Educational Assessment and Evaluation

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Contents

Brief Information about the Author

Rudiger Wolf, born in 1963 in Bielefeld/Germany, is holding a master craftsman diploma in automotive technology, equivalent to a Bachelor Degree on the German Qualifications Framework. He has more than 15 years of experience in various positions in the automotive industry. After migrating to Namibia in 1999, Rudi worked as vocational education and training professional in a number of donor-funded projects in Namibia, such as "curriculum development and assessment", "training of trainer programmes", and "competency based training and assessment".

Since 2009 Rudi has been working in a number of international projects concerned with the development of standards and associated assessment arrangements. These include the development of outcome-based curricula, occupational standards, qualifications and assessment in mechatronic, hospitality, electrical engineering, water technology and vocational preparation, automotive, and electrical engineering.

As part of his work with and on behalf of the Namibia Training Authority (NTA), Rudi was responsible for coordinating and quality assuring the development of sector specific occupational standards and qualifications for surface mining, road construction and maintenance, automotive engineering, mechanical engineering, covering more than 29 occupational areas.

In his initial role as registered Testing Officer for the National Trade Testing and Certification Centre and later qualified assessor/moderator of outcomes-based assessment, Rudi has gained expert knowledge of CBET assessment systems.

Learning Objectives

After going through this module you will be able to:

- Describe the purpose of the National Skills Strategy
- Outline the features of the National Vocational Qualifications Framework
- Explain the term *'competency-based training'*
- Describe the curriculum development process
- Explain the difference between formative (sessional) and summative assessment
- State the principles of assessment
- Explain the evidence gathering process
- Describe the features of an assessment plan

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Glossary

BTE/TTB	*Boards of Technical Education and Trade Testing Boards*
CB(E)T	*Competency-Based (Education &) Training*
Cedefop	*Centre for the Development of Vocational Training*
Competency	*Competencies are the identified behaviours, knowledge, skills and attributes necessary to perform work activities to the standard expected in the workplace.*
CPD	*Continuing Professional Development*
DACUM	*Develop A Curriculum*
ETF	*European Training Foundation*
Former NAVTEC	*National Vocational & Technical Education Commission*
NAC-TVS	National Accreditation Council for Technical and Vocational Stream
NAVTTC	*National Vocational & Technical Training Commission*
RPL	*Recognition of Prior Learning refers to the formal recognition of learning acquired through previous training, work or life experience*
TVET	*Technical and Vocational Education and Training*
TEVTA	*Technical Education & Vocational Training Authority*
UIL	*UNESCO Institute for Lifelong Learning*
UNESCO	*United Nations Educational, Scientific and Cultural Organisation*

Preface

Todays 'World of Work' has undergone radical changes. The emergence of new technologies, global markets for products and services, and international competition require economies to upgrade and enhance the skill level of their human resources. Technical and Vocational Education and Training (TVET) systems all over the world are constantly challenged by this question of how to respond to the demand of a knowledge-based economy. As TVET systems and their training programmes directly relate to the world of work in terms of quantity and quality output, the approach of TVET programmes need to focus on the acquisition of employable skills.

1. The need for change

The traditional TVET system in Pakistan did not really cater to the local requirements that vary across provinces, districts, tehsils, and therefore, only contributed little to the dynamism required by the market. However, it is critical that skill development and market requirements match. In order to enhance the employability level of the work force, TVET systems need to be revitalised, modernised and harmonised at all stakeholder levels. Apart of making TVET more meaningful and relevant, its perceived status in society as opposed to higher education, may also improve to become an alternative in human capacity building for youth development and employment. The World Bank (2004) has identified youth unemployment, poverty and international competiveness in skills development as the main challenges that TVET system worldwide are currently facing.

Case Study

Vocational education is changing its image, but people need to know about it

The past 60 years has seen a steady, constant expansion in the higher education sector, with parents and policymakers alike placing ever-greater emphasis upon the "golden formula" of three A-levels and a university degree.

But the fierce competition for jobs between highly qualified graduates frequently makes the headlines as more and more people struggle to find employment, despite obtaining degrees. A new report from the Institute of Public Policy Research (IPPR) released today, to coincide with VQ Day 2014[1], reveals that many of the jobs expected to drive economic growth and mobility in the future will not necessarily require this traditional academic education pathway. Instead, the vocational path, which includes apprenticeships and on-the-job training, can open doors to an endless array of careers. The new report, commissioned by my charity the Edge Foundation, investigates the changing landscape of the workforce in the next decade and predicts the top jobs of the future – 90% of which will be attained via vocational qualifications. In 2022, the top three in-demand occupations will all be in health and care; nearly three million workers will be required in hospitals, care homes and the community. Economic growth will drive expansion, but further to this, the greatest

[1] VQ day celebrates vocational achievement and the benefits of practical, technical and vocational learning.

influence upon job creation will be the ageing UK population, as the mid-skilled workforce retires. Traditional skilled trades will remain in high demand. Over the next eight years, nearly half a million workers will be required within skilled construction trades, ranging from bricklayers to renewable energy geothermal pump installers. Vocational education can also act as a pathway towards many roles historically seen as the domain of the university graduate. Associate professional careers, encompassing roles as diverse as financial advisers and dental technicians, will expand by 250,000 additional jobs.

All of these roles can be secured through vocational education and training. Technical, practical and vocational education has a unique role to play in the future job market, giving students the edge in a competitive jobs market by providing them with the skills, experience and clear progression routes they need to succeed. Vocational qualifications can aid progression along career paths, or facilitate entire career changes. But further research by the Edge Foundation earlier this year found that many vocational students felt that their schools and parents did not support their decision to pursue vocational study. Many felt they would have received greater support had they followed the university route. There is evidently a perception issue when it comes to vocational education; it has become viewed by some as a second-tier offering. However, the tide is certainly beginning to turn. Rising tuition fees have made the university route increasingly costly, with no guaranteed job at the end, while the array of vocational qualifications on offer today is greater than ever before. Vocational education is undergoing an image change. As education professionals, our job is to encourage availability of knowledge and information about all options available to students. Parity of esteem is vital to remove the archaic two-tiered perception of post-16 education options. The fastest route to refreshing the tired perception of vocational education is through opening up the dialogue to a wider audience. We need to loudly and publicly extol the sheer variety and quality of education options. There is a huge array of courses available, but this will remain insider knowledge if confined to the pages of academic trade publications. We need to rethink our communications and refresh our approach to those as yet untouched by our message. We need to celebrate not only the traditional vocational trades, but the unusual ones as well. From floristry to accounting, aeronautical engineering to personal training, we need to open the doors on vocational education. The biggest challenge is making sure schools tell young people and parents about vocational options. Sadly, this doesn't happen as often as it should – partly because schools with sixth forms see colleges as competitors, and partly because degree-educated teachers lack up-to-date information about vocational qualifications and careers. The most forward-thinking colleges and training providers also strive to reach people directly, both through traditional routes such as local papers, and through social media. The key is telling stories about people who got where they wanted to be via the vocational route to success. And that's one of the aims of VQ Day, celebrated today. By telling the stories of real people and real businesses, we help spread the news about vocational learning. From those starting out in their careers to mid-life career changers, vocational education can empower students with the skills to succeed.

Source: The Guardian
http://www.theguardian.com/education/2014/jun/04/vocational-education-image-vq-day-further-education

Let us take a closer look at the drawbacks of the TVET system in Pakistan. In a *Feature Story* of the World Bank in 2011 it was concluded that the current training supply, and as a result graduates of training institutions, do not meet the labour market demand.

> *"Three main challenges in Pakistan are limited access to education and vocational training, the low quality of education and training, and a shortage of skilled labour for the country's future growth.*
>
> *Access to education and training is still limited. There's a wide disparity between male-female, rural-urban, and different regions. Not even 4% of the total population enters into higher education and less than 1% of the population has ever received technical education and vocational training. Even for students that have access to education and training, quality can be uneven. More than ¾ of the graduates have some foundational skills but no marketable skills for employment. This evidence says that the training programs are not relevant to the skills demanded. The poor training quality can be attributed to inefficient public administration of training programmes, lack of interaction with industry, and out-dated infrastructure of public institutions."*
>
> http://www.worldbank.org/en/news/feature/2011/10/24/youth-skills-training-for-employment-in-pakistan

In consequence, the then established National Vocational and Technical Education Commission[2] (NAVTEC) has developed a framework [National Skills Strategy 2009-2013] for skills development which aims to:

- Change TVET education from time-bound, curriculum-based training to flexible, competency-based training,
- Bring about a shift from supply-led training to demand-driven skills development by promoting the role of industry in designing and delivering TVET.

[2] NAVTEC has been replaced by NAVTTC

1.1 The National Skills Strategy

With the release of the National Skills Strategy 2009-2013 the Pakistan government has made skills development a political priority "to achieve sustained economic and social development, remain globally competitive and be able to respond to changes in technology and work patterns. This is one reason why the importance of skills features in several contemporary policies including draft policies on Employment, 2007, Education, 2007, the Economic Survey of Pakistan, 2007 and the Medium-Term Development Framework (MTDF) 2005-2010 (National Skills Strategy 2009, p. 3)".

Extract: Skilling Pakistan – The National Skills Strategy 2009 – 2013

1.1 Vision

Skills for Employability. Skills for All.

1.2 Mission

To provide policy direction, support and an enabling environment to the public and private sectors to implement training for skills development to enhance social and economic profile.

1.3 Goals

To provide a framework for skills development which achieves two main paradigm shifts:

- *The shift from time bound, curriculum based training to flexible, competency-based training, and*
- *The shift from supply led training to demand driven skills development by promoting the role of industry in both the design and delivery of TVET.*

1.4 Objectives

The proposed paradigm shifts are required to achieve three main objectives:

- *Providing Relevant Skills for Industrial and Economic Development.*
- *Improving Access, Equity & Employability.*
- *Assuring Quality.*

1.5 Reforms

In order to achieve the three objectives, twenty reforms are proposed:

1.5.1 Objective 1:Providing Relevant Skills for Industrial & Economic Development

- *Introducing competency based training*
- *Establishing industry specific Centres of Excellence*
- *Increasing the role of the private sector*
- *Reforming the apprenticeship system*
- *Encouraging entrepreneurship*

1.5.2 Objective 2: Improving Access, Equity and Employability

- *Expanding geographical provision*
- *Making training delivery flexible*
- *Focusing on skills for women*
- *Training for disadvantaged groups*
- *Integrating informal economy workers*
- *Enhancing the mobility of skilled workers*
- *Providing career guidance and placement services*
- *Offering vocational education in schools*
- *Improving the status of skills development*

1.5.3 Objective 3: Assuring Quality

- *Streamlining policymaking*
- *Establishing a National Qualifications Framework*
- *Registering and accrediting institutes*
- *Reforming the management of training institutes*
- *Training of Trainers*
- *Undertaking research*

1.2 Paradigm shift towards competency-based training

"The present skills development system in Pakistan follows a curriculum-based, time-bound approach. Certification is based on completion of courses and passing exams rather than demonstration of competency. The rigidity of this approach makes it difficult for training programs to meet the skill needs of industry. They focus on how far learners have progressed through an institution's curriculum rather than assessing how well they are able to demonstrate the competencies required in the workplace. A competency describes exactly what a worker should be able to do and must know in order to effectively perform a job in the workplace". The basic principles of competency-based training are three-fold:

- The focus is on the outcome of the training.
- The outcome is measured against specific standards not against other students (i.e. criterion referenced rather than norm referenced).
- The standards relate to the demand of industry.

> *"A competency-based training approach therefore, focuses on the demonstration of the actual skills required in the workplace", best determined by the employers themselves. "In Pakistan unfortunately, employers play a negligible role in influencing what is taught in TVET institutes. Because of weak institutional linkages with the industry, training is designed around skills and knowledge that are not necessarily relevant to the market", hence not aligned with international best practices. "Many countries have institutionalised employers' input into training through the establishment of industry advisory bodies. These are employer-led, government licensed, and usually government funded, independent organisations that cover a specific sector in the country. They function as the communication channel between policy makers and training providers and provide accurate industry intelligence about current and future skill needs and training requirements" (National Skills Strategy 2009, p. 8 ff).*

Activity 1:

Discuss in groups the National Skills Strategy.

a) The policy has identified three (3) main objectives. In your view, which key component areas will have a direct impact on your work as a TVET Teacher? Identify three (3) and give reasons.

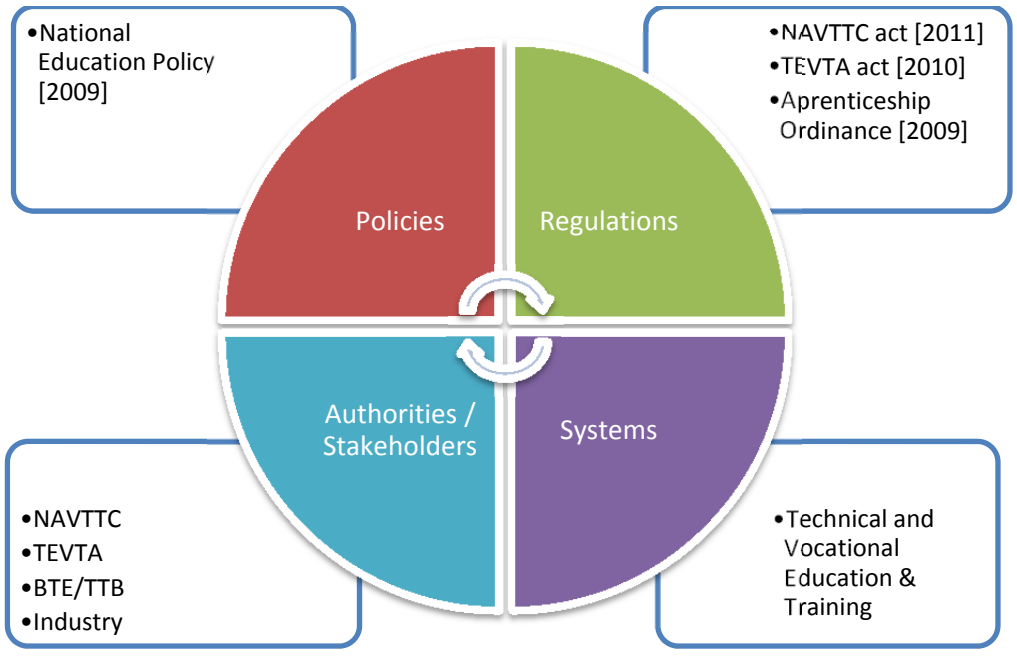
b) Who are the major role players in the implementation of the NSS?

2. The framework for competency-based education and training in Pakistan

The Government of Pakistan recognises the importance of the TVET sector and intends to overcome the many challenges that the sector faces. Against this, TVET has become the key of government's policy initiative that aims to improve socio-economic conditions, create jobs and alleviate poverty. Since 2006, with the inception of the National Vocational & Technical Training Commission (NAVTTC) and the subsequent National Education Policy manifested in 2009, the government has prepared the way to implement competency-based education and training for the TVET sector. Ensuring that TVET graduates are adequately prepared for the job market in line with labour market demands requires moving from a supply-driven to a demand-oriented TVET system. It also requires an active role of the business community in designing, developing, managing and evaluating TVET activities.

The diagram below illustrates the macro-structure of CBET in the Pakistan TVET system.

Table 1: Institutional framework for CBET in Pakistan (non-exhaustive):



Activity 2:

Identify the key roles and responsibilities of the *'main actors'* in the TVET system under CBET.

	Authorities / Stakeholders	Role / responsibility
TVET SECTOR	*NAVTTC:*	_____ _____ _____ _____
	TEVTA(s):	_____ _____ _____ _____
	BTE/TTB:	_____ _____ _____ _____
	Industry:	_____ _____ _____ _____

2.1 The National Vocational Qualifications Framework

Typically, national qualifications frameworks (NQF) categories qualifications according to a particular level depending on their complexity and challenge. Mostly, qualifications are expressed in learning outcomes, which are statements of the knowledge, skills and attributes a learner is expected to acquire in order to obtain a qualification. In recent years NQFs have become truly global in their coverage. According to a recent survey (ETF; Cedefop; UIL) 142 countries worldwide (e.g. Argentina, Australia, Bangladesh, Botswana, Brazil, Canada, Chile, Estonia, Finland, Germany, India, Jordan, Malaysia, Mexico, Namibia, New Zealand, Singapore, South Africa, Sweden, UK, Zambia) are involved in the development and implementation of qualifications frameworks to date.
(*Source*: www.cedefop.europa.eu/EN/Files/2211_en.pdf)

Keeping the international trend in mind, let us focus on the situation at hand. In Pakistan, the National Vocational Qualifications Framework [NVQF] has been evolved in 2013 under the TVET Reform Support Programme. The programme, a five-year initiative co-funded by the European Union, the Kingdom of the Netherlands and the Federal Republic of Germany provides support to the NAVTTC in formulating and introducing an NVQF which is tailored to the requirements of the Pakistan vocational sector. The aim of establishing the NVQF is to define skills required for a qualification, determine equivalence, provide guidelines for Recognition of Prior Learning (RPL) and assure quality of training. It is equally beneficial for the trainees in the technical and vocational education and training system as well as the industry and employers:

- Vertical & Horizontal Progression for Learners;
- Recognition of Qualification – National & International;
- Facilitate Conversion of Informal Training to Formal Training through Recognition of Prior Learning;
- Improvement in Quality of Training;
- Increased Options for Learners for Selecting Training Programmes.

In consultation with stakeholders including academia, researchers, policy makers industry & chambers and TEVTAs, the Framework shall improve the quality of vocational training and provide vertical and horizontal progression to trainees in the vocational stream. This is done through the following instruments:

- Classify skills, knowledge, understanding and competences a person must have in order to perform a job from the basic level to the highest level.
- Identify pathways in a vertical sense between the different levels and in a horizontal sense for knowing the equivalence of qualifications achieved in different training and education streams.
- Identify a range of appropriate levels of qualifications.
- Describe in a generic manner the different levels: what a graduate must know and can do.

Its main features are:

- Level descriptors determining knowledge, skills & competency outcomes;
- Rules on Horizontal and Vertical Progression (HVP);

- Rules on Credit Accumulation and Transfer (CAT);
- Rules on Recognition of Prior Learning (RPL).

(National Vocational & Technical Training Commission, Pakistan)

Table 2: Final draft NVQF (December 2012)

Level	Knowledge and understanding	Skills	Responsibility
Level B Basic Pre-vocational	Very limited knowledge or understanding needed to carry out simple, familiar tasks	Minimal range of skills required to carry out easy, familiar tasks and activities with instructions and guidance	With appropriate guidance begin to take some responsibility for the outcomes of simple tasks and activities
Level A Higher Pre-vocational	Limited knowledge or understanding to carry out structured tasks and activities in familiar contexts	Carry out a series of familiar tasks and activities with guidance	With appropriate guidance take responsibility for the outcomes of structured activities
Level 1 Semi-skilled	Elementary knowledge of an area of work or study with safety procedures	Limited practical skills required to carry out single-process tasks and solve routine problems using simple rules and tools	Work or study under direct supervision with limited autonomy
Level 2 Skilled	Basic knowledge of readily available facts, processes and general theory of an area of work or study	Basic practical skills required to complete tasks and solve problems by selecting and applying basic methods, tools, materials and information	Take responsibility for prioritising and completing tasks in work or study under indirect supervision with some autonomy and adapt own abilities when solving problems
Level 3 Highly skilled	Broad theoretical knowledge and interpretation of available information in relevant contexts within an area of work or study	Broad range of well-developed mental and practical skills required to plan and complete multi-stage tasks and generate optimum solutions to specific problems in a field of work or study	Plan and manage own work and/or supervise the routine work of others, taking some responsibility for the evaluation and improvement of work or study activities

Level	Knowledge and understanding	Skills	Responsibility
Level 4 Professional	Comprehensive theoretical knowledge within a field of work or study and an awareness of the boundaries of that knowledge	Comprehensive range of mental, technical and practical skills required to complete complex tasks and develop creative solutions to abstract problems	Exercise full responsibility for management and supervision in contexts of work or study activities within well-defined boundaries and where there is unpredictable change. Provide inputs to review and develop performance of self and others
Level 5 Specialist	Advanced theoretical knowledge with analytical interpretation of an area of work or study and an awareness of the boundaries of that knowledge	Specialist level of mental, technical and practical skills required to complete variable complex tasks and develop innovative solutions to abstract and complex problems in an advanced field of work or study	Carry out planning and development of courses of action with complete accountability Exercise management and supervision in work or study activities where there is unpredictable change. Review and develop performance of self and others
Level 6 Expert	Expert knowledge and synthesis of an area of work or study, involving a critical understanding of theories and principles	Expert level of skills, demonstrating mastery and innovation, and the ability to solve highly variable complex and unpredictable problems in a field of work or study	Manage complex technical or specialised activities or projects, taking responsibility for decision-making in unpredictable work or study contexts. Take responsibility for managing professional development of individuals and groups

Note: The Qualification types will be finalised during the pilot phase

2.2 Competency-based training unpacked

When we talk about competency-based training what does it actually mean? Do we have a common understanding of what 'competency' means? The glossary section at the beginning of this module refers to: '*Competencies are the identified behaviours, knowledge, skills and attributes necessary to perform work activities to the standard expected in the workplace'*. If you search on the Internet you will find different definitions being used in different countries, however, they all basically mean the same. *So, what is competency?*

Competency;

- Emphasises outcomes;
- Focuses on what is expected of an employee in the workplace;
- Highlights the application of skills and knowledge to workplace tasks;
- Focuses on what people are able to do and the ability to do this in a range of contexts.

Competency involves successful work performance. As such it is usually seen to comprise five dimensions, namely:

- Task skills – this involves undertaking a specific workplace task[s].

- Task management skills – this involves managing a number of different tasks to complete a whole work activity.

- Contingency management skills – this involves responding to problems and irregularities when undertaking a work activity. This may involve dealing with:
  - breakdowns;
  - changes in routine;
  - unexpected or atypical results or outcomes;
  - difficult or dissatisfied clients

- Job/role environment skills – this involves dealing with the responsibilities and expectations of the work environment when undertaking a work activity. This may involve:
  - working with others;
  - interacting with clients and suppliers;
  - complying with standards operating procedures;
  - observing enterprise policy and procedures.

- Transfer skills – this involves being able to apply skills and knowledge successfully in new contexts. This may involve:
  - applying a skill in a different workplace;
  - using different types of tools and equipment to do a familiar task;
  - completing a familiar task using different materials.

Activity 3:

Study the five sets of statements A - E. Each statement describes an aspect of work in a specific industry.

Read the statements in Set A and decide which statement provides the best example of a 'task skill'. Explain your answer.

SET A

Statement	Task Skill [Tick correct answer]
1. Tools and equipment are cleaned and stored.	☐
2. Emergency shutdown procedures are carried out.	☐
3. Occupational health and safety procedures are implemented.	☐

Explain your choice:

Read the statements in Set B and decide which statement provides the best example of a 'task management skill'. Explain your answer.

SET B

Statement	Task Skill [Tick correct answer]
1. Sources of contamination and cross contamination are identified.	☐
2. Test results are recorded.	☐
3. Following presentation, feedback on product design is obtained. Any modifications are identified and incorporated into the final design.	☐

Explain your choice:

Read the statements in Set C and decide which statement provides the best example of a 'contingency management skill'. Explain your answer.

SET C

Statement	Task Skill [Tick correct answer]
1. Staff is trained in emergency management procedures.	☐
2. Relevant safety systems information is accessed, analysed and used.	☐
3. Tools and equipment are selected.	☐

Explain your choice:

Read the statements in Set D and decide which statement provides the best example of a 'job role / environment skill'. Explain your answer.

SET D

Statement	Task Skill [Tick correct answer]
1. Results of evaluation are used to guide further training.	☐
2. Notification of shift availability, or non attendance for shift, is given without undue delay.	☐
3. Pyrotechnics are executed on cue.	☐

Explain your choice:

Read the statements in Set E and decide which statement provides the best example of a 'transfer skill'. Explain your answer.

SET E

Statement	Task Skill [Tick correct answer]
1. Driving techniques are modified to suit changes in weather and road conditions.	☐
2. Sources of contamination and cross contamination are identified.	☐
3. Emergency shutdown procedures are carried out.	☐

Explain your choice:

_____

_____

_____

As you have learnt by now competency is more than performing a skill, let us have a look at some of the advantages and limitations of a competency-based approach.

Advantages include:

- Learners will achieve competencies as per job requirement.
- Learners' progress is built on confidence as they succeed in mastering specific competencies and receive a transcript or letter of attainment of the competencies they have achieved.
- Training time is used more efficiently and effectively, as the trainer is a facilitator of learning as opposed to a provider of information.
- More training time is devoted to working with learners individually or in small groups as opposed to presenting lectures.
- More training time is devoted to evaluating each learner's ability to perform essential job skills.

However, as there are a number of advantages of competency-based training, there also are some potential limitations:

- Unless initial training and follow up assistance is provided for TVET trainers, there is a tendency to "teach as we were taught" and CBET trainers quickly slip back into the role of the traditional teacher.
- A CBET course is only as effective as the process used to identify the competencies. When little or no attention is given to identification of the essential job skills, then the resulting training course is likely to be ineffective.
- A course may be classified as competency-based, but unless specific CBET materials and training approaches (e.g. learning guides, checklists and coaching) are designed to be used as part of a CBET approach, it is unlikely that the resulting course will be truly competency-based.
- It often happens that assessment is linked more to curriculum content (supply-driven) instead of competency standards (demand-driven).

But overall, what makes a 'true' CBET programme apart from a set of competencies? The following key characteristics will exemplify:

- Competencies are carefully selected.
- Supporting theory is integrated with skill practice. Essential knowledge is learnt to support the performance of skills.
- Detailed training materials are keyed to the competencies to be achieved and are designed to support the acquisition of knowledge and skills.
- Methods of instruction involve mastery learning, the premise that all participants can master the required knowledge or skills, provided sufficient time and appropriate training methods are used.
- Learners' knowledge and skills are assessed as they enter the programme and those with satisfactory knowledge and skills may bypass training or competencies already attained.
- Learning should be self-paced.
- Flexible training approaches including large group methods, small group activities and individual study are essential components.

- Satisfactory completion of training is based on achievement of all specified competencies.
- A variety of support materials including print, audio-visual and simulations (model) keyed to the skills being mastered are used.
  (Norton 1987)

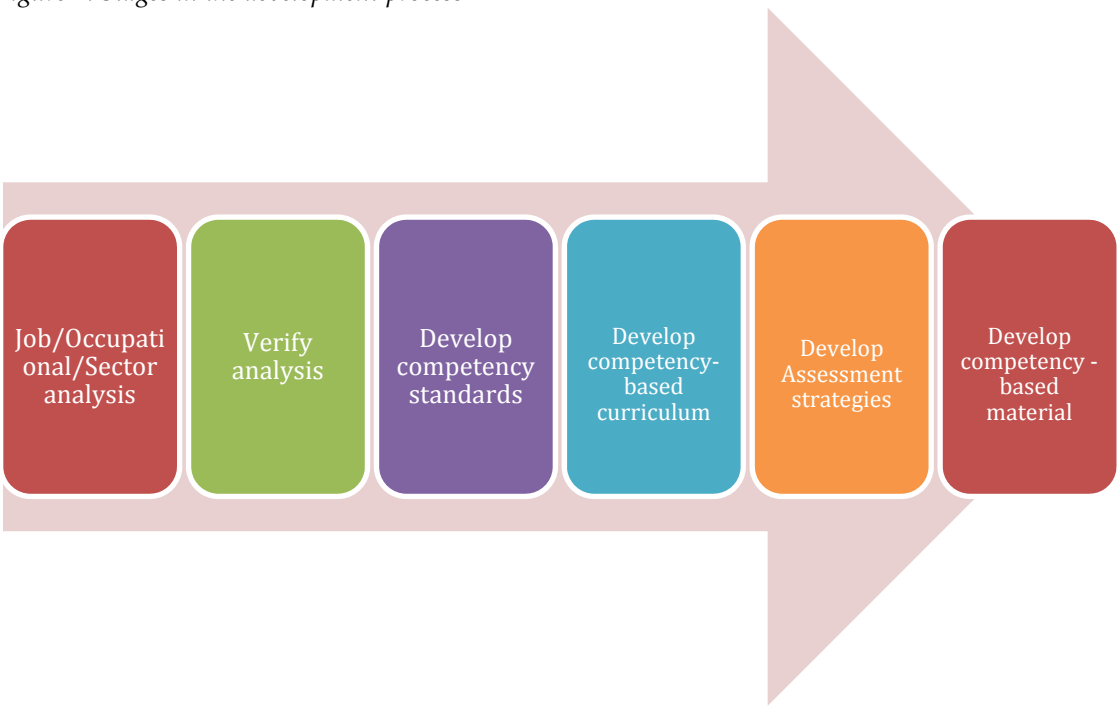
In general one can say that competency-based training programmes require trainers to change their conceptions of teaching and consequently their teaching practices. Trainers whose teaching has always attempted to integrate theory and practice find that little needs to change in working with learners - the changes required in the classroom by a new competency-based curriculum are relatively minor. But even those who feel most comfortable with competency-based programmes tend to express concerns when the issue of assessment is raised. The idea that at the end of the programme, someone must take responsibility for certifying the trainee as competent or not yet competent causes insecurity and brings up a lot of questions. What aspects of performance need to be assessed and on how many occasions? Should all the elements in the competency standards be assessed independently? Can competency be reliably assessed in training institutions or only in the workplace? And who is best fitted to say whether a learner is competent or not – teacher, workplace trainer, or supervisor?

3. Designing training using competencies

The need for, and the design of, training programmes for any job should be supported by detailed labour market analysis. The integration of labour market data in the education planning process serves to promote the design of training programmes that meet the demands of the industry. Based on gathered information competency-based curriculum for a specific job/occupation/sector can be developed. It will be wastage of resources if, for instance, curriculum development would be initiated without considering the market/training needs concerning employability and employers requirements/expectation.

The process for designing training programmes starts with a job/occupational/sector analysis, which is followed by the standardisation of competencies, defined as industry *competency standards*. The latter informs the development of competency-based curriculum that can be expressed in forms of flexible modules or time-based learning programmes. However, as the curriculum can be seen as developmental process in building abilities, industry competency standards serve to confirm those abilities through assessment, both formative (sessional) and summative. Derived from requirements stipulated in the curriculum document, competency-based learning support material is designed to assist learners in their studies.

Figure 1: Stages in the development process



Let us take a closer look into the different stages of the development process.

3.1 The development process

Stage 1: Job/Occupational/Sector analysis

A job, occupational, or sector analysis relates to, amongst others, the process of identifying knowledge, skills, and attributes [KSA] needed in the workplace. A job analysis is done for a single job mostly associated with a company setting, whereas occupational and sector analyses take a wider approach. The focus of these types of analyses is on an occupational area or sector, covering several closely related jobs.

There are three common methodologies used for job/occupational/sector analysis. The methods include job/task analysis, DACUM, and Functional Analysis.

Job/Task Analysis

The aim of this analysis is to divide and subdivide jobs and tasks into their constituent parts, in order to provide information for training and to develop benchmarks for, e.g. piece rate wages. There are several ways to conduct a job/task analysis, such as observation, interviews, questionnaires and surveys etc. In spite of fundamental changes in job and task analysis, the approach is still used for specific purposes and in certain sectors, including mining, some service and administrative occupations.

DACUM

DACUM is an acronym for **D**evelopment **A** **C**urricul**um**, but it actually involves only the first step in a full vocational curriculum development process. Instead of job observation, DACUM uses guided group discussion with expert workers. The DACUM process includes, in addition to job specific tasks, the separate identification of work enablers, such as general knowledge and skills, general worker behaviour (personal traits and inter personal skills), and tools and equipment used. These tasks become the focus of curriculum development.

Functional Analysis (FA)

Functional Analysis is not a method for occupational analysis in strict sense. Rather, the idea is to start with the identification of the key purpose of an occupation in the major sectors where it is found, identifying the main functions, braking these in turn down to sub functions until outcomes for each function are identified following a strictly logical sequence. FA uses a consultative process that involves practitioners, managers, and in some cases, the users or "consumers" of standards. The modules are analysed one by one to identify the performance requirements.

Activity 4:

Research on any ***one*** (1) of the above methods used for job/occupational/sector analysis. Discuss advantages and disadvantages.

_____

_____

_____

_____

Stage 2: Verification

This step verifies selected aspects of each duty/task or function/sub-function that have been identified in the job/occupational/sector analysis. Typical questions to be asked in this second round of consultation are dealing with the relevance of each task to the occupation(s) in terms of '*How important is the task'?* and '*How frequent is the task performed'?* The outcomes of the verification are compared and internationally benchmarked with other relevant data available, e.g. web-based sources. Accordingly, the documentation of the initial analysis will be adjusted and/or amended where necessary.

Stage 3: Competency standards

Competency standards specify learning and performance outcomes in terms of the required standard of knowledge, attributes and performance. They provide the basis for the design of assessment. Competency standards are not concerned with the delivery of learning or training programmes but may inform the design of such programmes.

In order to develop competency standards information from the verified job/occupational/sector analysis is translated into competency units, performance criteria, essential knowledge and understanding. Attention should be paid to address worker attributes, as well as tools and equipment needed to perform identified tasks.

The example on page 26 *(*Table 3: *From DACUM to competency standards)* illustrates duties and tasks for an Electro-Machine Technician that have been identified by industry representatives using the DACUM method (right table). The left table illustrates the competency standard *'Rewind machines'* for an Electro-Machine Technician. As you can see a number of tasks from the DACUM chart are addressed by outcome terms in the various categories of the competency standard, i.e. competency units, performance criteria, or knowledge and understanding. Collectively, all duties and tasks, and attributes expressed in the DACUM chart should be addressed in the sum of competency standards related to a job/occupation/sector.

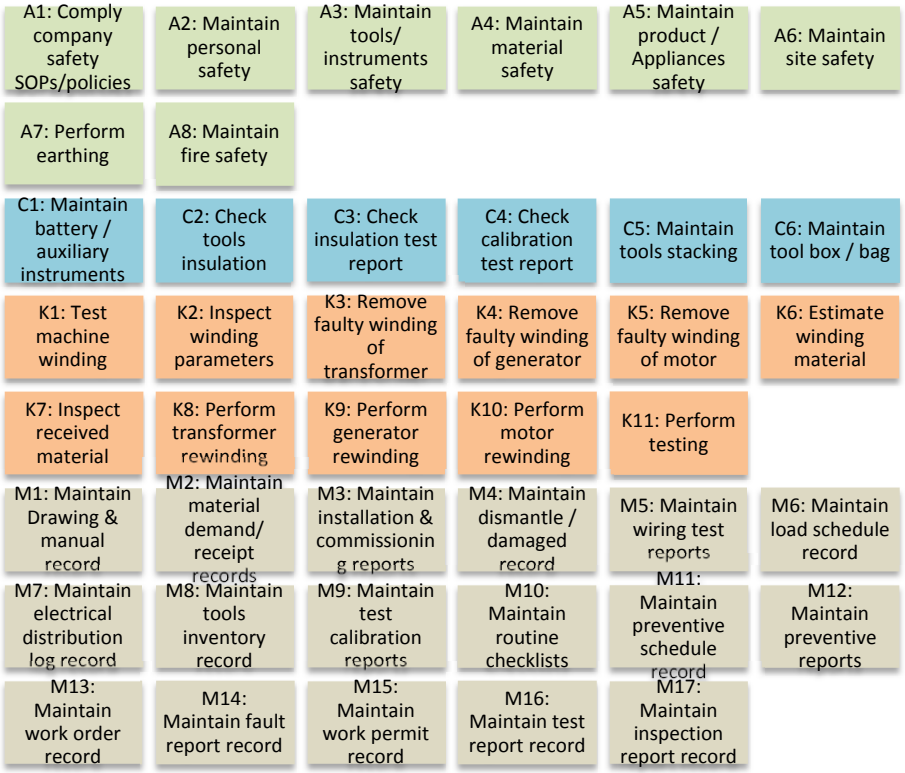
A common mistake made by competency standard developers is the one-to-one transfer of duties and tasks from DACUM into competency standards, i.e. duties are referred as competency standard titles and tasks as competency units.

Table 3: From DACUM to competency standards

Occupational area:	Electro Machine Technician
Competency Standard:	Rewind machines *(Extract)*

Compe-tency Unit	**Performance Criteria**	**Knowledge and Understanding**
A1: Plan and prepare for rewinding	P1- Identify and obtain safety requirements P2- Arrange tools and equipment	K1- Identify hazards K2- Interpret safety requirements K3- Describe job specification requirements K4- Identify tools and equipment requirements
A2: Perform troubleshoot ing	P1- Interpret and confirm rewinding specifications P2- Carry out testing procedures P3- Determine faults P4- Document and report faults	K1- Specify rewinding requirements K2- Describe testing procedures K3- Determine fault identification K4- Interpret test results
A3: Perform rewinding operations	P1- Remove and replace faulty winding P2- Rewind machine P3- Perform winding tests	K1- Outline replacement procedures K2- Describe rewinding procedures K3- List types of winding tests
A4: Complete work	P1- Complete work related documents and procedures P2- Perform final quality inspection P3- Clean up and store tools and equipment	K1- Describe the importance of documentation K2- Describe customer care procedures K3- Describe the importance of quality K4- Explain waste disposal procedures K5- Describe maintenance procedures for tools and equipment

DACUM chart: Electro Machine Technician *(Extract)*



Stage 4: Competency-based curricula

A smart way to curriculum development requires an integrated approach by which competencies are conceptualised in terms of knowledge, skills and attributes.

The given example for an Electro Machine Technician is broken down in three steps.

Step 1: Grouping of competency standards (Table 4)

At the initial stage of curriculum development competency standards are grouped according to the work activities concerned.

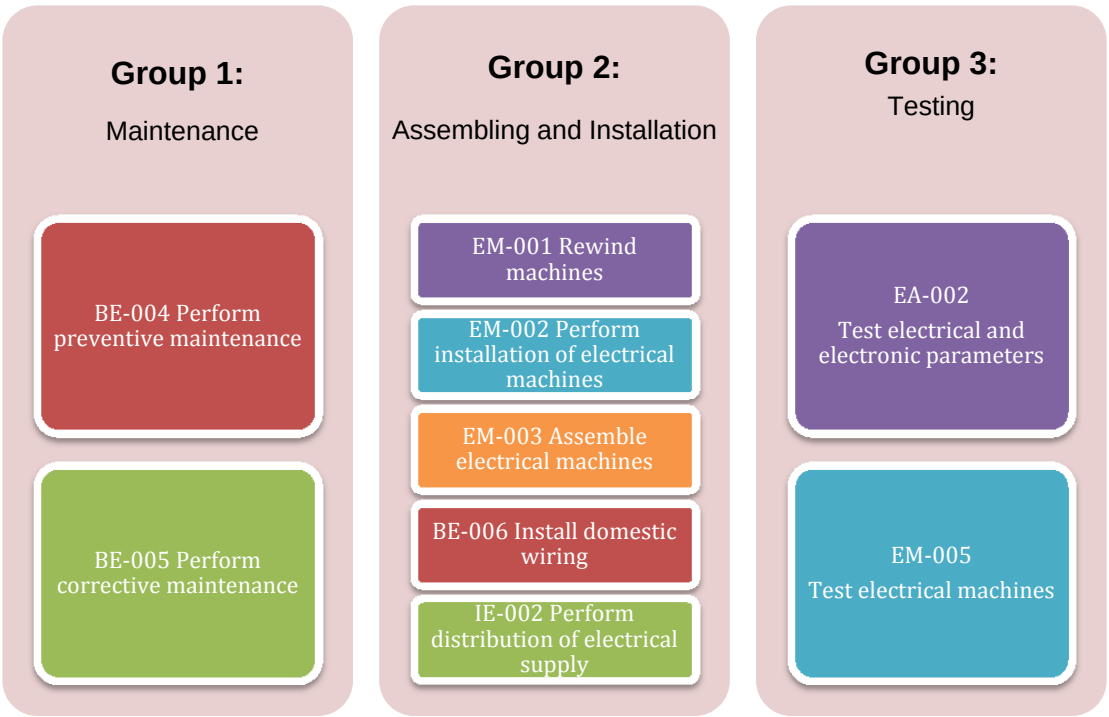
Example:

Group 2: Assembling and Installation

- *Rewind machines (Competency standard)*
- *Perform installation of electrical machines (Competency standard)*
- *Assemble electrical machines (Competency standard)*
- *Install domestic wiring (Competency standard)*
- *Perform distribution of electrical supply (Competency standard)*

Competency standards that 'cut-across' different groups, e.g. *health and safety, use of tools and equipment* etc., need to be integrated in the different learning units, learning outcomes and learning elements of the applicable curriculum clusters.

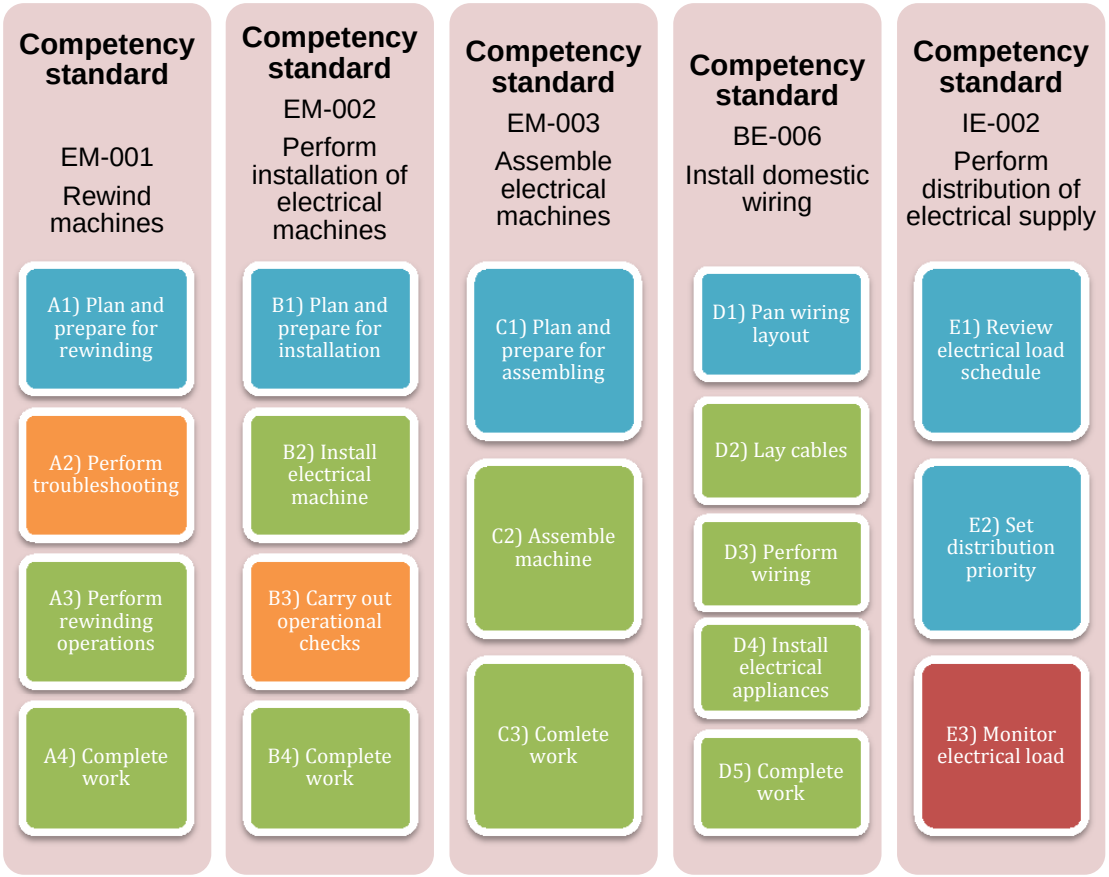
Table 4: Grouping competency standards



Step 2: Clustering of competencies (Table 5)

In the second step **all** competency units from each competency group (Table 4, page 27) are compared in terms of their outcomes. Outcomes that relate to similar work activities are clustered and rephrased as learning units for the curriculum. The example used below in Table 5 refers to *Group 2: Assembling and Installation* (Table 4, on page 27).

Table 5: Competency clusters expressed in Learning Units (Curriculum)



Step 3: Curriculum components

In context of the NVQF, "*Curriculum can be defined as the teaching-learning content, structure and* processes *provided by teaching institutions or training centres" [National Vocational and Technical Training Commission – NAVTTC, 2013].*

The curriculum template being designed and used presently refers to learning units, learning outcomes, and learning elements. Other components are the duration, material requirements, and reference to the learning place, e.g. classroom, workshop, laboratory, workplace etc.

Whereas, the writing of learning units has been captured in step 2 (Table 5), we will now focus on learning outcomes and learning elements. For reference purpose a draft curriculum template for level 1: *Industrial Electrician* is shown in Table 6 on page 31.

Learning outcomes provide guidance on the learner's performance – does he know or can he do? A set of learning outcomes must be written for each learning unit. Learning outcomes describe the knowledge and skills learners **must** be able to demonstrate in order to achieve the learning unit.
Learning outcomes must commence with an action, i.e. state, demonstrate, explain or apply.

Once learning units have been identified use the following chart on the next page to help you construct the learning outcomes. Each learning outcome should address a distinct area of knowledge or skill.

Some useful hints:

- Think about the learning unit. You may need to go back and read the respective competency standard(s).
- Ask yourself whether the areas on the left-hand column of the chart describe skills and knowledge that should be included in the learning outcomes for the learning unit. For example are there key terms that the learner must know in order to achieve the learning unit?
- Write one (1) learning outcome for each area that you think is relevant to the learning unit. For example you might think that areas 1,2,3,5 and 6 are relevant to the learning outcome.
- Check the verb that you have used for the learning outcome. Is it pitched at the appropriate NVQF level? For example, should the learner be required to 'State the key causes of corrosion' or should the learner be required to 'Explain the key causes of corrosion'. A level 1 module is more likely to require the learner to 'state' than 'explain' the causes of corrosion.
- Place the learning outcome in the same sequence as they appear in the following chart. For example the learning outcome that deals with 'key terms' should always be listed first.
- Review your learning outcomes to make sure that they are within the scope of the learning unit – in other words make sure that they do not require the learner to do something that is not required in order to achieve the learning unit.

Clear formulated learning outcomes should consider the following aspects:

Areas for developing learning outcomes	What does the learner have to know or do?	Sample stems for learning outcomes
1. Key terms	Are there any key terms that the learner must know the meaning of?	• Define the following terms ….. • Explain the following terms …. • Identify the common names of ….
2. Features of a product or service	Is there a particular product or service that the learner must know the features of?	• List the characteristics of … • List the key features of … • Identify the different types of …
3. Processes / concepts	Is there a key process/concept [eg: heat transfer in metal] that the learner must understand?	• Explain the … • Explain the function of …
	Are there reasons that the learner should understand why a particular concept or why a particular process is used?	• Explain the reason for … • Outline the reasons for … • Explain the purpose of ….
	Are there advantages/disadvantages or strengths/limitations associated with this process?	• State the advantages and disadvantages of …
4. Hazards and safety	Are there particular hazards associated with the work function	• Explain the hazards associated with …
	Is there personal protective equipment that the learner must use when performing the work function?	• Explain the and functions of the personal protective equipment used in ….
5. Tools and equipment	Are there special tools and equipment that the learner must use to perform the work function?	• List the tools and equipment required to …. • Explain the functions of the tools and equipment used in …
6. Procedure	Is there a procedure that the learner must follow in performing a work function	• Describe the procedure for …
	Does the learner have to show that he / she can perform the procedure	• Apply the procedure for … • Demonstrate the …
7. Typical problems	What are the typical problems that a learner may encounter when performing this work function / what are the remedies	• List the problems that may occur when … • State the remedies for …

Table 6: Draft Curriculum template (Extract)

Module:	Workplace introduction				
Objective of the Module:	On completion of this module the trainee will be able to demonstrate the following competencies according to industry standards and/or requirements: • Maintain health and safety • Carry out maintenance procedures as part of industrial electrical operations • Apply a problem solving method • Demonstrate positive workplace attitude and behaviours				
Duration:	Total: hours	Theory: hours		Practice: hours	
Learning Unit	**Learning Outcomes**	**Learning Elements**	**Duration**	**Materials Required**	**Learning Place**
LU-1: **Maintain health and safety** *This learning unit addresses competency standard(s):* *FL-001 – A1/2/3/4** *FL-008 – A3** ** In absence of a national coding system for competency standards, internal training provider codes are being used*	1.1 Define the term 'hazard'	Definition • Hazard		• Fire extinguisher • Fire blanket • Buckets with sand • Safety signage • Personal protective equipment and clothing • Teaching aids • Flip charts • Computer *(preferably with internet access)*	• Classroom • Workshop
	1.2 Identify the different types of hazards	• Acute hazards • Chronic hazards			
	1.3 Describe the different ways of controlling hazards	• Elimination • Substitution • Enclosure or isolation • Work practices • Training and education • Administrative controls			
	1.4 Describe the procedures for reporting hazards	Procedures for reporting hazards			

Learning elements summarise the content or knowledge that you as a trainer must deliver to the learners. The learning elements must relate directly to the learning outcomes. This means that:

- The learning elements must be in the same order as the learning outcomes;
- There must be, at a minimum, one (1) entry in the learning elements for each learning outcome;
- The learning elements should provide more information than the learning outcome.

For example:

Learning outcome: ***Describe the different ways of controlling hazards***

Learning elements:
- *Elimination*
- *Substitution*
- *Enclosure or isolation*
- *Work practices*
- *Training and education*
- *Administrative controls*

Stage 5: Assessment Strategies

Assessment in competency-based education and training focus on the collection of evidence to be provided by the candidate. The evidence provided will enable the assessor to make informed judgements that are benchmarked against national competency standards.

Assessment is not about passing or failing and evidence collection is more than just setting a test. In principles, there are two types of assessment:

a) Formative/sessional assessment

The goal of formative assessment is to monitor student progress in order to provide constant feedback. This feedback can be used by the trainers to improve their teaching and by learners to improve their learning.

More specifically, formative assessments:
- Help learners to identify their strengths and weaknesses
- Help trainers to recognise where learners are struggling and address problems immediately

b) Summative assessment

The goal of summative assessment is to evaluate learning progress at the end of a training programme by comparing it against, e.g. set of competency standards.

Examples of summative assessments include:
- Direct observation of work activities
- Final project
- Written questions

Stage 6: Training material

The last stage in the development process refers to the development of competency-based learner support material. The following abstract highlights some key elements to be considered when writing competency-based learning guides.

Key Elements in a Learners Guide:

Overview

- Give the learner an overview of the whole unit of work to gain the interest of the learner from the beginning.

Introducing the style, format and expectations

- Explain the use of symbols or icons to the learner before they start their study.
- State the objectives of the learner's guide.
- Introduce any other information that may help the learner with the study they are about to start.

Topics

- Give each topic a relevant title that attracts the learner's attention and signals what is covered by the section.
- Each topic needs an introduction to set the overall tone of what the person should expect to be covering.

Sub Headings

- Give each new section a heading.
- The learning outcomes or learning elements may be a guide to identifying relevant headings.

Symbols and Icons

- Symbols and icons attract the learners attention and cue them for what tasks or activities are required.
- Common symbols and icons are – writing, reading, research, think, reflect, discuss.

Activities

- Provide lots of opportunities for the learner to do something with the information you are providing.
- Refer to pages when you are selecting your activities and methods.
- Put at least one activity in at the end of each section of content to cement the content and explore the application.
- Supply the answers at the end,
- You may add a short quiz (again, with answers at the back)
- Skills assessment tools require application of skills and knowledge and can also be used as evidence in formal assessment of competency.

Content

- Needs to be in manageable chunks to facilitate learners processing of the new information.
- Link information. Competency is about a big picture understanding as well as a focus on specific parts. You need to write to show the links, do not expect the learner to do this without your assistance.
- Use language that is easily understood and if you wish to introduce new words, concepts or jargon, then explain it the first time you use it.
- Vary the length of your paragraphs and avoid overly long paragraphs, as learners can get lost in them. Long sentences can cause the same problems.
- Text size, dot points, bold text and underlining are great for providing a simple emphasis, they also serve to break up the page and increase retention of learning.

White Space

- Training or learning materials must be easy to read. The use of White space is an important layout technique often overlooked by the inexperienced writer.
- Choose a font that is easy to read and has white space in it.

Learning Material Summary

- Put a summary at the end of each topic. This provides a form of closure for the information that you have been giving. It is also an excellent opportunity to go over the main points one more time.

References and Resources

- Include a bibliography with your materials,
- Information in the bibliography should, where appropriate, include relevant websites, videos and journals in addition to books.

Cover and Binding

- Present your materials in such a way that makes you proud.
- Learning materials may be put in a folder or bound.

Summary

- Provide a brief summary to reflect on the previous chapter

3.2 Lesson planning

A lesson[3] plan is the trainer's road map of what students need to learn and how it will be done effectively during a training period. As a first step you have to identify the learning objectives/outcomes for each particular training session. Then, you can design appropriate learning activities and develop strategies to obtain feedback on student learning.

Lesson planning needs to be done in a professional and appropriate way. In planning lessons you may have to consider a wide range of different temporal and organisational arrangements, such as classroom lessons, workshop lesson, laboratory lesson, or workplace lessons.

It is good practice to plan lessons daily as you will be aware of the learners' needs or problems they might be faced with at that particular time. By this way you have a better and more accurate understanding of what your learners need to focus on in future sessions.

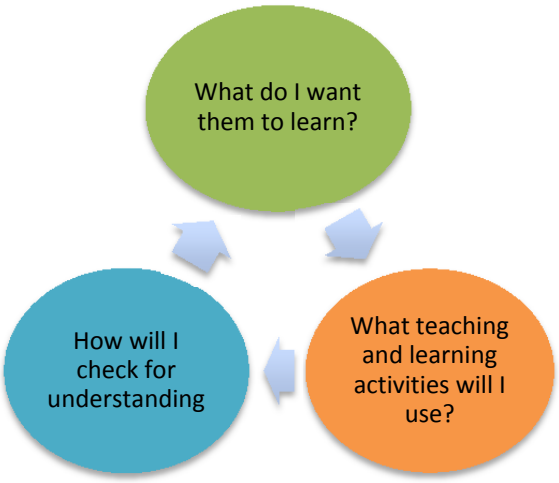
Before planning a lesson you have to ask yourself a few but important questions:

- Am I conversant with the content of the curricula areas to be taught?
- Am I familiar with a range of teaching methods, general and subject specific didactic concepts?
- Do I have a good command of the vocational skills required for the curricula area being taught?
- Do I know the learners' baseline level of knowledge and skills that they have acquired in a formal or non-formal way?

A successful lesson plan addresses and integrates three key components:

- Objectives for student learning
- Teaching/learning activities
- Strategies to check student understanding

Figure 2: Components for successful lesson planning



[3] The term 'lesson' in this section is used interchangeably and refers to a teaching period that can be classroom-, workshop-, laboratory-, or workplace based.

Steps for preparing a Lesson Plan

On the next pages you will find six (6) steps to guide you in drafting your lesson plans. Each step is accompanied by a set of questions that shall help you in designing your teaching and learning activities.

Step 1: Outline learning objectives

The first step is to determine what you want students[4] to be able to do/learn at the end of the lesson. To help you specify your objectives for student learning, answer the following questions:

- What is the topic of the lesson?
- What do I want students to learn?
- What do I want them to understand and be able to do at the end of class?
- What do I want them to take away from this particular lesson?

A useful resource in defining learning objectives/outcomes is the course/programme specific curriculum.

Once you outline the learning objectives for the training session, rank them in terms of their importance. This step will prepare you for managing time and accomplishing the more important learning objectives in case you are pressed for time. Consider the following questions:

- What are the most important concepts, ideas, or skills I want students to be able to grasp and apply?
- Why are they important?
- If I ran out of time, which ones could be omitted / not omitted?

Step 2: Develop the introduction

Now that you have your learning objectives in order of their importance, design the specific activities you will use to get students to understand and apply what they have learnt. As some of your learners may already have prior knowledge/ skills of the topic it is always good practice to gauge their knowledge/skills of the subject at the end of the previous training session. For example, you can take a simple poll: "How many of you have heard of...? Raise your hand if you have."

Develop a creative introduction to the topic to stimulate interest and encourage thinking. You can use a variety of approaches to engage students (e.g., personal experience, thought-provoking dilemma, real-world example, short video clip, practical application, probing question, etc.). Consider the following questions when planning your introduction:

- How will I check whether students know anything about the topic or have any preconceived notions about it?
- What are some commonly held ideas (or possibly misconceptions) about this topic that students might be familiar with?
- What will I do to introduce the topic?

[4] The term 'student' in this section is used interchangeably and also refers to learners or trainees.

Step 3: Plan the specific learning activities (Trainer activity)

Prepare a variety of ways for explaining and/or demonstrating the subject (real-life examples, analogies, visuals, etc.) to catch the attention of more students and appeal to different learning styles. As you plan your examples and activities, estimate how much time you will spend on each. Build in time for extended explanation or discussion, but also be prepared to move on quickly to different applications or problems, and to identify strategies that check for understanding. These questions would help you design the learning activities you will use:

- What will I do to explain the topic?
- What will I do to illustrate the topic in a different way?
- How can I engage students in the topic?
- What are some relevant real-life examples, analogies, or situations that can help students understand the topic?
- What will students need to do to help them understand the topic better?

Step 4: Plan to check for competency (Learner activity)

Now that you have explained the topic and illustrated it with different examples, you need to check for student understanding – how will you know that students are learning? Think about specific questions you can ask students in order to check for understanding. Decide on whether you want students to respond orally or in writing. For practical work activities allocate enough time for learners to practice, and practice more, until they practice with confidence … and are competent! Usually, this will take a number of training sessions.

- What questions will I ask students to check for understanding?
- What tasks will I give students to demonstrate that they are able to do?

Reflect on what you have learnt about 'Competency' on page 17ff of this module.

Task skills:

- *Can the learner undertake specific workplace tasks?* ☐ *No* ☐ *YES*

Task management skills:

- *Can the learner manage a number of different tasks to complete a whole work activity?* ☐ *No* ☐ *YES*

Contingency management skills:

- *Can the learner respond to problems and irregularities concerning the workplace tasks?* ☐ *No* ☐ *YES*

Job/role environment skills:

- *Can the learner deal with the responsibilities and expectations of the work environment when undertaking a work activity?* ☐ *No* ☐ *YES*

Transfer skills:

- *Can the learner apply skills and knowledge successfully in new contexts?* ☐ *No* ☐ *YES*

Step 5: Develop a conclusion and a preview

Go over the topic that has been covered by summarising the main points of the training. You can do this in a number of ways: you can state the main points yourself ("Today we did…"), you can ask a student to help you summarise them, or you can even ak all students to write down on a piece of paper what they think were the main points of the training session. You can review the students' answers to gauge their understanding and ability of the topic and then explain anything unclear the following training session. Conclude the lesson not only by summarising the main points, but also by previewing the next lesson. How does the topic relate to the one that's coming? This preview will spur students' interest and help them connect the different ideas within a larger context.

Step 6: Create a realistic timeline

Experienced trainers know how easy it is to run out of time and not cover all of the many points they had planned to cover. A list of ten learning objectives is not realistic, so narrow down your list to the two or three key concepts, ideas, or skills you want students to learn (depending on the time available). Trainers also agree that they often need to adjust their lesson plan during class depending on what the students need. Your list of prioritised learning objectives will help you make decisions on the spot and adjust your lesson plan as needed. Having additional examples or alternative activities will also allow you to be flexible. A realistic timeline will reflect your flexibility and readiness to adapt to the specific classroom environment. Here are some strategies for creating a realistic timeline:

- Estimate how much time each of the activities will take, then plan some extra time for each
- When you prepare your lesson plan, next to each activity indicate how much time you expect it will take
- Plan a few minutes at the end of class to answer any remaining questions and to sum up key points
- Plan an extra activity or discussion question in case you have time left
- Be flexible – be ready to adjust your lesson plan to students' needs and focus on what seems to be more productive rather than sticking to your original plan

Conclusion

To be effective, the lesson plan does not have to be an exhaustive document that describes each and every possible scenario. Nor does it have to anticipate each and every student's response or question. Instead, it should provide you with a general outline of your teaching goals, learning objectives, and means to accomplish them. It is a reminder of what you want to do and how you want to do it. A productive lesson is not one in which everything goes exactly as planned, but one in which both students and trainer learn from each other. Therefore, it is good practice to always reflect on the training session and learn from what went well and what did not.

3.3 Importance of employability skills

Employability skills, also referred to as life skills, workplace essential skills, generic skills, key competencies, key skills, or enabling skills describe non-technical skills and competencies that support the successful accomplishment of the task-based activities central to any job role. As Trainer you have to find ways to motivate learners to actively engage in acquiring employability skills. You can achieve this by encouraging group work, project work, extensive use of technologies etc.

The following employability skills are most often deemed important for companies:

Communication *that contributes to productive and harmonious relations between employees and customers*

- Communication is possibly the most prevalent of all the employability skills. Speaking, listening, reading and/or writing are central to all work practices and there are very few examples of competency standards and curricula that do not contain at least some aspects of communication.

Teamwork *that contributes to productive working relationships and outcomes*

- Teamwork recognises the importance of relationships with others in the workplace. There are very few tasks and roles which occur in isolation, but even these require at least some degree of relationship with customers and/or supervisors or an understanding of how the work being done contributes to an overall goal or target.

Problem solving *that contributes to productive outcomes*

- At its simplest, problem solving can be described as seeing that something is wrong and fixing it. At a more complex level, problem solving can include processes to identify problems; for example, risk management and quality assurance. Initiative was identified in the initial report as an important facet of problem solving as it allows individuals to take steps to solve problems, with or without input from supervisors, before they impact on production or service delivery.

Planning and Organising *that contribute to long-term and short-term strategic planning*

- Planning and organising reflects an individual's ability to manage the tasks and timelines which define their work roles. This has also been identified as one of the employability skill areas which benefits the most from on-the-job experience.

Self-management *that contributes to employee satisfaction and growth*

- Self-management refers to an individual's ability to manage themselves in relation to the outcomes expected of their work role. Individuals must increasingly take responsibility for their own performance.

Technology *that contributes to effective execution of tasks*

- The inclusion of technology as an employability skill recognises the importance that technology plays not just as a task skill, but in a range of functions performed in the workplace. This employability skill includes the more traditional forms of information technology and the skills needed to work with other equipment and machinery.

Task

Task 1: Lesson plan

Due date for this assignment: *(see respective area in our online environment)*

A lesson plan is the trainer's road map of what students need to learn and how it will be done effectively during a training period. Consider what you have learnt and enhance your knowledge using other resources (Internet, books, experience of other trainers etc.). Remember, it is competency-based!

a) Develop a lesson plan for a classroom session derived from Table 6 on page 31 meeting the following requirements:

Occupational area:	Building Electrician
Topic:	Maintain health and safety
NVQF level:	1
Venue:	Classroom
Intake level:	New entrants (Middle & Matric)
Group size:	12 learners (male & female)
Duration of training session:	2.5 hours

b) Develop a lesson plan for a practical training session of your choice meeting the following requirements:

Occupational area:	***(Choose area you are conversant with)***
Topic:	***(Choose topic you are conversant with)***
NVQF level:	***(Choose NVQF level from table 2, page 16)***
Venue:	Workshop
Intake level:	New entrants (Middle & Matric)
Group size:	12 learners (male & female)
Duration of training session:	2.5 hours

Table 7: Sample lesson plan

Module:	Workplace introduction		
Class:	12 Building Electricians (new entrants, male/ female)		
Time available:	150 min		
Topic:	Maintain health and safety		
Specific objectives/outcomes:			
Key/Time	**Trainer Activity**	**Learner Activity**	**Resources**
Recap last session			
Introduction			
Development & Sessional assessment			
Conclusion			

4. Assessment in Technical Vocational Education and Training

Assessment is a critical link in the ongoing cycle of human capital development, whether it takes place in an institutional training programme, outside of formal training programmes, or on the job. Assessment is also one of the crucial elements of lifelong learning both for individuals, who need a method of assessing and certifying qualifications developed during different life stages, and for training institutions that need to improve assessment and articulation programmes. Assessment must be directly linked to and developed from occupational standards (as opposed to being derived from training standards), if it is to reflect and assess what a person is qualified to do in an occupation.

Training standards need to be linked to occupational standards if training is to be relevant to the real world of work. This linkage is sometimes absent, particularly in developing countries.

Assessment programmes have multiple objectives:

- For **individuals**, assessments can lead to certification, assist in initial job entry and upward and horizontal career mobility, and, in the context of lifelong learning, provide a method of documenting competencies learned at different times and through different avenues.
- For **employers**, assessment assists in hiring, promotion, and planning of internal training.
- For **training institutions**, assessments provide a method of benchmarking the quality of skills and knowledge provided against the occupational competencies actually required in an occupation.

Training institutions and staff may resist developing and using assessment instruments based on occupational standards. They may feel this challenges their traditional authority and limits their flexibility in assessing what they feel are critical elements of performance in an occupation. This issue is central to the reason for developing occupational standards in the first place, as opposed to just having trainers write curricula. The degree to which trainers accept and use assessment instruments based on occupational standards will be influenced by the degree to which they were involved in developing the initial standards (Fretwell/Lewis/ Deij 2001).

Norm referenced assessment

This approach assesses performance using standardised norm-referenced assessments whereby individuals are compared with others taking the same assessments. A norm can be established for pass/fail. However, full application of this approach can raise questions regarding performance and standards may be below acceptable limits if all individuals score low during one period of assessment.

Think of it like a race. If a runner comes in third in a race that does not tell us anything objectively about what the runner did. We do not know if the runner

finished in 30 seconds or 30 minutes; we only know that he finished after two other runners and ahead of everyone else.

http://education-portal.com/academy/lesson/types-of-tests-norm-referenced-vs-criterion-referenced.html#lesson

Criterion referenced assessment

In this approach an individual's performance is assessed against a defined (industry) standard and the results can be pass or fail (e.g., a machinist can or cannot perform a turning operation within an acceptable range of tolerance). It is interested in one thing only: did you meet the standards?

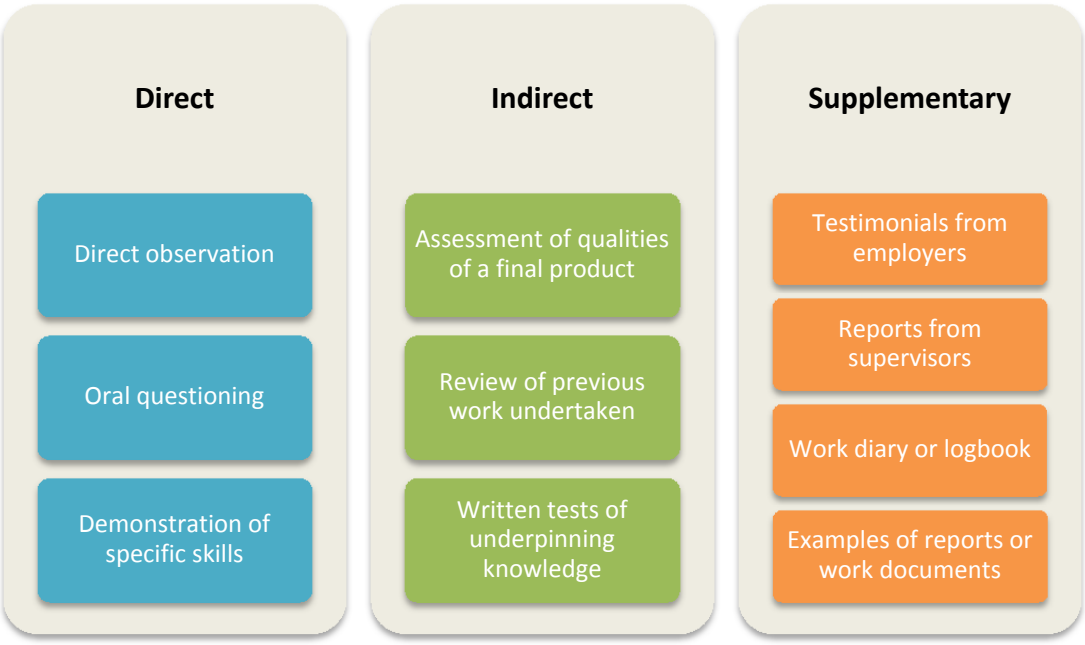
Let us go back to our race scenario. Saying that a runner came in third place is norm-referenced because we are comparing him to the other runners in the race. But if we look at his time in the race, that is criterion-referenced. Saying he finished the race in 58 seconds is an objective measure that is not a comparison to others.

http://education-portal.com/academy/lesson/types-of-tests-norm-referenced-vs-criterion-referenced.html#lesson

4.1 Competency-based assessment

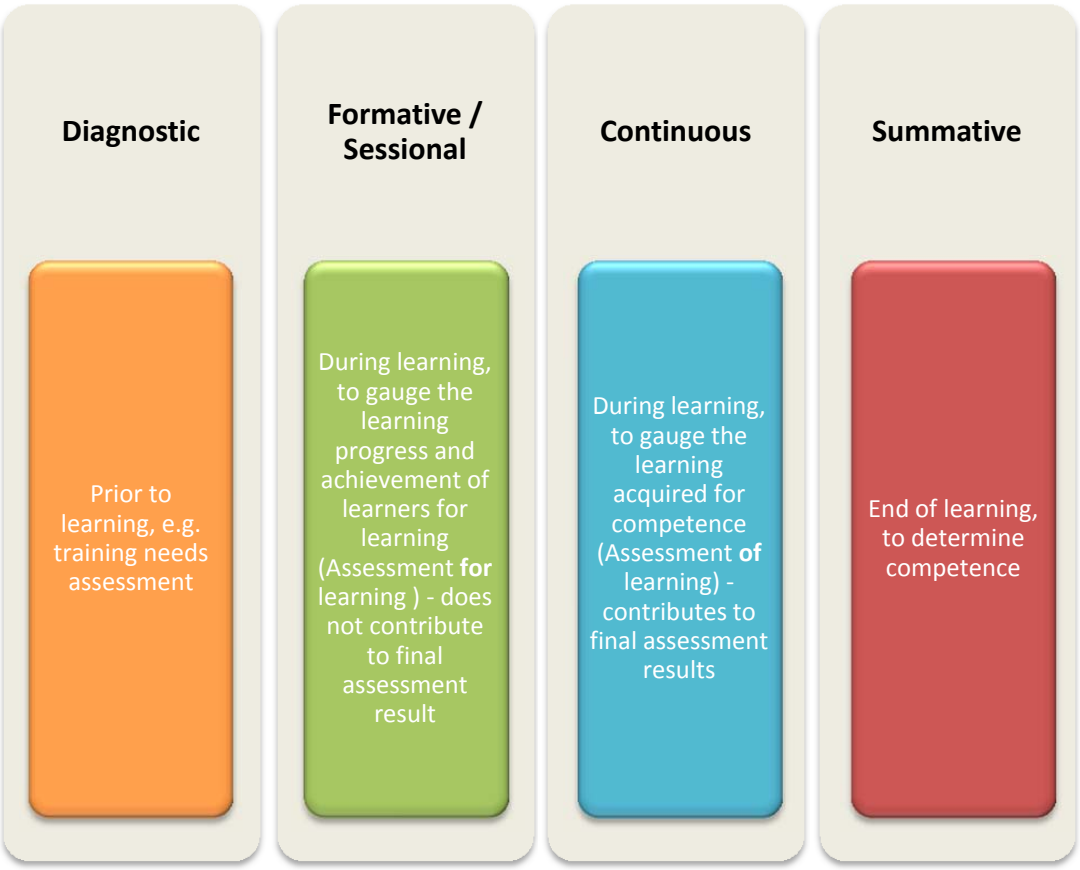
Competency-based assessment is the process of gathering data and/or collecting evidence to confirm a candidate's ability to perform according to specified outcomes articulated in the competency standard(s). Evidence is the information gathered which, when matched against the requirements of the competency standards, provides proof of competence. Evidence can be direct, indirect or supplementary, as noted in Table 8.

Table 8: Methods of evidence



Evidence can take many forms and be gathered from a number of sources at different times, i.e. prior learning, during learning, and at the end of learning. It is good practice to develop a range of assessments strategies that match all types of assessment shown in Table 9 and implement them throughout the entire instructional experience.

Table 9: Types of assessment



4.2 Principles of assessment

When conducting assessment or developing assessment tools, trainers/assessors need to ensure that the following principles of assessment are met:

Validity

- Indicates if the assessment outcome is supported by evidence. The assessment outcome is valid if the assessment methods and materials reflect the critical aspects of evidence required by the competency standards (Competency units, performance criteria, knowledge and understanding).

Reliability

- Indicates the level of consistency and accuracy of the assessment outcomes. The assessment is reliable if the assessment outcome will produce the same result for learners with equal competence at different times or places, regardless of the trainer or assessor conducting the assessment.

Flexibility

- Indicates the opportunity for learners to discuss certain aspects of their assessment with their trainer or assessor, such as scheduling the assessment. All learners should be made aware of the purpose of assessment, the assessment criteria, the methods and tools used, and the context and proposed timing of the assessment well in advance. This can be achieved by drawing up a plan for assessment.

Fair assessment

- Fair assessment does not advantage or disadvantage particular learners because of status, race, beliefs, culture and/or gender. This also means that assessment methods may need to be adjusted for learners with disabilities or cultural differences. An assessment should not place unnecessary demands on learners that may prevent them from demonstrating competence.

The Rules of Evidence

Assessment tools that are well considered and developed will help to ensure that the evidence collected is:

Valid

- There is a clear relationship between the evidence requirements of the unit of competency and the evidence on which the assessment judgement is made;

S**ufficient**

- The performance criteria and evidence guide are addressed; competence over a period of time is demonstrated; all dimensions of competency are addressed; competence in different contexts is demonstrated;

Current

- The evidence demonstrates the learner's current knowledge and skills; and

A**uthentic**

- **I**t can be verified that the evidence is the learner's own work.

4.3 Assessment methods

Workplace activities do not usually fall into categories that reflect individual competency standards. In reality, a work activity reflects a number of competency standards at the one time. Best practice assessment methods may involve a cluster of competencies (competency standards) to reflect a real work task. This can also be relevant in combining (clustering) knowledge-based and performance-based assessment methods. Competency-based assessment methods may be categorised into three broad groupings:

1. Knowledge-based assessment methods

Multiple-Choice Questions (MCQ)

Multiple-choice questions consist of a question, followed by a number of options. One of the options is the correct answer. The other incorrect options are called distracters.

Advantages	Disadvantages
➢ As there is minimal writing, a substantial amount of content can be assessed in a relatively short time ➢ Can be administered to a group of learners concurrently ➢ Scoring is highly objective (i.e. number of correct answers only)	➢ Validity of evidence blurred by the 25% (assuming 4-option MCQ) chance of random success. ➢ Relatively difficult to design good MCQ questions – requires skilled designers and pilot- testing. ➢ Method is usually constrained to being a supplementary method to test knowledge and comprehension. ➢ Validity decreases with frequent use and exposure of MCQ to learners

Written Assessment (Short Answers)

Short answers require candidates to express understanding in written form. The answers are relatively short and hence may be appropriate for candidates with literacy issues.

Advantages	Disadvantages
➢ Easy to mark/grade as the answers are predictable. ➢ Answers are limited hence writing ability is not unduly stressed. ➢ Suitable for learners who do not have high literacy levels.	➢ Cannot be used alone and has to be supplemented with other methods

Written Assessment (Report)

A report is a form of extended written assignment whereby information and often recommendations for action are presented.

Advantages	Disadvantages
➢ Relevance to realistic context hence more practical than an academic essay	➢ Quite demanding as learners may be required to analyse on what they have done and draw conclusions

Projects

Projects involve an assessment of a combination of subject knowledge, process skills and transferable skills. Projects require learners to apply their learning, encourage pro-activity and need an extended duration for completion. The outcomes of a project may be presented through different forms such as a report, portfolio, and/or presentation.

Advantages	Disadvantages
➢ More flexible (in terms of scope, medium for presentation) than other assessment methods ➢ High validity as it requires the application of skills and knowledge in a given / real context	➢ Time consuming to mark ➢ Challenging to determine learner's true contributions and correspondingly his level of competencies ➢ Should be complemented with other supplementary methods to ensure authenticity of evidence

Portfolio

A portfolio refers to a collection of evidence assembled by the learner to demonstrate competence. The main purpose of using a portfolio would be the collection of evidence to establish that the learner has demonstrated a set of prescribed performance criteria. A key point to note is that evidence that was accumulated many years ago may not be current and has to be in line with current practices and standards.

Advantages	Disadvantages
➢ Flexible as learners take the initiative to decide on how the portfolio is to be presented and organised. ➢ Valid form of assessment as it is based on real task rather than a series of educational tasks	➢ Challenging to some learners due to the flexibility ➢ May be difficult for assessors to map the portfolio to assessment criteria and require a face-to-face interview to ascertain competence

Oral Questions

Oral Questioning require learners to articulate their understanding through a verbal face-to-face question and answer (Q&A) process. This method is useful when addressing a diverse group of learners with varying literacy levels, as the assessor is able to paraphrase questions to help the candidates in understanding.

Advantages	Disadvantages
➢ Able to address diverse needs of candidates	➢ Challenging for inexperience assessors as they will have to be able to think on their feet and paraphrase the questions without providing undue stress to the candidate

2. Performance-based assessment methods

Workplace Performance

This is arguably the best method to collect reliable and authentic evidence of a learner's actual competencies. This is because the assessment context is set under actual work conditions that require demonstration of actual occupational competencies and maximises the degree of realism in the assessment process.

Advantages	Disadvantages
➢ Good indicator of a learner's actual work performance ➢ High authenticity and reliability of evidence	➢ Constrained by opportunities available to observe performance for all range of activities specified under standards ➢ Considerable time and resources required to assess performance criteria

Role-Play / Simulation

Role-playing or simulation provides an alternative for workplace performance. It can be seen as an organised scenario that seeks to gather evidence on a learner's competencies.

Advantages	Disadvantages
➢ Allows control of different settings required to assess a full range of activities stated under standards ➢ Flexibility in time allocation ➢ Allows standardisation of activities to enhance fairness of assessment	➢ Detached from realistic workplace conditions ➢ Requires considerable investment in facilities and equipment to simulate actual work setting

3. Attitudinal Evaluation methods

Observation

This method involves observing the behaviour of learners, recording whatever appears to be useful, important, or unusual. Once the data are recorded, the observers' task is to make sense and draw conclusions from it. It is necessary to determine why you are observing, what you expect to see or think you might see and how you will record what you see. Attitudinal evaluation requires determination of a proxy behaviour that best presents the attitude item/component. The selection and determination of the proxy behaviour requires research backing and testing. There has to be a relationship between the proxy behaviour and attitude, before it can be safely used for attitudinal evaluation.

Advantages	Disadvantages
➢ Structured observation allows the observer to focus on specific behaviour that indicate positive and negative feelings or attitudes ➢ Structured observation allows for recording of reliable and relevant data	➢ Structured observation incurs the risk of overlooking concurrent relevant events ➢ Where inputs from direct supervisors (third party observation) are sought, key issue is the degree of objectivity and reliability of the evaluation

Source: *Singapore Workforce Development Agency*
http://www.wda.gov.sg/content/dam/wda/pdf/L325B/CBAP_%20worksho2_20121018_QAD_v02final.pdf

4.4 Assessment tools

Assessment tools (also referred to as *assessment resource* or *test items*) are prepared materials that assessors/trainers can use to assist with the process of collecting evidence regarding whether candidates have achieved competency. In some cases, assessors/trainers may use prepared assessment materials or develop their own assessment materials.

Generally speaking, there are four steps in the design process:

Step 1

- Familiarise yourself with the mandatory requirements of the assessment task(s)

Step 2

- Use your understanding of the specified competencies to choose appropriate assessment method/s;

Step 3

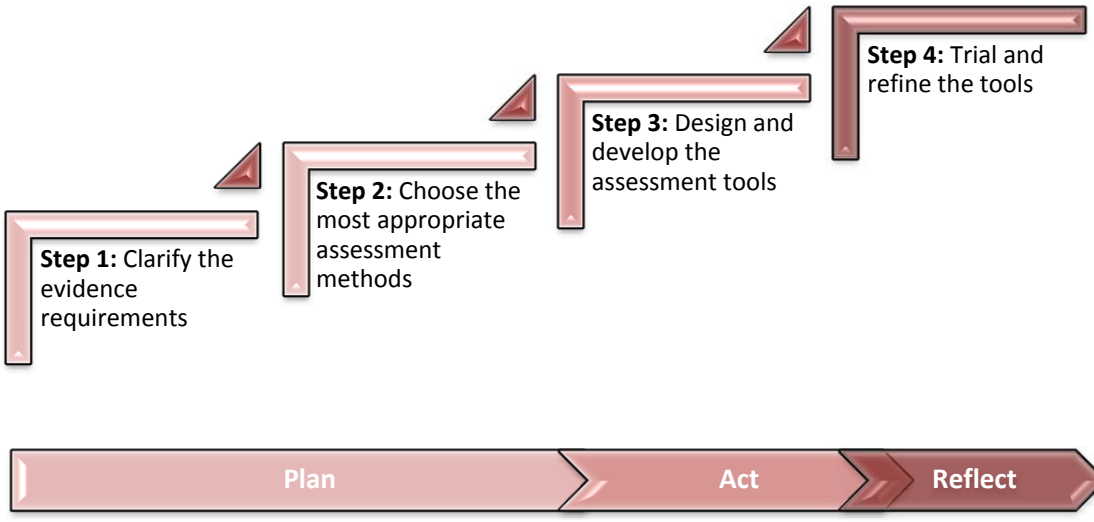
- Get down to business and devising the assessment tool(s); and

Step 4

- Trial and refine your tools to help you maximise confidence that the tool(s) can be used flexibly and help you to make valid, reliable and fair judgements.

In summary, the following four-step process will help you to design assessment tools that produce quality outcomes.

Table 10: Four-step process in assessment tool design



Step 1 – Clarify the evidence requirements

In the TVET sector, national competency standards — the smallest of which is a competency unit—are the benchmark against which a candidate is assessed. Other (additional) benchmarks might include learning outcomes from the curriculum document. The competency standard describes the work and the required standards of per-formance. Read the full competency standard carefully and familiarise yourself with the:

- **Overview** – this outlines the aspect of work to be assessed.
- **Competency units and performance criteria** – these describe the nature of the task to be assessed and the standard of performance that is expected.
- **Knowledge and understanding** – these provide information on the underpinning knowledge and understanding required to perform the.
- Identify the **employability skills** that the candidate will require to perform the work activity described in the unit of competency. **These are:**
  - **Task skills** – these involve performing the task to the required standard as described in the unit of competency
  - **Task management skills** – these involve managing a number of different tasks within the job
  - **Contingency management skills** – these involve responding to problems, breakdowns and changes in routine
  - **Job/role environment skills** – these involve fulfilling the responsibilities and expectations of the workplace.
  - **Transfer skills** – these involve being able to apply skills and knowledge successfully in new contexts.

Table 11: From benchmark to evidence collection[5]

Benchmarks determine evidence requirements

Benchmarks	Evidence requirements	Assessment (evidence gathering methods)	Assessment (evidence gathering tools)	Evidence produced
Benchmarks are the competency standards against which a candidate is assessed.	This is the information which, when matched against the benchmarks shows that a learner is competent.	These are the techniques used to gather different types of evidence.	These are instruments and instructions for gathering and interpreting evidence.	This is the information on which the assessment judgement is made.
Example Sell products to customers.	**Example** What is candidate's product knowledge? Customer service selling skills.	**Example** Real work observation Third party assessment.	**Example** Third party report Instructions for learners and lecturers.	**Example** Demonstration of product knowledge Demonstration of customer service and selling skills.

[5] *Source: Department of Training and Workforce Development: Western Australia 2013*

Step 2 – Choose your assessment method

Once you have examined the competency standard(s) you should be able to list the evidence requirements. Prepare a list of the evidence that might be collected to show that the candidate is able to perform the work activity described in the competency standard. The simple chart (Evidence Plan) below may help.

This evidence may be collected through a variety of methods. These include:

- **Direct –** observation of workplace activities and demonstration of specific tasks, observation of activities under simulated workplace conditions, observation of a role play, oral questioning, interviews.
- **Indirect –** assessment of qualities of a final product, review of previous work, written tests
- **Supplementary evidence –** supervisor reports, employer references, documentation about past or prior achievements, portfolios.

The assessor/trainer must determine the type and amount of evidence that is required and by which assessment method the evidence will be collected.

Template 1: Evidence Plan (Example)

Competency cluster						
Learning unit(s)						
List of evidence requirements: The evidence must show that the candidate is able to ……	**Assessment methods** [tick the column]					
	Oral questions	Obser-vations	Activities	Written questions	Work activity	
•						
•						
•						
•						
•						
•						
•						
Prepared by:		Date:				
Checked by:		Date:				

In your planning you should consider that the evidence requirements:

- are appropriate to the industry context
- are gender and culturally inclusive
- take into account the language, literacy and numeracy skills of both the assessor and the candidate
- minimise the cost of assessment
- involve the collection of a variety of forms of evidence
- may be customised to take into account local conditions, site requirements and enterprise specific practices
- utilise industry and enterprise reference materials, such as standard operating procedures and Material Safety Data Sheets.

Step 3 – Design and develop your assessment tools

Now that you have clarified the evidence requirements and identified which assessment methods you will use, it is time to design the assessment tools.

Assessment tools contain both the instrument and the instructions or procedures for gathering and interpreting evidence. They serve the assessor's/trainer's needs for objectivity and transparency, and the candidate's need for clarity and structure. Assessment tools should provide clear guidance and support for candidates so that there is no ambiguity about what is required of them or the basis on which lecturers will make decisions.

Preferably, assessment tools should require the candidate to demonstrate the five key components of competency. In general, assessment tools make provision for the following practical requirements:

- the student's name;
- the assessor's/trainer's name;
- the date of assessment;
- the title of the competency standard/competency cluster;
- the context of and procedures for the assessment;
- the list of knowledge/skills to be assessed;
- feedback for the candidate;
- the candidate's signature and the date;
- the assessor's/trainer's signature and the date;
- the instructions to the candidate, the assessor/trainer; and
- the resource requirements of the assessment.

Your assessment tool gives shape and form to your chosen assessment method. It must, therefore, be fit for purpose, which means you need to ask yourself which tool is needed to most effectively and efficiently support your chosen assessment method. You should pay particular attention to the language, literacy and numeracy skill level of the students and the requirements of the competency standard when you design your tool.

On the next pages you will find a range of best-practice (assessment tool) templates that you may want to use depending on the identified assessment method

Template 2: Observation Checklist (Example)

This template may be used for formative assessment.

Candidate name			
Assessor name:			
Assessment Centre			
Competency cluster	*[insert title of competency cluster]*		
Learning unit	*[insert title of learning unit]*		
Instructions for the assessor			
1. Observe the candidate *[insert description of activity being observed].* 2. Describe the assessment activity and the date on which it was undertaken. 3. Place a tick in the box to show that the candidate completed each aspect of the activity. 4. Complete the feedback sections of the form.			
Date of observation			
Description of assessment activity			
Location of assessment activity			
The candidate….		**If yes, tick the box**	
• *[insert actions to be observed]*			
•			
•			
•			
•			
•			
•			
•			
•			
•			
•			
•			
•			
Did the candidate's overall performance meet the standard?		**Yes**	**No**
Feedback to candidate:			
Assessor signature:		**Date:**	

Template 3: Observation and Questioning Checklist (Example)

This template may be used for formative assessment.

Candidate name			
Assessor name:			
Assessment Centre			
Competency cluster	*[insert title of competency cluster]*		
Learning unit	*[insert title of learning unit]*		
Instructions for the assessor			
1. Observe the candidate *[insert description of activity being observed].* 2. Describe the assessment activity and the date on which it was undertaken. 3. Place a tick in the box to show that the candidate completed each aspect of the activity. 4. Ask the candidate a selection of the questions from the attached list to confirm his/her underpinning knowledge 5. Place a tick in the box to show that the candidate answered the questions correctly. 6. Complete the feedback sections of the form.			
Date of observation			
Description of assessment activity			
Location of assessment activity			
The candidate….		**If yes, tick the box**	
• *[insert actions to be observed]*			
•			
•			
•			
•			
•			
•			
•			
•			
•			
•			
•			
•			
Did the candidate's overall performance meet the standard?		**Yes**	**No**

Observation and questioning checklist *[continued]*

Questions	**Satisfactory response**	
The candidate should answer the following questions:	**Yes**	**No**
1. [insert questions to be asked]	☐	☐
2.	☐	☐
3.	☐	☐
4.	☐	☐
5.	☐	☐
6.	☐	☐
The candidate's underpinning knowledge was: Satisfactory ☐ Not Satisfactory ☐		
Feedback to candidate:		
The candidate's overall performance was: Satisfactory ☐ Not Satisfactory ☐		
Assessor signature:	**Date:**	

Template 4: Demonstration (Example)

This template may be used for summative assessment.

Candidate name			
Assessor name			
Competency cluster(s)	*[insert name of competency cluster(s)]*		
Learning units	*[insert title of learning units]*		
Date of assessment			
Time of assessment			
Instructions for demonstration			
[insert the instructions for the candidate]			
Materials and equipment *[insert details of materials and equipment needed for the demonstration]*			
OBSERVATION	✓ to show if evidence is demonstrated		
During the demonstration of skills, did the candidate:	**Yes**	**No**	**N/A**
[insert the evidence requirements]	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
	☐	☐	☐
The candidate's demonstration was: Satisfactory ❑ Not Satisfactory ❑			

Demonstration *[continued]*

QUESTIONS	**Satisfactory response**	
The candidate should answer the following questions:	**Yes**	**No**
1. *[insert questions to be asked of the candidate]*	☐	☐
2.	☐	☐
3.	☐	☐
4.	☐	☐
5.	☐	☐
6.	☐	☐
The candidate's underpinning knowledge was: Satisfactory ☐ Not Satisfactory ☐		
Feedback to candidate:		
The candidate's overall performance was: Satisfactory ☐ Not Satisfactory ☐		
Candidate signature:	**Date:**	
Assessor signature:	**Date:**	

Template 5: Work related project (Example)

This template may be used for summative assessment.

Candidate name			
Assessor name			
Assessment Centre			
Competency cluster(s)	*[Insert title of competency clusters]*		
Learning units	*[Insert title of learning units]*		
Task:			
Your task is to: • *[insert description of project]*			
Submission date:			
Use the checklist below as a basis for judging whether the candidate's submission meets the required competency standards.			
The candidate's report….		**If yes, tick the box**	
[insert evidence requirements]			
•			
•			
•			
•			
Overall did the candidate's submission meet the standard?		**Yes**	**No**
Comments:			
Assessor signature:		**Date:**	

Step 4 – Trial and refine your assessment tools

The assessment tools should be piloted with a small sample of assessors/trainers. Feedback from your peers will confirm that the assessment tools are suitable for effective and sufficient evidence collection. Information gathered through this process should be analysed to establish any amendments that may be required. The redrafted assessment tools are then ready for printing and use. Last but not least, ensure to establish cyclic reviews that are critical for maintaining the quality of the assessment tools.

4.5 Plan, conduct and review assessment

By now that you have designed and trialed your assessment tools, let's have a look at the following steps which may be used in the process of conducting competency-based assessments. These steps apply to a summative assessment in both institutional and workplace contexts.

Step 1 - Establish the assessment context

The assessor/trainer:

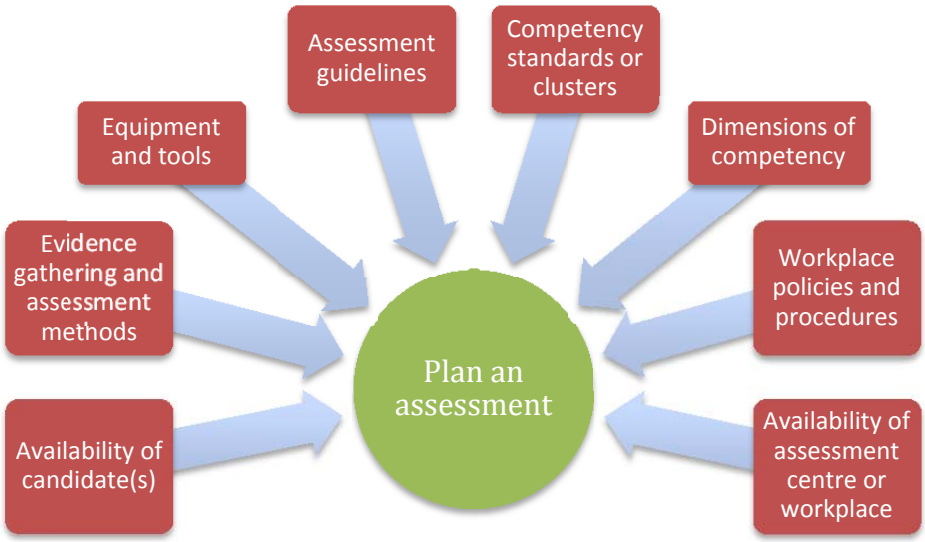
- establishes the context and purpose of the assessment
- identifies the competency standards and national assessment guidelines
- interprets the competency standards and identifies the evidence requirements

Step 2 - Prepare the candidate

The assessor/trainer meets with the candidate(s) to:

- develop an assessment plan
- explain the context and purpose of the assessment and the assessment process

Table 12: Factors to be considered in an assessment plan



- explain the competency standard(s) and the evidence to be collected
- outline the assessment procedure, the preparation which the candidate(s) should undertake and answer any questions
- assess the needs of the candidate(s) and establish any allowable adjustments in the assessment procedure
- seek feedback regarding the candidate's or candidates' understanding of the competency standards, evidence requirements and assessment process
- determine readiness of the candidate(s) for assessment and decide on the time and place of the assessment.

Step 3 - Plan and prepare the evidence gathering process

The assessor/trainer must:

- establish a plan for gathering sufficient and quality evidence (Evidence plan, page 50) about the candidate's performance in order to make the assessment decision
- source or develop assessment materials to assist the evidence gathering process
- organise equipment or resources required to support the evidence gathering process
- coordinate and brief other personnel involved in the evidence gathering process.

Step 4 - Collect the evidence and make the assessment decision

The assessor/trainer must:

- establish and oversee the evidence gathering process to ensure its validity, reliability, fairness and flexibility
- collect appropriate evidence and match compatibility to the competency units, performance criteria, knowledge and understanding in the relevant competency standards
- evaluate evidence in terms of the five dimensions of competency – task skills, task management skills, contingency management skills, job/role environment skills, and transfer skills
- evaluate the evidence in terms of validity, consistency, currency, equity, authenticity and sufficiency
- consult and work with other staff, assessment panel members or technical experts involved in the assessment process
- record details of evidence collected
- make a judgement about the candidate's competence based on the evidence and the relevant competency standard(s).

Step 5 - Provide feedback on the assessment

The assessor/trainer must provide advice to the candidate about the outcomes of the assessment process. This includes providing the candidate with:

- clear and constructive feedback on the assessment decision

- information on ways of overcoming any identified gaps in competency revealed by the assessment
- the opportunity to discuss the assessment process and outcome
- information on reassessment and appeals processes.

Step 6 - Record and report the result

The assessor/trainer must:

- record the assessment outcome according to (national) assessment arrangements
- maintain records of the assessment procedure, evidence collected and the outcome
- maintain the confidentiality of the assessment outcome

Step 7 - Review the assessment process

On completion of the assessment process, the assessor/trainer must:

- review the assessment process
- report on the positive and negative features of the assessment to those responsible for the assessment procedures
- make suggestions on improving the assessment procedures

Step 8 - Participate in the reassessment and appeals process

The assessor/trainer must:

- provide feedback and counselling to the candidate(s), if required, regarding the assessment outcome or process
- provide the candidate(s) with information on the reassessment and appeals process
- report any assessment decision that is disputed by the candidate(s)
- participate in the reassessment or appeal.

Source: VETASSESS - http://www.vetassess.com.au

Task 2: Assessment tools

Task

Due date for this assignment: _____

Assessment tools are prepared materials that assessors/trainers can use to assist with the process of collecting evidence regarding whether candidates have achieved competency. In some cases, assessors/trainers may use prepared assessment materials or develop their own assessment materials.

a) Submission1:
Develop assessment tools based on a competency standard of your choice, comprising of:

- Assessment plan
- Evidence plan
- Assessment tool for practical observation support by questions

b) Submission 2:
Discuss the assessment tools with colleagues. Document their feedback and refine your assessment resources.

5. Need for quality assurance

Quality assurance plays an important role in the reform process of TVET systems worldwide to improve performance and attractiveness. Pakistan needs to increase TVET responsiveness to changing labour market demands by increasing the effectiveness of TVET 'outcomes' in improving the match between education and training demand and supply. This will assist in achieving better levels of employability for the workforce and to improve access to training, especially for vulnerable labour market groups.

As an important step towards improved quality the NAVTTC has been mandated to establish an internationally acceptable system of accreditation for vocational education and training in Pakistan. Therefore, the NAVTTC has established the National Accreditation Council for Technical and Vocational Stream (NAC-TVS) as accreditation body in the TVET sector.

5.1 Accreditation

Accreditation is an instrument to create public trust as well as national and international credibility in the quality of technical and vocational education. By setting agreed standards it helps to enhance the quality of individual programmes, institutes and the TVET sector as a whole.

"Quality" in this context means that a programme is fit for purpose, i.e. it guarantees that students will receive qualifications at the right level and acquire com-petences relevant to the expectations of employers. Institutes are fit for purpose when they manage to continuously and reliably provide a range of programmes that fulfil expectations with regard to qualifications levels and employers' expectations.

The establishment of an accreditation regime in Pakistan serves a number of objectives in the development of TVET reform, such as;

- to assure the quality of institutions and programs by verifying that they meet previously agreed and established standards;
- to develop quality and employability of workforce in the country;
- to enhance workforce mobility and mutual recognition of qualifications within the country and abroad;
- to help parents and students to identify quality TVET institutions;
- to encourage improvement of institutions or programs that have already met basic standards, through continued focus on goals and achievements;
- to involve faculty and staff in institutional evaluation and planning;
- to create goals for improvement of weaker institutions and stimulate institutional growth and development through continuous evaluation and improvement;

- to certify institutional or program sufficiency as a partial basis for decisions about the transfer of academic credit from one institution or program to another;
- to decide on eligibility of institutions for financial assistance from the government and donors;
- to facilitate networking and sharing of best practices of accredited institutions at national and international level;
- to protect institutions against harmful internal and external pressures.

There are typically two types of accreditation:

- **Programme accreditation** focuses on the design and delivery of a professional or vocational programme and assesses its fitness to qualify students for a defined qualification level and to provide them with skills and competences that meet employers' expectations.
- Ins**titutional accreditation** assesses the capability of a TVET institution to successfully manage to provide a quality education over a period of time. Institutional accreditation mainly assesses the internal quality management processes of an institute

Accreditation is a continuous process, i.e. a programme and/or institution is accredited for a certain period of time (3 years) and will have to undergo a new accreditation process after that period to maintain (or upgrade) its accreditation status.

Source: National Vocational & Technical Training Commission: ***(Draft) Accreditation Manual Technical & Vocational Stream.*** *Pakistan 2014*

5.2 Continuing Professional Development

Continuing professional development (CPD) is one of the building blocks in quality assurance for any organisation. Its positive impact on the organisation and improved quality of student learning and achievement is based on the concept that TVET trainers at all stages in their careers are able to learn, progress and keep up to date. This approach keeps the trainers motivated and helps them to appreciate their impact on the organisation, enhance their confidence and facilitate succession planning.

CPD also encourages innovation based on knowledge and research as TVET trainers keep their knowledge and skills up-to-date with regard to changes and development of curriculum, pedagogy, technology, and legislation.

There are many types of CPD activities, which can help TVET trainers at every stage of their career, and suit their own interests and availability of time.
The main areas of activity are:

- Conferences
- Networking groups
- Magazines
- Memberships,

- Colleague mentoring
- Observation
- Research
- Training and industry attachments, and
- Workshops.

Remember to note activities you have completed, what you have learned from each, how you will use them, and any further actions and goals for the coming year. This latter aspect ensures the continuity of your personal CPD planning process.

We wish you good luck!