures for private consultancy

E**vidence**

• *What role does the department play in the local, national and international community*
• *What are the key activities, which of these lay outside normal teaching or research? How do they relate to the department's mission?*
• *What are the non-profit activities of the department?*
• *Is there a clear policy on consultancy and the contribution to society and the community?*
• *How is the income from consultancy regulated?*

7.3 The self-assessment report (SAR)

After completing the self-assessment, the outcomes of the assessment will be written down in a Self Assessment Report (SAR). The SAR is an important document. On one hand it contains the basic information for the external expert team that will come and assess the quality of the program. On the other hand it is the basic document for the faculty/department for the formulation of an action plan or quality plan for the coming years. The content of the SAR follows the lines of the cells, discussed during the self-assessment process. For each cell one should:

• Describe clearly the state-of-the art. An outsider must understand the situation.
• Analyse the situation. What is your opinion about it? Satisfied or not? If not, why not?

Table 14 defines the content of the self-assessment report. Be sure to discuss the report within the faculty and ensure that everybody owns the process.

Table 14: Content of a self-assessment report at program level

Introduction
• *How was the self-assessment carried out?*
• *Composition of the self-assessment team*
• *Short description of the institution and the department responsible for the curriculum*
• *Short description of the program (in such a way that an outsider has a good idea about the content of the program)*
Chapter 1: The department
1.1. Mission and objectives
1.2 leadership and administration
1.3 Financial resources
Chapter 2: Requirements stakeholders and expected learning outcomes
Chapter 3: The process
3.1 Program specification
3.2 Program content
3.3. Program organisation
3.4 Didactic concept
3.5 Student assessment
Chapter 4: The input
4.1 quality of the staff
4.2 Quality of the support staff
4.3. The students
4.4. Student advice/support
4.5 Facilities and infrastructure

Chapter 5: Quality assurance
5.1 Student evaluation
5.2 Curriculum design & evaluation
5.3. Staff development activities
5.4. Benchmarking
Chapter 6: achievements and graduates
6.1 Achieved outcomes (graduates)/graduate profile
6.2. Pass rate and dropout rate
6.3. Average time to degree
6.4 Employability
Chapter 7: Stakeholder satisfaction
7.1. Opinion - Students
7.2. Opinion - Alumni (graduates)
7.3. Opinion - Labour market
7.4 Opinion - Society
8. Community service
Chapter 9: Strengths-weaknesses analysis
9.1 Summary of strengths
9.2 Summary of weaknesses
9.3 Quality plan for the coming years

7.4 Strengths/weaknesses analysis

The self-assessment is followed by a strengths-weaknesses analysis. At the same time, this serves as a check to see how far the institution is in compliance with the given criteria. This is best done, using the checklist (see Appendix 3) and summarizing the outcomes in table 15. The different aspects of the program will be assessed on a scale 1-7. The marks have the following meaning:

1 = absolutely inadequate; immediate improvements must be made
2 = inadequate, improvements necessary
3 = inadequate, but minor improvements will make it adequate
4 = adequate as expected
5 = better than adequate
6 = example of good practice
7 = excellent

The overall assessment of the different aspects is based on the scores given to each sub-aspect in the category. But, of course not all sub-aspects have the same weight. This means that you cannot calculate mathematically an average. You have to balance the various sub-aspects and judge the importance of each of them. Aspects with positive outcomes may compensate for some negative ones. Summarizing the outcomes per category is not a mathematical enterprise, nor ticking boxes. One has to balance the importance of each criterion. The same counts for the overall judgment of the quality of the institution. One cannot calculate the average of the categories, but look at the importance of the category. Programme specification and benchmarking are less important than Learning Outcomes or content of the program.

Summarizing the outcomes for each of the 22 categories shows the strengths and weakness of the institution.

Table 15: summary quality aspects program analysis

no		1	2	3	4	5	6	7
1	Mission & objectives							
2	Leadership& administration							
3	Financial resources							
4	Requirements stakeholders							
5	Expected learning outcomes							
6	Programme specifications							
7	Content of the programme							
8	Organization of the program							
9	Didactic concept							
10	Student assessment							
11	Quality teaching staff							
12	Quality support Staff							

13	Profile of students						
14	Student advice & support						
15	Facilities & Infrastructure						
16	Student evaluation						
17	Curriculum design						
18	Staff development activities						
19	Benchmarking						
20	Achievements						
21	Satisfaction stakeholders						
22	Community service						
	Overall judgment						

Summary of strengths
Summaries the points that the department considers to be its strengths and mark the points that you are proud of.

Summary of weaknesses
Indicate which points the department considers to be weak and in need for improvement. Also indicate what you are going to do about this.

For the improvement of the weaknesses, the department must include actions in the Quality improvement plan. Only with a clear follow up and a quality and action plan, the investment in the self-assessment and the SAR make sense.

7.5 The follow up after the self-assessment
The outcomes of the self-assessment must be translated into a *quality plan* that shows what activities the department will undertake in the near future. The self-assessment will show us where we are now and will give us the direction to where we would like to be, say in 5 years' time.

Only with a clear follow up and a quality and action plan, the investment in the self-assessment and the SAR make sense.

When there is no external assessment by NACTE, the QA-unit may, in consultation with the department, organise an external assessment in the form of an inter-collegial assessment. Such external assessment is important because it gives authority to the findings of the department.

Inter-collegial assessment also delivers confidence to stakeholders; provides evidence of quality to the public and shows that the standards agreed upon by the competent authorities are being implemented. At the same time, it provides mechanisms for continuous quality improvement in the sustainability and development of the program, and buffers against pressures to lower quality standards.

The QA-unit does have various possibilities for an inter-collegial assessment:
- The assessment remains within the institution, involving colleagues from adjacent departments and/or disciplines.
- Colleagues from other institutions, national or international, may be invited. An advantage of this approach is that there are more opportunities for benchmarking. A disadvantage is that this approach is more expensive, especially when international experts are involved.

Of course, it is also possible to combine those two approaches and to invite some external colleagues to participate in an internal assessment.

7.6 Preparation for Program Accreditation
When the self-assessment of the institution will be followed by a Program Accreditation by NACTE, the institution has to prepare itself for the accreditation. Tthe following is important:
- Take care that the SAR is on time at NACTE
- Take care that the SAR is informative, analytical and honest. The SAR is the basic information for the audit team
- Take care that all staff and students knows about the SAR
- Take care that during the site the most important documents, showing evidence that you are meeting the criteria are displayed for the audit team

Take care that everybody is available for interviews during the site visit.

Appendix 1: Checklist Internal Quality Assurance

		1	2	3	4	5	6	7
QA ORGANIZATION								
1	The institution has a "quality management plan" containing clear and specific policies and procedures that provide a framework for the quality assurance activities. The institution commits expressively and clearly to disseminating the culture of quality among all its members.							
2	The institution has a Quality Assurance Committee to ensure quality policies and objectives are set, implemented and evaluated							
3	The institution has a center/ unit/ department linked to the higher management of the institution with the task is to execute, coordinate and monitor the quality assurance. The size of the quality center/ unit/ department suits the size of the institution							
4	Student progress is systematically recorded and monitored, feed back to students and corrective actions are made where necessary.							
	Overall judgement QA Organisation							
MONITORING								
5	An institution has a structured monitoring system to collect information about the success rates and the drop out among the students							
6	The institution has a structured method to obtain feedback from all stakeholders for the measurement of their satisfaction. The monitoring system includes at least: • Structural feedback from the labour market • Structural feedback from alumni							
7	An institution has a structured monitoring system to collect information on the quality of its core activities. This includes monitoring the research out put (number of publications), the number of grants of the staff etc. (if applicable)							
	Overall judgement Monitoring							
EVALUATION INSTRUMENTS								
8	The institution makes use of student evaluation on a regular base. The outcomes of the student evaluation are used for quality improvement. The institution provides the students with feedback what is done with the outcomes							
9	The institution has specific mechanisms approved by NACTE to design, approve, monitor and review the programs within the frame of quality assurance system in the institution.							
10	The institution, with a task in research has a system for regular review of research outcomes.							
11	The institution has a system for regular review of the community outreach.							
	Overall judgment Evaluation Instruments							
SPECIAL QA PROCESSES								
12	• An institution has clear procedures to assure the assessment of students. • Students are assessed on the basis of published criteria, regulations and procedures that are applied consistently. • There are clear procedures to assure the quality of the examinations. • There is an appeal procedure.							

		1	2	3	4	5	6	7
13	An institution has means to satisfy itself that its staff are qualified and competent to conduct the core activities of the institution: education, (research) and the community outreach: • Adequate staff appointment procedures • An adequate staff appraisal system • Staff development activities							
14	An institution has clear procedures to ensure that the quality of its facilities needed for student learning are adequate and appropriate for each program offered: • Adequate checks on the computer facilities • Adequate checks on the library • Adequate checks on the laboratories							
15	An institution has clear procedures to assure the quality of the student support and student advice.							

	In establishing a learning environment to support the achievement of quality student learning, teachers must do everything in their power to provide not only a physical and material environment that is supportive of learning and is appropriate to the activities involved, but also a social or psychological environment.						
	Overall judgment Special QA processes						
SPECIFIC QA-INSTRUMENTS							
16	An institution regularly (but at least once every 5 years), conducts a self-assessment of its core activities and of the institution as a whole to learn about its strengths and weaknesses. This self-assessment must lead to a quality plan.						
17	A self-assessment might be part of an External Quality Assessment (EQA) or accreditation process where the self-assessment report acts as input for the external review team. If the self-assessment is not connected to the EQA, the institution will be expected to organise an audit itself based on the self-assessment report.						
18	The HEI should have an information system that documents its The institution should have an information system that documents its performance on the key performance indicators approved in the quality improvement plan. Updated, fair and objective information on programs should be published taken from the outcomes of its information system or any other comparative studies.						
19	An institution has a QA handbook that documents all regulations, processes and procedures concerning Quality Assurance. This handbook is public and known to all the people concerned.						
	Overall judgment Specific QA instruments						
FOLLOW UP							
20	There is clear evidence that the institution used the information from the monitoring system and the outcomes of evaluations to improve the quality.						
	Overall judgment IQA system						

Appendix 2: Checklist Quality Aspects of an Institution

		1	2	3	4	5	6	7
1.	*The institution has a clear idea about the relevant demands and needs of all stakeholders*							
2.1	*The institution has a statement of vision and mission that defines the institution, its educational purposes, its student constituency, and its place in the technical education and training community.*							
2.2	*The institution demonstrates honesty and truthfulness in presentations to its constituencies and the public; in pursuit of truth and the dissemination of knowledge; in its treatment of and respect for administration, academic staff, other staff, and students; in the management of its affairs and in relationships with NACTE and other external agencies.*							
	Overall judgment criteria 2.1 – 2.2							
3	• *The institution plans constantly to achieve its mission and objectives and evaluate the extent, way and quality of achieving them. Results of the annual assessment are used in the processes of continuous comprehensive planning and assessment. It also works on self-analysis and criticism and reviews its objectives, policies and procedures according to that.* • *The institution ensures the participation of all councils, committees, administrations, faculty members and students in planning and assessment.* • *The institution periodically reviews the assessment processes and planning activities to ensure their effectiveness.*							
	Overall judgment							
4.1	*The institution has a Governing Board or Advisory Board or Council responsible for the quality and integrity of the institution.*							
4.2	*The Institution has effective Administration and Governance.*							
	Overall judgment criteria 4.1 – 4.2							
5	• *The institution takes care of high-quality faculty staff and support staff by clearly defining their responsibility, and by evaluating their performance on a regular basis by means of an adequate staff appraisal system* • *The institution provides for:* - *a system of staff development to enhance the knowledge and skills of faculty and supporting staff in conducting activities that have a direct influence on the quality of teaching-learning. This should include the formulation of a concrete personnel development plan;* - *evaluation of the effectiveness of the provided training* - *compilation of records of education, experience, training, and other essential qualifications required of lecturers and supporting staff.* • *The institution establishes an activity plan and evaluates activities to encourage students, faculty members and other personnel to be conscientious in their thoughts and speech.* • *The institution enhances the professional ethics of its students, faculty members and other personnel*							
	Overall judgment							
6	*The provision of financial resources to meet academic requirements is effectively planned and reviewed.*							
7	*The provision of physical resources to meet academic requirements is effectively planned and reviewed.*							

		1	2	3	4	5	6	7
8.1	• *The programs at offer in the institution:* ✓ *are meeting the expectations of the stakeholders* ✓ *are meeting the current competence requirements* ✓ *have clearly formulated expected learning outcomes* ✓ *are coherent* ✓ *are up-to-date* • *Stakeholders have appropriate opportunities to be involved in review of program outcomes.*							
	Overall judgment							

8.2	• The institution has well functioning student assessment systems through all programs at offer and clear rules to assure the quality of the assessments. • The institution I has a clear policy to promote that the examinations are objective, equivalent and trustworthy • The institution take care of the consistency of the examinations; consistency between the programs and consistency in time • The institution has a policy to promote a variety of assessments methods • The institution takes care that examination committee's function adequately and performs the statutory task. • Students have an opportunity to appeal the results of assessment in a manner that is fair and equitable.						
	Overall judgment						
8.3	Field attachment/workplace training components are effective and integrated into curricula						
8.4	The institution fosters good teaching-learning process						
8.5	• Appropriately qualified staff are employed to enable quality provision of programmes. • The institution actively encourages the development of all staff. Overall judgment						
8.6	• Prospective and continuing students have effective guidance to assist them in making informed decisions on their programme of study • Entry and selection criteria are appropriate for the level of each programme, are well publicised, and are applied consistently. • The institution has implemented effective credit transfer policies and procedures that accord with the principles of NACTE qualifications framework. • The institution makes appropriate provision for the recognition of prior learning and current competency for its enrolled students.						
	Overall judgment						
8.7	The provision of physical resources to meet academic requirements is effectively planned and reviewed.						
	Overall judgment criteria 8.1-8.7						
9	The institution has clear guidelines for consultancy and community outreach						
10	The institution uses the instrument of benchmarking for analyzing the quality of its core activities and its management						
11	The institution has an efficient internal quality assurance system						
12	An institution has the means/opportunity to check whether the achievements are in line with the expected outcomes						
13	An institution has a structured method for obtaining feedback from the stakeholders						

Appendix 3: Checklist Quality Aspects of a program

		1	2	3	4	5	6	7
1.	• The mission of the department is consistent with the mission of the institution. It is applied based on specific objectives and requirements associated with the nature of specialization. It should be clearly stated and be influential in guiding, planning and implementing the program. • The mission of the department is the guide for the processes of planning and decision-making. It is carefully employed while preparing and reviewing the academic program. • The program and its objectives are periodically reviewed in light of performance assessment and the interaction of implementers of programs with their surrounding.							
	Overall judgment							
2.1	• The department plans to achieve its mission and objectives and assess the extent, way and quality of achieving its mission and objectives. Results of the annual assessment are used in the processes of continuous comprehensive planning and assessment. • The department ensures the participation of all councils, committees, administrations, faculty members and students in planning and assessment. • The department periodically reviews the assessment processes and planning activities to ensure their effectiveness.							
2.2	The head of the department decides on the program's priorities, prepares development plans, supports administrators and faculty members and the environment of teaching and learning as to achieve the mission and objectives of the program. There is also clear specification of the responsibility of the academic program							
2.3	The council of the department is responsible in the first place of the quality and credibility of implementing the program. It gives priority for the effective development of the program as to ensure the interests of the students and community it serves.							
	Overall judgment criterion 2							
3.1	The process of financial planning is directed to achieve the objectives and priorities of the program							
3.2	• Financial affairs are effectively managed as to ensure balance between the required flexibility in units and the central accountability and responsibility. • The budget and accounts of the department are managed by a specialized financial manager.							
	Overall judgment criterion 3							
4	The department, responsible for the program has a clear idea about the relevant demands and needs of all stakeholders, based on situation analysis							
5	• The program/curriculum has clearly formulated learning outcomes (knowledge, skills, attitude) reflecting the relevant demands and needs of all stakeholders, especially the labour market • The expected learning outcomes are competence based • The program has formulated learning outcomes on entrepreneurial skills • The program has a learning outcome, enabling the student to get a gender sensitive attitude							
	Overall judgment							
6.	The department publish, for each program they offer, a program specification/description which gives the intended learning outcomes of the program in terms of: • knowledge and understanding that the students will have acquired upon completion of the program • cognitive skills, such as an understanding of methodologies or ability in critical analysis • subject specific skills, such as laboratory skills, clinical skills, etc.							
	Overall judgment							

		1	2	3	4	5	6	7
7.	• The program shows a balance between specialist contents and general knowledge and skills. • The program takes into account and reflects the vision, mission, aims and objectives of the institution. • The objectives of the program and expected learning outcomes are explicit and are known to staff and students. • The program shows the expected learning outcomes of the graduate. Each course is clearly designed to show the expected learning outcomes of the course. To obtain this, a curriculum map is constructed. A program map is available. • The program shows evidence of attention to develop entrepreneurial skills • The program shows evidence of attention to develop a gender sensitive attitude							
	Overall judgment							
8	• The program is designed in such a way that the subject matter is integrated and also strengthens other courses in the program • The program shows range, depth and coherence of the courses • The program is organised in a modular way							
	Overall judgment							

9	• The faculty has a clear didactic concept
	• The didactic concept is student oriented. Hence, the conception of teaching is the facilitation of learning.
	• In promoting responsibility in learning, teachers should:
	  • create a teaching-learning environment that enables individuals to participate responsibly in the learning process
	  • provide curricula that are flexible and enable learners to make meaningful choices in terms of subject content, program routes, approaches to assessment and modes and duration of study							

	Overall judgment							
10	• The system of assessments and examination provides an effective indication whether the students have reached the expected learning outcomes of the program or its components. • The tests, evaluations and examinations are in line with the content and learning objectives of the various parts of the program. • The program provides individual students with adequate feedback concerning the extent to which the various learning objectives have been achieved. • The program ensures adequate consistency of the student assessments. • The assessment is adequately organized (as regards e.g. announcement of the results, opportunities to re-sit tests or examinations, compensation arrangements etc.). • The examination committee functions adequately and performs its statutory tasks.							
	Overall judgment							

		1	2	3	4	5	6	7
11	• The staff is competent and qualified • The size of the teaching staff is sufficient to deliver the curriculum and suitable in terms of the mix of qualifications, experience, aptitudes, age, etc. • Recruitment and promotion of staff are based on merit system, which includes teaching, (research) and services • Duties allocated are appropriate to qualifications, experience, and aptitude. • Time management and incentive system are directed to support quality of teaching and learning • There are provisions for review, consultation, and redeployment. • Termination, retirement and social benefits are planned and well implemented. • There is a well-planned staff appraisal system based on fair and objective measures in the spirit of enhancement which are carried out regularly							
	Overall judgment							
12	There is adequate support in term of staffing at the libraries, laboratories, administration and student services.							
13	• There are clearly formulated admission criteria for the programs • If there is selection, the procedure and criteria are clear, adequate and transparent • The planned study load is in line with the real study load							

		1	2	3	4	5	6	7
	Overall judgment							
14	• Student progress is systematically recorded and monitored, feed back to students and corrective actions are made where necessary. • In establishing a learning environment to support the achievement of quality student learning, teachers do all in their power to provide not only a physical and material environment which is supportive of learning and which is appropriate for the activities involved, but also a social or psychological one.							
	Overall judgment							
15	• The physical resources to deliver the program, including equipment, materials and information technology are sufficient • Equipment is up-to-date, readily available and effectively deployed • Information technology systems are set up or upgraded • The computer centre continuously provides a highly accessible computer and network infrastructure that enables the campus community to fully exploit information technology for teaching, research and development, services and administration.							
	Overall judgment							
16	• The department uses student evaluation on a regular base • The outcomes of the student evaluation are used for quality improvement • The department provides the students with feedback on what is done with the outcomes of the evaluation.							
	Overall judgment							
17	• The curriculum design (or redesign) is done in a structured way, involving all stakeholders, especially employers • There is a well functioning program or curriculum committee • The curriculum is regularly evaluated • Revision of the curriculum takes place at reasonable time periods • Quality assurance of the curriculum is adequate							
	Overall judgment							
18	• Staff development needs are systematically identified, in relation to individual aspirations, the curriculum and institutional requirements. • Teaching and supporting staff undertake appropriate staff development programs related to identified needs							
	Overall judgment							

		1	2	3	4	5	6	7
19	The faculty/department uses the instrument of benchmarking for analysing the quality of its program and its performance							
20.1	• The final qualifications achieved by the graduates are in line with the formulated NTA level • The content and level of the graduation projects are in line with the NTA degree and the NQF. • Graduates are able to operate adequately in the field for which they have been trained							
	Overall judgment							
20.2	• The department responsible for the program has set targets for the student success rate (i.e number of graduates per year) and the duration of studies comparable with those for other relevant programs. • The actual student success rate is in line with these targets.							
	Overall judgment							
20.3	The average time for graduation is in line with the planned time for finishing the program.							
20.4	The employment/unemployment rate of the graduate are in line with the target set by the faculty.							
	Overall judgment criteria 20.1 – 20. 4							
21	The department must have a structured method to obtain feedback from all stakeholders for the measurement of their satisfaction.							
22	The department has clear guidelines for consultancy and community outreach							
	Overall judgment criteria 1-22							

Abbreviations

CBE	
CBE	College of Business Education
CV	Curriculum Vitae
ELO	Expected learning outcome
ENQA	European Association for Quality Assurance
EQA	External Quality Assessment
ICT	Information & Computer Technology
IQA	Internal Quality Assurance
IUCEA	Inter University Council East Africa
MSM	Maastricht School of Management
NACTE	National Council for Technical Education
NGQ	National Qualification Framework
NICHE	Netherlands Initiative for Capacity Development in Higher Education
NTA	National Technical Awards
PI	Performance indicators
QA	Quality assurance
QA	Quality Assurance
QC	Quality control
SAR	Self-Assessment Report
SWOT	Strengths, Weaknesses, Opportunities and Threads
TI	Technical Institution
TVET	Vocational Education and Training Authority
ZIToD	Zanzibar Institute for Tourism Development