IMPLEMENTING COMPETENCE
BASED TRAINING AND EDUCATION

PRACTICAL HANDBOOK

for educational professionals and policy makers

ACQF
African Continental
Qualifications Framework

African Union

THE AFRICA-EU PARTNERSHIP

LE PARTENARIAT AFRIQUE-UE

**DEVELOPING THE AFRICAN CONTINENTAL
QUALIFICATIONS FRAMEWORK (ACQF)**

IMPLEMENTING COMPETENCE BASED TRAINING AND EDUCATION
A practical Handbook for educational professionals and policy makers

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ACRONYMS

ACQF	African Continental Qualifications Framework
CBT	Competence based training and education
CEDEFOP	European Centre for the development of Vocational Training
COTVET	Council for Technical and Vocational Education and Training
CTVET	Commission for Technical and Vocational Educational Training
EQF	European Qualification Framework
ESCO	European Skills, Competences, Qualifications and Occupations
NEET	Not in Education, Employment, or training
NQF	National Qualifications Framework
OP	Occupational profile
PDCA cycle	Plan-Do-Check-Act cycle
TVET	Technical Vocational Education and Training
UNESCO	United Nations Education, Scientific and Cultural Organisation
VNFIL	Validation of Non-formal and Informal Learning

HOW TO READ THE HANDBOOK?

The adoption of CBT and learning offers a promise for improvement of quality of education. However, in order to implement it effectively, a number of prerequisites have to be taken into account1. First of all, practitioners, policy makers in education and training should be familiar with what competence-based teaching and learning entails. This also implies capacity building and involving practitioners in the entire process of CBT. The shift from traditional learning methods towards competence based training and assessment implies also another way of looking at education and training. Consequently teachers should be open and flexible to learn new teaching methods suitable for CBT.

For as successful implementation, the involvement and support of government and labour market is crucial. The government in collaboration with stakeholders should support schools with enough funds and facilities to enable teachers to implement competence-based teaching and learning effectively and offer the students quality CBT. TVET institutes should be facilitated and supported in the provision of different learning situations for the students, as context-based learning is an important element of CBT.

The handbook focuses on the support for teachers and practitioners. It is designed for the end-users which include CBT developers and implementers, educational experts, practitioners, mentors, trainers of practitioners and policy makers. The handbook serves multiple purposes:

- As a step-by-step guide for the practitioners to learn and inform themselves. Part II of the handbook is build up from building blocks with concrete (real life) examples and to use by itself.
- As learning material for teacher training in case of upskilling or a refresher course for practitioners.
- As a support for the decision making process for policy makers.
- As a support for policy makers, educational experts and CBT developers to revise programs. Because of the practical.

Structure of the handbook Competence Based Training

The handbook consists of two parts.

PART I: understanding CBT

Part I is the theoretical background and foundation on CBT. It describes the definition, the benefits, the main characteristic and the challenges. Especially focused on CBT in African countries.

The building blocks of part I (navigate directly to the chapter via the arrows below).

The definition of CBT ⟩ Critical success factors and challenges ⟩ Quality Assurance ⟩ The importance of CBT for Life long learning

Figure 1: building blocks of CBT.

In terms of sustainable implementation, quality assurance measures are crucial. It describes how the Plan- Do-Check-Act cycle can be applied in CBT. As an important aspect of sustainability, it is described how CBT can be kept up to date. As one of the characteristics of CBT is the openness towards other ways of learning as non-formal and informal learning, attention is paid towards the importance of CBT in the perspective of lifelong learning.

PART II: Implementing CBT

Part II is the practical guide for implementation. It is built upon four building blocks. Each building block describes the process of development and is supported by real life practical examples and formats. The steps can be followed in this sequence, but can also be used as stand alone elements.

The building blocks of part II (navigate directly to the chapter via the arrows below).

| STEP 1: from occupational profiles to learning outcomes | STEP 2: from learning outcomes to standards and modules | STEP 3: from modules and standards to curricula | STEP 4: implementing CBT | STEP 5: assessments in CBT |
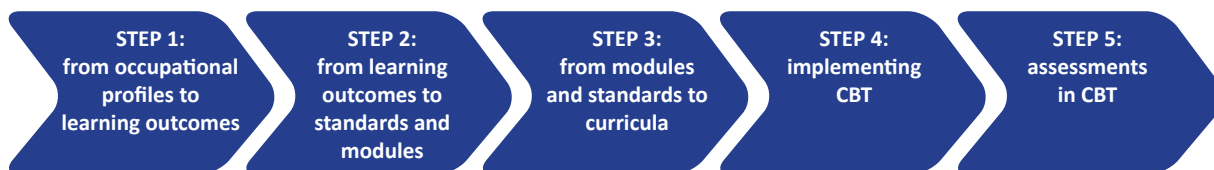
Figure 2: building blocks CBT.

In the manual, the following icons are used to indicate an interactive element:

Learn more – A link to more information about the subject.

Watch more – A link to an informative clip.

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1. *Competency-based-teaching-and-learning-approach-towards-quality- education.pdf (tenmet.org)*

1. PART I UNDERSTANDING COMPETENCE BASED TRAINING (CBT)

| The definition of CBT | Critical success factors and challenges | Quality Assurance | The importance of CBT for Life long learning |

Figure 1: building blocks of CBT.

1.1 The definition of CBT

The intention of any education system is to develop competent and confident individuals who can use the acquired knowledge and skills to contribute to personal and professional development and to the development of the society in general. Especially TVET has the role of preparing learners to be able to skilfully perform and grow on the labour market and be a responsible citizen.

However, there have been more and more complaints from employers, and they argue that many graduates have good examination grades, but they lack the competences required in the world of work. Employers increasingly require a mix of competences and professional attitude and not a certain degree the candidate has obtained.

> This has lead to another a rethinking of traditional education and training systems leading in a shift towards outcome-based learning rather than input-based learning .
>
> "An approach to vocational education and training in which skills, knowledge and attitudes are specified in order to define, steer and help to achieve competence standards, mostly within a kind of national qualifications framework." – UNESCO

Traditional education and training is based on the memorization of factual knowledge, competence-based education and training is focused on understanding and applying the concepts, skills and competencies, which in turn calls for changes in teaching, learning and assessment approaches.

Competence-based training and education refers to the way of instruction and assessment that is based on learners demonstrating the knowledge, skills and that are expected to possess at the end of the learning process.

> **Read more about CBT:**
> - ACQF: Competence-based training, a brief overview
> - ILO: CBT Infographic

1.1.1 The benefits of CBT

Competence Based Training is developed to provide quality education and training that serves the needs of the labour market and puts the learner in the centre. This means that the benefits are mainly for labour market and learners .

CBT informs learners in what is expected of them and improve the readiness for certain occupations. It gives clear insight in what is expected from the point of view of labour market. CBT identifies transferable skills that can be used in different workplaces. As a consequence, employability of learners will be improved and leads to people that are less vulnerable on the labour market. Besides the attention to professional competences, there is also a focus on the personal development. For example professional behaviour and attitude.

CBT offers for learners flexible pathways. This implies not only that a student in formal education has more opportunities to flow towards another qualification, it implies also that individuals that are not enrolled in education can enter the educational system easier at their level of performance. In particular in combination with systems for the recognition of prior learning.

The benefits for employers are clear. In the CBT approach, qualifications are developed that reflect the needs of the labour market. This leads to a better match of holders of a qualification and the labour market. CBT strengthens the role of employers in identifying the required competencies and standards, leading to a stronger role and commitment of labour market in the definition of standards and in the provision of training (via work based learning). Another benefit for the employers is that CBT facilitates the recruitment of new employees by identifying the competencies required for an occupation and the professional development of employees by indicating the necessary skills.

The educational institutes are the providers of CBT. Where the benefits for the learner and labour market are clear, the benefits for the educational institutes seem less highlighted. CBT enables educational institutes to put the student in the centre and to provide education that is inclusive for everybody. It is possible to gain information about how people learn to make education more qualitative, efficient and effective (and therewith more profitable). By giving more attention to practical training, we see an increase in motivation of students because education is more practical therefore it makes more sense for the student why they are educated. This is especially the case in TVET where students are more practically oriented than in higher education. Students are also prepared for lifelong learning. When students are aware of the importance of lifelong learning, it will be more likely that they will follow another formal (or non-formal) training course for upskilling or change of career paths. The educational institutes can play a huge role in lifelong learning.

1.1.2 The main characteristics of CBT

When developing and implementing CBT, it is important to have a clear view on the elements and features that are included in CBT. The most distinctive pedagogical feature of this approach is the social constructivism approach. The central idea is that learners develop and construct their own knowledge and seek ways to make optimal use of other people's competence in their learning journey. Social constructivism is built upon the principles that learning is a social process and takes place in interactive environments with other people. Furthermore, learning is more effective in practical environments and when the training is tuned to the learning style of the learner.

This implies that CBT requires meaningful contexts, an interdisciplinary approach of learning methods, interaction in learning and space for discovery and reflection in learning in a way that it stimulates the process of personal and professional development.

Building further on the above, the main features of CBT are the following:
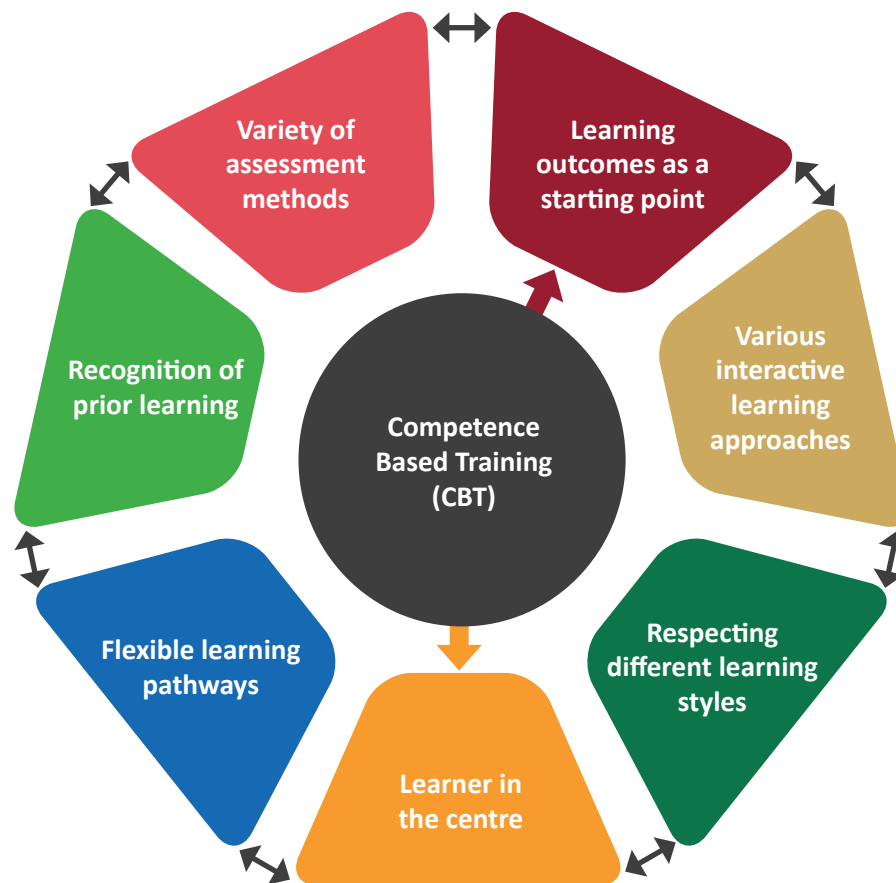
Figure 3: Characteristics of CBT.

One of the main features is that CBT is built upon a competence framework in units of **learning outcomes**, that specifies the competencies required for effective performance in an occupation or job. Another main feature is that CBT puts the **learner in the centre**. CBT must include attention to the **learner's needs and learning styles**, providing the time needed for the learner to acquire and repeatedly perform or demonstrate the expected learning outcomes (knowledge, skills, competences, including professional behaviours) and creating a supportive environment for learning. CBT should enhance self-regulated learning and provide space for the learner to create their own learning pathways. In this perspective, CBT should also enable the laddering of competencies across several education levels, **flexible pathways** and an entrance of the learners at their level of performance.

Furthermore, CBT should be pursued through **various teaching approaches** and include powerful or rich learning environments that enable students to engage in meaningful learning processes. This include also measures to make learning more effective and attractive, like serious gaming, practical training, study visits etc. However, the prerequisite is that all curricula need to be evidence-based and outcome focused, and all teaching strategies need to be matched to their learning domain (psychomotor, cognitive and affective).

CBT include different types of **assessment methods** whether the learner has achieved the required learning outcomes. The starting point are the learning outcomes and the assessment method is designed in a way that it can measure the achievements in the best way. This can include a system for formative competence assessment, to monitor competence growth, but also a system for valid and trustworthy authentic summative assessment, to test the actual mastery of the key competencies for a job or occupation of the candidate.

CBT should enable the **assessment of prior and informal learning**, which can measure the learning outcomes a candidate for a training, education or development program already masters. Where relevant and possible, such an assessment can lead to a personal learning plan/ personal transcript and/ or exemptions from certain courses or modules.

1.2 Challenges in CBT, with the focus on Africa

Where there are many benefits of CBTs, the reality shows serious challenges in the implementation of CBT. The main challenges that African countries are facing in the implementation of CBT are highlighted by the experts involved in the study on CBT practices in 7 African countries.

Challenges at the level of **capacity of teachers and trainers:**

1. Lack of awareness on CBT at all levels;
2. Lack of guidance of teachers and trainers;
3. Willingness to change on the side of both teachers and government;
4. School readiness. Not every TVET institute is ready for the implementation of CBT;
5. Poor distribution of documents and instruments among CBT providers;

Challenges at **policy level** (national, regional, institutional):

6. Lack of harmony in the development and implementation of CEBT, even if there are national qualifications and standards, huge differences exist at sector and institutional level (often thanks and due to donors);
7. Lack of strategic planning and vision for the implementation of CBT at country level;
8. Lack of a strategy and planning for updating curricula and qualifications, involving industry;

Challenges at the level of **technical resources and infrastructure:**

9.   Lack of financial resources;
10. Lack of infrastructure, mainly sufficient quality workplaces in industry;
11. Poor provision of conditions for training like equipment and materials;

Challenges at the level of **human resources:**

12. Large number of students and overcrowded classroom, making learner centred pedagogical approaches difficult;
13. Lack of teachers;
14. Lack of autonomy of management to recruit, motivate and retrain skilled and experience staff at TVET providers level;
15. Teacher-students' ratios should be emphasized at all levels of education to maximize teacher-student and student-student interactions.

The handbook contributes to solutions for challenge 1, 2, 3, 4, 5, 6, 7, 8, 10, 11, 12.

1.3 Quality assurance in CBT

1.3.1 How to apply a Plan-Do-Check-Act cycle in CBT?

Not every TVET institution is at the same level of CBT development and implementation. This argues for a practical step by step approach and a clear overview of the different steps in CBT development and implementation, with sufficient attention for the integration of theory and practice. The main steps in the process are illustrated in figure 4.

The first phase in the process is focussed on the understanding and development of learning outcomes with a reference to skills taxonomies and descriptors in the NQF that facilitate the description of learning outcomes. In this handbook, step 1 provides a step-by-step approach on the concept of learning outcomes and on how to develop learning outcomes.

CBT is based on the principles of the backward design model. The backward design model shows that developed learning outcomes and assessment standards are the starting point for the design of the rest of the CBT and should be developed first. The standards are developed based on the learning outcomes and give direction for the way of assessment and training provision. Where thinking about assessments and standards is often the final step, it should be considered first. In the handbook the development of the standards is included in step 2 and the curriculum development in step 3.

The learning outcomes and standards that are developed give direction to the way the CBT has to be provided (step 4). In CBT this implies a variety of pedagogical methods to make sure the students get the opportunity to acquire the competences in one or more contexts that are relevant for the learning outcomes. As a consequence of CBT, there is a variety of methods to assess whether the learner has achieved the learning outcomes (step 5). This can be a theoretical assessment, but also a practical assessment in a real- life situation, or assessments in a practical simulation to measure the progress. The learning outcomes are leading for the type of assessment. For example, when the learning outcomes require that a learner has to be able to carry out specific tasks in a specific context, the assessment should be focused on the demonstration of the tasks in that context (and not on a theoretical exam).

Developing learning outcomes, and creating units/ modules. (STEP1)

Developing standards and designing curricula with independent assessment, captured in service documents. (STEP 2+3)

Implementing and assessments of CBT in flexible learning pathways. (STEP 4+5)

Realisation and evaluation and updating qualifications, curricula and pedagogic methods.
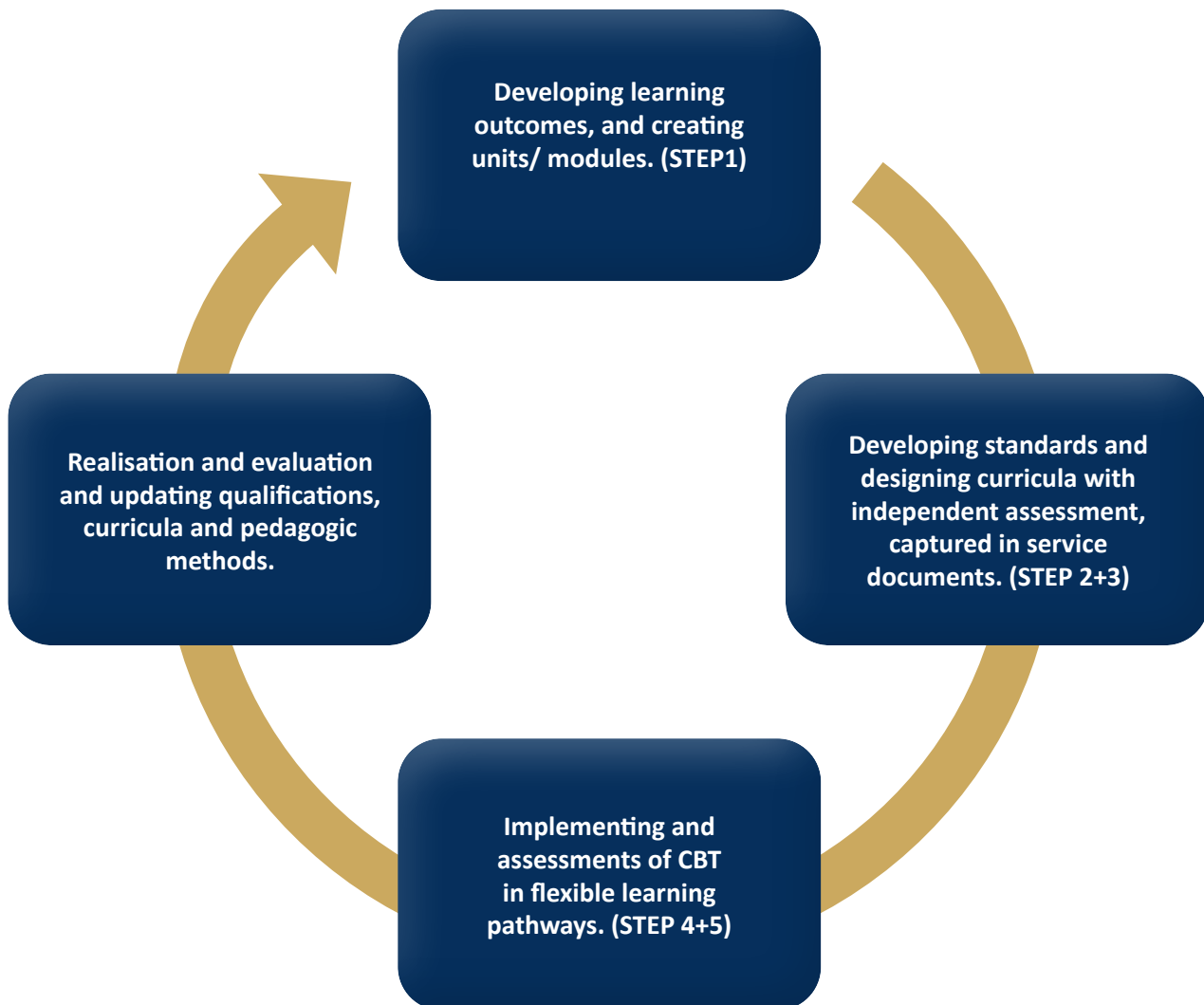
Figure 4: The main steps in designing flexible CBT.

The development and implementation of CBT should be seen as a cycle, not as a linear approach. This means that after realisation and evaluation, there is a continuous process of improvement, following the principles of the PDCA cycle in quality assurance. In this way, we generate innovation in education and training approaches. Besides, the PDCA cycle can help to monitor if training programmes in TVET are tuned to the needs of the labour market (starting point) and can be used as a way to continuously evaluate if TVET is up to date, relevant and attractive.

For example, in case of new demands and perspectives related with the digital transformation of learning and certification, green skills, transversal skills, new forms of work etc, the CBT should be evaluated and where necessary innovated. However this element of quality assurance is often not discussed in the literature, it will be part of the surveys and interviews. Recommendations and findings will be translated into practical steps for practitioners to apply quality assurance principles in CBT.

1.3.2   How to keep qualifications up to date?

The ACQF describes four dimensions of quality assurance, which all relate to the qualifications:

- Quality qualifications: concepts and characteristics, quality cycle;
- Minimum criteria for the quality of qualifications;
- Quality assurance elements from a qualification system perspective; qualification standards assessment and certification;
- Qualifications quality chain.2

Essential to CBT and quality assurance, is to keep qualifications and curricula up to date. Once qualifications are developed, a system of updating qualifications (and therewith curricula) has to be put in place. The success of CBT lies in the fact that graduates meet the requirements of the labour market. If qualifications and curricula are outdated and not following the latest trends, developments and innovations, graduates will experience difficulties in finding a job.

The involvement of stakeholders and sector representatives is crucial in this process. Qualifications are often updated at sector level and can follow the following pathways:

Pathways for designing qualifications

Route	Characteristics	Advantages	Disadvantages
"Formal"	Based on skills needs analysis that shows whether there is a skills mismatch with the current qualifications. The current situation on the labour market (for a specific occupation) is the basis for the qualification. What are skills and competences that are relevant on the labour market?	Strong involvement and commitment of industry Up to date qualifications, taking into account the latest developments and innovations. Qualifications reflect the "real needs" of the labour market.	Time consuming process (might take years).
"Pragmatic"	The current qualification and standards are the main input documents for the new qualification. It is about identifying relevant competences based on previous qualifications and standards. The labour market is involved as a sounding board, as soon as the concept qualification is developed.	A good alternative if the formal route seems not to be realistic/ feasible. Efficient method. The workload for the stakeholders in the labour market is not too high.	The qualification might not be based on the current situation on the labour market.

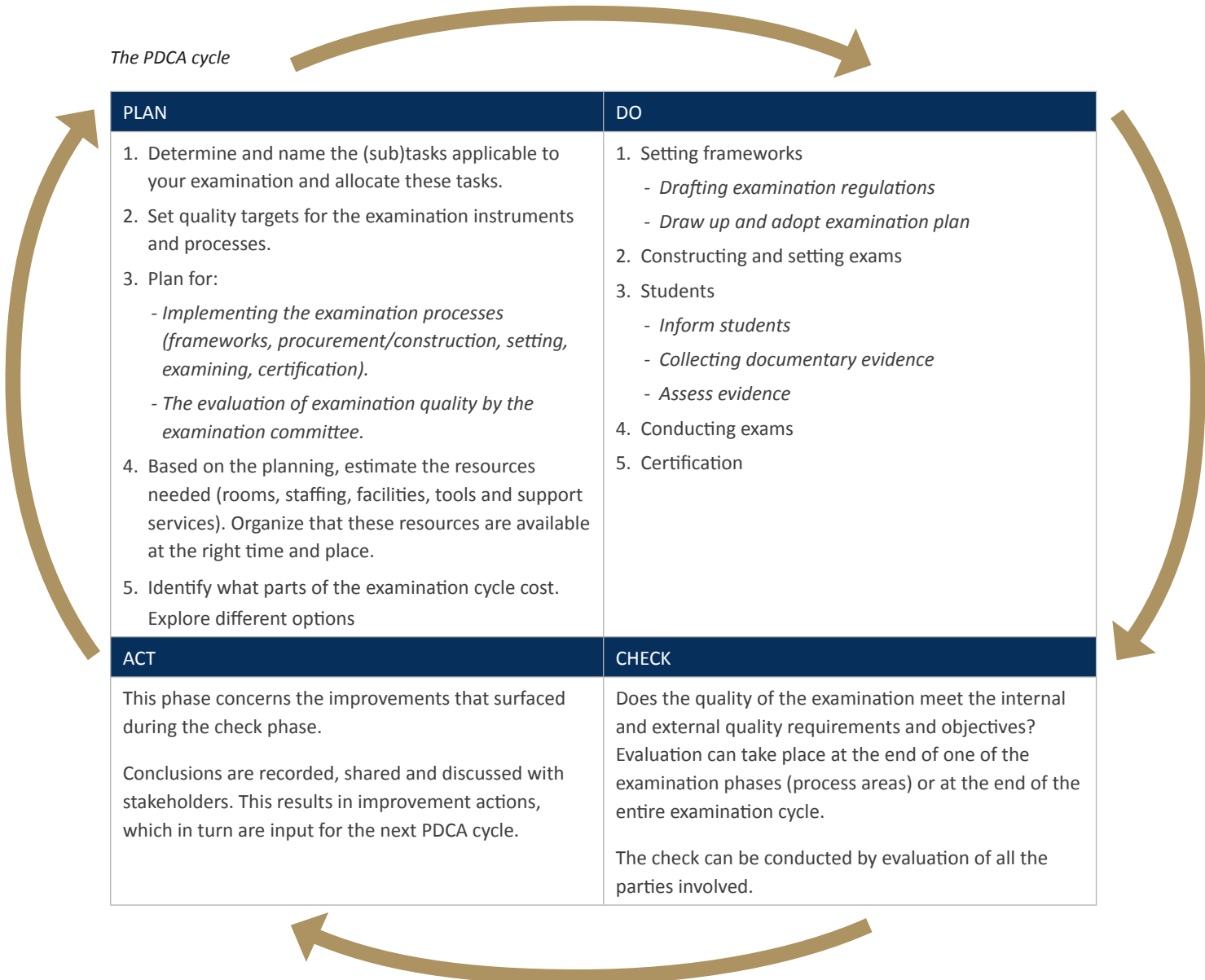*2. Training module 5, Quality assurance in the context of ACQF (ACQF)*

In the process of measuring the effectiveness and relevance of TVET programmes, the feedback of end users is crucial. This means the feedback of students, alumni and employers. In an ideal situation, networks for alumni and tracer studies are set up to receive information on the effectiveness of TVET. The reality shows that where in higher education (especially universities), tracer studies are used to receive information on the effectiveness of education, tracer studies are still not very common and widespread implemented in TVET.

As stated above, an alternative can be to set up focus groups and experts sessions with sector representatives to provide feedback on the match between the demand of the labour market and the qualifications that are provided by the TVET institutes.

1.3.3   Factsheet Quality Assurance

How to evaluate CBT and use the PDCA cycle

The PDCA cycle

PLAN	DO
1. Determine and name the (sub)tasks applicable to your examination and allocate these tasks. 2. Set quality targets for the examination instruments and processes. 3. Plan for: - *Implementing the examination processes (frameworks, procurement/construction, setting, examining, certification).* - *The evaluation of examination quality by the examination committee.* 4. Based on the planning, estimate the resources needed (rooms, staffing, facilities, tools and support services). Organize that these resources are available at the right time and place. 5. Identify what parts of the examination cycle cost. Explore different options	1. Setting frameworks - *Drafting examination regulations* - *Draw up and adopt examination plan* 2. Constructing and setting exams 3. Students - *Inform students* - *Collecting documentary evidence* - *Assess evidence* 4. Conducting exams 5. Certification
ACT	**CHECK**
This phase concerns the improvements that surfaced during the check phase. Conclusions are recorded, shared and discussed with stakeholders. This results in improvement actions, which in turn are input for the next PDCA cycle.	Does the quality of the examination meet the internal and external quality requirements and objectives? Evaluation can take place at the end of one of the examination phases (process areas) or at the end of the entire examination cycle. The check can be conducted by evaluation of all the parties involved.

1.3.4   Quality assurance and ACQF

The ACQF has developed several guidelines on quality assurance, under which a training module. In the training module you can find definitions, referencing criteria, examples and reflective questions. More information can be retrieved via the following link.

1.4 The importance of CBT for lifelong learning

Our diploma represents just a fraction of what we learn in life. Everything that we learn outside the formal educational system, like during work, traveling, in leisure time, courses or workshops is as much important, but often not captured in tangible proofs. However, these acquired competences are a valuable indication of someone's personality and what someone is really capable of in a professional context.

Let's clear out some relevant terminology:

Relevant terminology

Terminology	Definition[3]
Formal learning	Education or training provided in educational institutions, such as schools, universities, colleges, or of-the-job in a workplace, usually involving direction from a teacher or instructor.
Non-formal learning	Planned learning activities, not explicitly designated as learning, towards the achievement of a qualification or part qualification; often associated with learning that results in improved workplace practice.
Informal learning	Learning resulting from daily activities related to work, family or leisure. It is not organised or structured (in terms of objectives, time or learning support). Informal learning in most cases is unintentional from the learner's perspective. It typically does not lead to certification.
Validation of non-formal and informal learning (VNFIL)	An assessment process that assesses the individual's non-formal and informal learning to determine the extent to which that individual has achieved the required learning or competency outcomes.

From the definitions above the conclusion is that the main difference between formal, non-formal and informal learning is whether learning is structured and intentional or not. In addition to the definition of VNFIL, the learning achievements are assessed for the purposes of alternative access and admission, recognition and certification, or further learning and development.

Why is this distinguish important and how can we apply the different ways of learning and the recognition of it as a way to strengthen the society?

Economic crisis lead to a shortage of jobs. In times of economic depression is utmost important to make sure that people have the right skills and competences to find and to keep a job. Besides, the right skills and competences are necessary to navigate easier on the international labour market, making (young)people less vulnerable. In this perspective, the validation of non-formal and informal learning has been of great value as it enabled people to get their skills and competences, no matter where they were achieved, recognized and validated.

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3. See Glossary at the end of the handbook

The principle that "Learning takes place at all times, in all contexts" is the major foundation of the validation of non-formal and informal learning (VNFIL).

But the validation of non-formal and informal learning is not only important in times of economic depression. It is a way to get competences, skills and knowledge recognized that people have achieved in their entire life. It offers opportunities for people to enter the educational system at their level, to get (back) to work, to go to another country or region to study or work etc. It has become a right of people to let their achievements become valuable and count.

In the African context, there are also examples that illustrate the call for validation of non-formal and informal learning. In the study report on CBT in seven African countries, discussion and interviews were held with experts in TVET and CBT. From this study it seems that the following situations argue for a TVET system that is open for the validation of non-formal and informal learning.

• In many African countries, there is a large number of people working in the informal sector. Especially by people that are not holding a qualification. The experiences that they have gained during their work remain invisible.

• Schools are facing a lot of early school leavers. Some of them go to work directly, but others don't. Without a diploma it is difficult for young people to get a job and/ or get back to school for further development.

• Migrants and refugees often have the intention to stay temporarily and have the intention to go back to their country or region. When going back it can help migrants and refugees when the skills and competences they have gained in the time that have worked and/ or studied in another country or region are recognized.

• A lot of jobs that require now a qualification, did not require a qualification before. On one hand because there were no qualifications, on the other hand because of national/ regional or job specific regulations (for example in healthcare, technical or safety sector). This means that people who are carrying out the job might be at risk when they stay unqualified.

• Worldwide developments as digitalization and greener economy have impact on skills that people need to current jobs. Rather than following an entire training programme, additional modules that are tuned to the individuals' needs and level work efficiently and effectively.

In all situation as described above, validation of non-formal and informal learning enables people working in the informal sector to get more opportunities for further work and further learning, making them less vulnerable on the labour market.

1.4.1   Prerequisites for a good functioning system of validation of non-formal and informal learning

It is important to mention, that in the situation of validation of non-formal and informal learning, it is not only a matter of putting in place systems and instruments . There is more needed .

It requires another way of thinking about education and training and lifelong learning in particular. Learning doesn't longer take place in one school and/or in one country, but learning takes place everywhere. This implies that there should be more "trust" in the competences that are not captured in a certificate or diploma but achieved via validation arrangements. Validation of skills and competences contribute to the inclusion of people in the society and contribute to solutions to the emerging need for skilled workforce on short and longer term.

A good functioning arrangement for validation should take into consideration the national, regional, sectoral and/or local needs and characteristics. It should fit the needs of the target group. At the same time, systems should be open

for individuals from abroad. This means that systems should be easily accessible, understandable, transparent and attractive to enter for an individual coming from abroad.

Describing the process of validation of non-formal and informal learning is beyond the scope of this handbook. However, it is worth mentioning some important recommendations, based on the CBT study, that can be taken into account in CBT in order to facilitate validation of non-formal and informal learning in a later stage:

1. Promote work-based learning in all its forms, with special attention to apprenticeships, by involving social partners, companies, chambers and VET providers, as well as by stimulating innovation and entrepreneurship.

2. Further develop quality assurance mechanisms in VET with a particular focus on continuous information and feedback loops in TVET systems based on learning outcomes.

3. Enhance the access to VET and qualifications for all through more flexible and permeable systems, notably by offering efficient and integrated guidance services and the making validation of non-formal and informal learning possible.

4. Further strengthen key competences in VET curricula and provide more effective opportunities to acquire or develop those skills through initial and continuous VET, in collaboration with industry.

5. Introduce systematic approaches to, and opportunities for, initial and continuous professional development of VET teachers, trainers and mentors in both school- and work-based settings.

6. Make students aware of the importance of lifelong learning during their TVET pathways, by working on a portfolio.

7. Work together with employment services and youth workers organizations, as NEET's (Not in Employment, nor Education or Training) are difficult to reach and get on board.

8. Use of a qualification framework (ACQF) can support the validation of prior learning. It is a reference and makes qualifications more transparent.

1.4.2   How can the ACQF help in the validation of non-formal and informal learning?

One of the characteristics of systems for the validation of non-formal and informal learning is the assessment of the competences, skills and knowledge of individuals against a specific standard. This standard often depends on the purpose. For the purpose of upskilling and gaining additional technical competences that are required for a specific job or occupation, sector standards can be used. For the purpose of entering the educational sector and for the purpose of achieving a certificate or diploma, it is better to use national qualifications. National qualifications like the ACQF can be used as a common reference standard in helping recognize individuals' competences as they function as a "translation device" between two countries or between different educational (formal and/ or non- formal) training programmes. See figure 5.

The ACQF should benefit individuals by increasing access to, and participation in, lifelong learning. By establishing the ACQF as a common reference point, the ACQF is an indication of how learning outcomes may be combined from different settings, for example formal study or work, and from different countries. The ACQF can support individuals with extensive experience from work or other fields of activity by facilitating validation of non-formal and informal learning. Figure 6 shows how the system of recognition of prior learning works in practice .
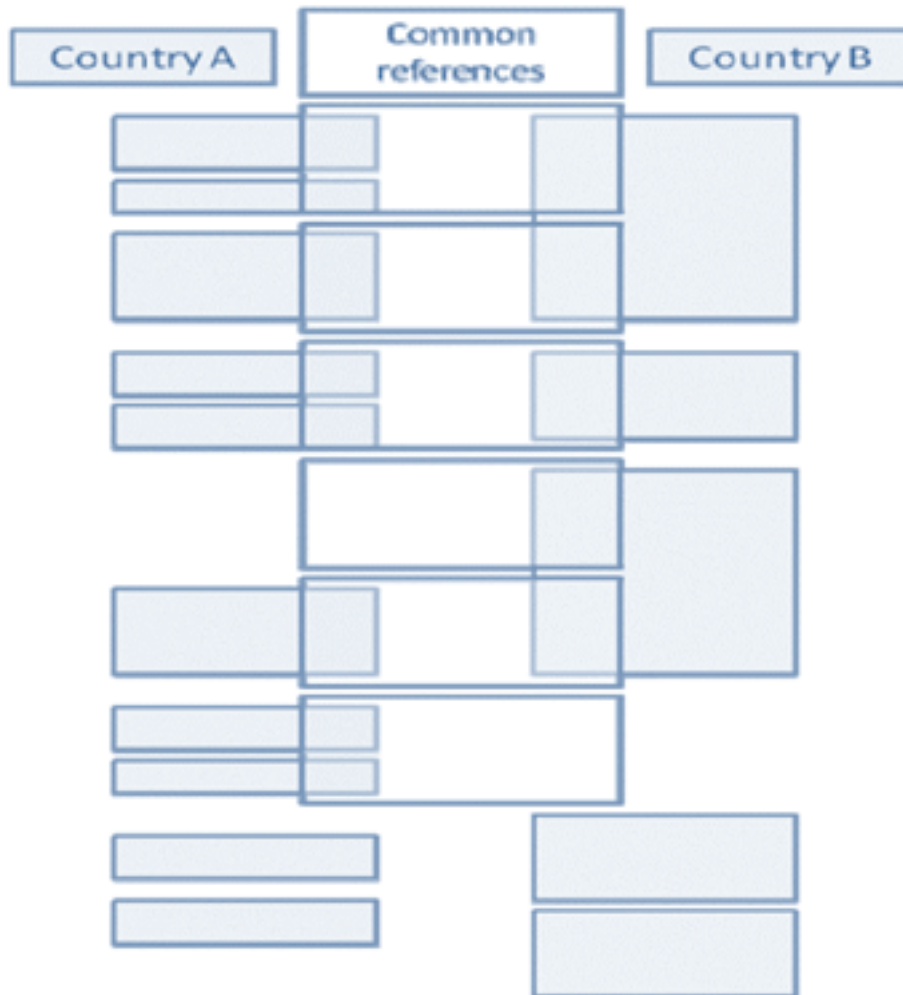
Figure 5: using the ACQF as a common reference for validation of non-formal and informal learning[4] .

Figure 6: using the ACQF as a common reference for validation of non-formal and informal learning.[6]

A possible scenario is the following (in the situation of migrants and or job seekers):

1. The individual wants to validate the skills and competences that he/she has acquired during working and training in own region or country. The purpose is to find out what his competences are worth in the country of destination. For example, to enter the labour market, to enter the educational system or to follow an extra training in order to obtain a formal certificate or diploma.

2. The individual is guided by an institution responsible for the validation of non-formal and informal learning. They apply for the whole procedure a standard that is linked to the NQF and ACQF. The result is that the individual knows what he already achieves in terms of learning outcomes and what he should do in a vocational centre in order to get a formal diploma or certificate. In this route, a collaboration is set up with VET centres, who can provide this (tailor made) training.

3. This is where the TVET institutions play a big role. Units of learning outcomes are defined in a way that single units can be followed rather than a whole training course.

4. The whole process is supported by quality assurance measures. As several stakeholders and organization are involved it is very important to create mutual trust at the beginning and setting up quality assurance measures are a first step. Think about using accepted standards, using trained assessors, transparency in procedures etc.

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6. *Adapted by the author from the study report "validation as a tool for social inclusion", from the Erasmus+ project "Valorize NFIL across Europe" 2018-1-IT02-KA204-048012.*
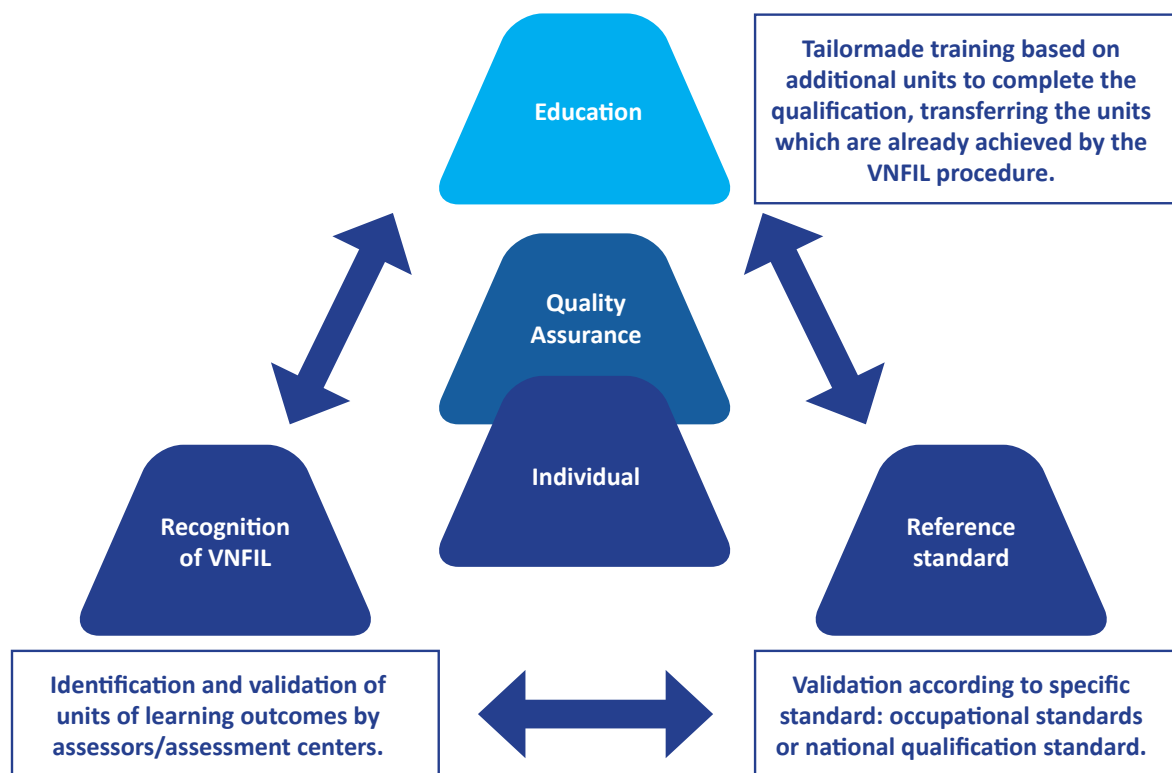
1.4.3 Validation of non-formal and informal learning in Cape Verde, Kenya and Mozambique

A brief report is published on the website of ACQF with examples of the systems on the validation of non-formal and informal learning as component of national qualification systems[7]. Ten examples from African countries are presented in this brief report. The report shows that in many African countries, the qualifications framework is welcoming to non-formal and informal learning, and regulatory-technical implementation mechanisms and capacities are in place or in development.

The table below provides a summary of Cape Verde, Kanya and Mozambique[8].

	Cape Verde	Kenya	Mozambique
Policy framework	The Law on validation of non-formal and informal learning of Cape Verde defines the policy and conceptual underpinnings of the promotion of validation of competences acquired in all contexts of learning.	The Kenyan National Qualifications Framework (KNQF) stipulate the regulations concerning all domains of the NQF, including the validation of non-formal and informal learning.	In 2021 Mozambique made progress in the establishment of the System of Recognition of Acquired Competences (SRCA). Law no.18/2018 on the national education system acknowledges the modality of extra-institutional training, that is, learning acquired outside of training institutions and schools.
Standards used	Link with the NQF, the National Catalogue of Qualifications (CNQ) and the individual register of qualifications and competences.	Standards defined in the Kenya National Qualifications Framework (KNQF)	Link with QNQP (NQF), through the mandatory use of the qualifications standards registered in the National Catalogue of Professional Qualifications (CNQP).
Target groups/ sectors	Individuals over 25 years of age with at least 5 years of professional/ employment experience.	2021: a pilot phase to test the new RPL Guidelines with focus on qualifications for occupation in three areas: textiles, car mechanics and welding. Candidates are mostly workers from the informal sector.	RCA pilot implementation started with up to 45 candidates to a qualification in one of the three occupations: electrician, plumber or welder.
Steps in the process	There are three phases: - Information and guidance, - Recognition and validation of competencies - Certification of competencies.	RPL practitioners support candidates on: - Information and guidance - Collecting evidence for portfolio - Skills and competencies Check - Qualified/ Issuance of Certificate	Evaluation, validation, and certification of acquired skills and competences.

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7. Overview 10 country cases ACQF

8. Summarized from the RPL overview by the authors

	Cape Verde	Kenya	Mozambique
Output	Professional qualification or part of it.	Certificate, nationally recognized and issued by a Qualifications Awarding Institution/	Full qualification or units thereof. The certificates are identical to those obtained as outcome of formal training.
Validation and accreditation	The Coordination Unit of the National Qualifications System (UC-SNQ) accredits the certifying entities, monitors and supervises them. Only accredited certifying entities can provide services of the RVCC system, in accordance with the legal requirements.	All certificates are issued by a Qualifications Awarding Institution (which must be accredited by the KNQ authority)	Validation processes are conducted only by RCA Centres, accredited by the regulatory body of VET. Such centres can be established TVET institutions, public and private enterprises and institutions. Accreditation is valid for a maximum of 5 years, and can be renewed upon request.

2. PART II IMPLEMENTING COMPETENCE BASED TRAINING (CBT)

2.1 Introduction

The past years (and still), there is more and more pressure for change in education and qualifications. There is a broad economic pressure, international pressure, demographic pressure, social and cultural pressure, pressures from learners and recruiters, technological change, commercial pressure and pressures from within qualifications systems itself.

Pressures for change that operate on qualifications are diverse and generally increasing in intensity. The economic pressure is strongest, especially in terms of VET qualifications but also for higher education qualifications. Pressures for the inclusion of individuals in education and training are evident as are pressures to maintain an objective basis for the standards on which qualifications are based.

A functioning qualification requires policies, funding, institutions, standards, procedures and administration. A necessary condition is that a range of stakeholder groups must work together in a systematic way.

Changes in qualifications should go hand in hand with changes in educational programmes and moreover, the way they are provided. If qualifications are taking into account the aspects as stated above and more focused on outcomes, this has consequences for the provision of training. In the next chapters, a step by step explanation is given for the main steps on how to develop and implement outcome based training.
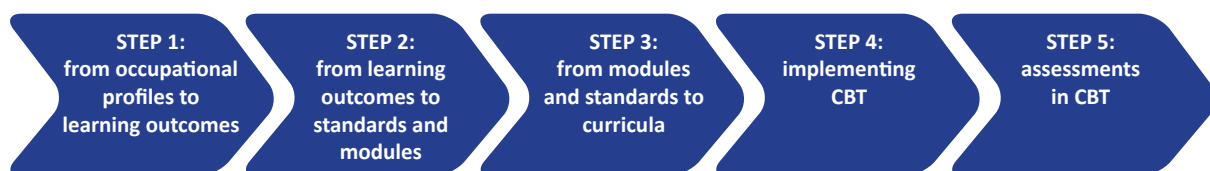
| STEP 1: from occupational profiles to learning outcomes | STEP 2: from learning outcomes to standards and modules | STEP 3: from modules and standards to curricula | STEP 4: implementing CBT | STEP 5: assessments in CBT |

Figure 7: the steps towards competence based training

In step 1, the process from occupations to occupational profiles to learning outcomes is described, including practical examples of how units of learning outcomes can look like. If qualifications with learning outcomes are exist, the CBT implementor can go directly to step 2, where the process towards curricula is described. Step 3 is dealing with practical issues around different pedagogical ways of competence based learning . Both theory as practical training. Finally, examples and guidelines for competence based assessments are provided in step 4.

2.2 STEP 1: from occupational profiles to learning outcomes

2.2.1 Clarification of terminology

In the next steps, the following terms will be used. These terms have their own origin and cannot be used inter-changeably. Based on the CEDEFOP and UNESCO UNEVOC definitions, the most used terms are clarified.

Relevant terminology

Terminology	The definition[9]	Additional remark:
Occupational profile	An OP summarizes essential characteristics required for a given job: the level of education and training required (and hence the complexity of the occupation); the field of education and training required; and other requirements in terms of knowledge, skills, competence, occupational interests, and work values.	An occupation is a set of jobs whose main tasks and duties are characterized by a high degree of similarity. An occupation is not the same as a job. An occupation can include more jobs. For example: a sales associate is an occupation, a sales associate in the retail is a job.
Qualifications	Means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards.	This means that a qualification is a result at the end of the learning process and developed from an educational point of view. A qualification can correspond to an occupation (group of similar jobs), a cluster of similar occupations or to a single job. This is often the result of labour market needs and the negotiation between stakeholders.
Learning outcomes	Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.	Learning outcomes are developed in close collaboration between educational and labour market representatives. They are the starting point for the development of standards (the explicit requirements for learning) and curricula.
Curriculum	The inventory of activities implemented to design, organise and plan an education or training action, including the definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers.	Often in CBT, the revision of curricula lacks behind. CBT implies not only defining standards based on the needs of industry, but implies the whole range of activities to make sure that the students are not only competent for the occupation, but also competent to behave in society and navigate on the labour market. These skills require other ways of training than traditional training methods.

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9   *See Glossary at the end of the handbook*

As can be concluded form the definitions above, the learning outcomes are the starting point for CBT implementa-tion. Training provision is no longer based on the input of syllabi and books, but on the needs of the labour market in the form of learning outcomes. What is required is the starting point. But how to get there? In the process of developing learning outcomes, the occupation is taken as the starting point. Sectors can take own responsibility for the development of occupational profiles, or they are developed by the initiative of national qualification authorities in the light of revision and development of national qualifications.

The choice whether an occupation is subject for development of learning outcomes is defined by the needs of in-dustry and education. The voice of industry is crucial in this step and often organized via focus groups, led by sector advisory (or skills) committees. In many countries, these committees or councils have been established to (co-)design occupational profiles and have an advisory role in educational standards derived from the occupational profiles.

For the most important core tasks are defined and validated by sector experts. Core tasks are often clusters of tasks that show similarity, or are a cluster of activities that are a process in itself. For example: for the occupation of a paint-er, "preparing the surface" can be a core task. It includes a set of activities that belong to the same working process.

Core tasks can often be divided into subtasks. This can be the level of concrete activities or there might be another level of sub tasks. This often depends on the complexity of the occupation. It is recommendable not to define too many core tasks in an occupation. Often around 6 core tasks are sufficient to describe the occupation.

Activities are described more in detail in learning outcomes in terms of competences, skills and knowledge. The learn-ing outcomes are the basis for the development of standards, which are the explicit requirements to state whether a core tasks is carried out in a sufficient way or not.
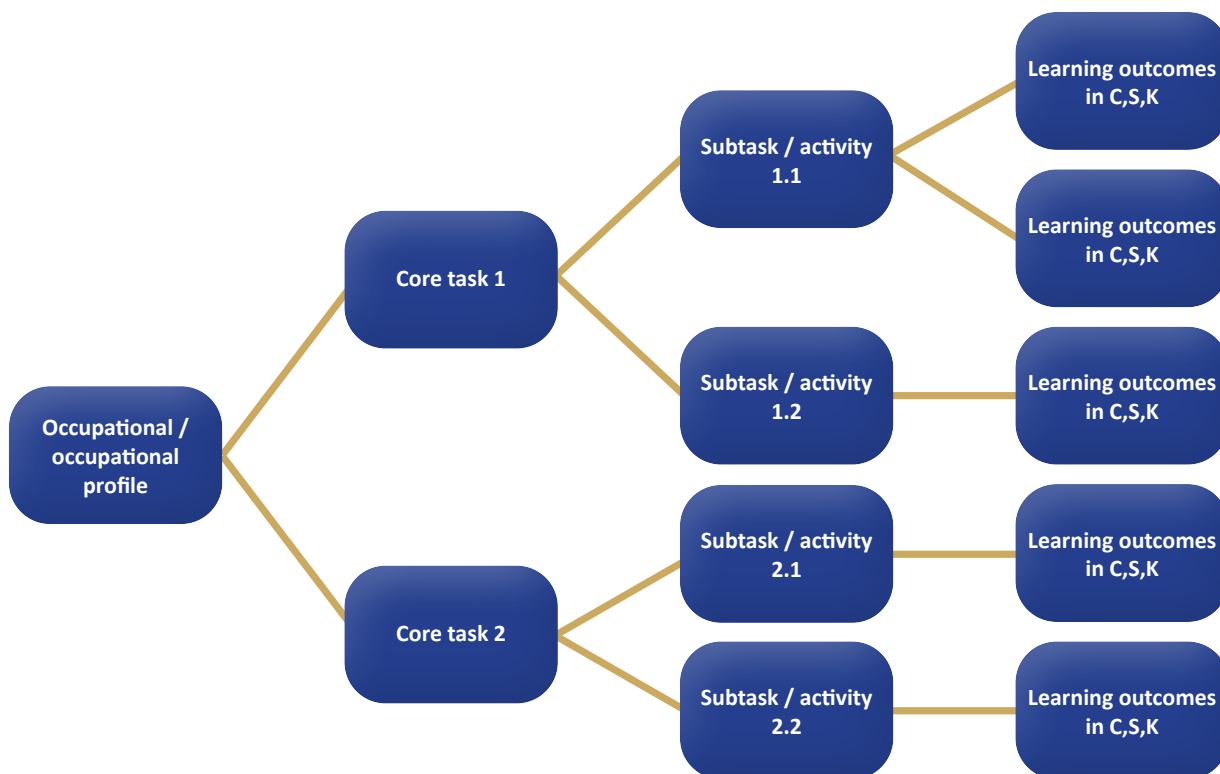

Figure 8: the process of developing learning outcomes.

What is the role of qualifications in this process?

Qualifications have different functions for both the world of education and the world of work. For industry qualifications are the entry for new employees. This is why every sector or branch prefer qualifications that are tuned to their specific requirements. However, education has also another function. For education, qualifications are meant to structure educational pathways and to prepare students to behave in society. This is often broader and more general than a job or even an occupation. This preventing that there would be too many and fragmented educational programmes[10]. This means also that there is often a tension between the functions and interests of education and labour market.

For this handbook it is important to bear in mind the functions of a qualification from the educational point of view. To summarize[11]:

- Qualification have a function in social reproduction, supporting demarcations in knowledge and skills, promoting particular explicit/implicit values. This implies also knowledge, skills and competences that go broader than technical skills that are required for a job. A qualification profile also includes skills for life (21st century skills) and prepares a student to act and behave in society and navigate on the labour market and make them less vulnerable if there are no vacancies for the occupation they studies for.
- Qualifications are ways to structuring pathways to employment and further learning, formalising progression routes and thus providing patterns of incentives for participation in education and training.
- Qualifications are shaping learning through affecting nature, structure and content of learning programmes.
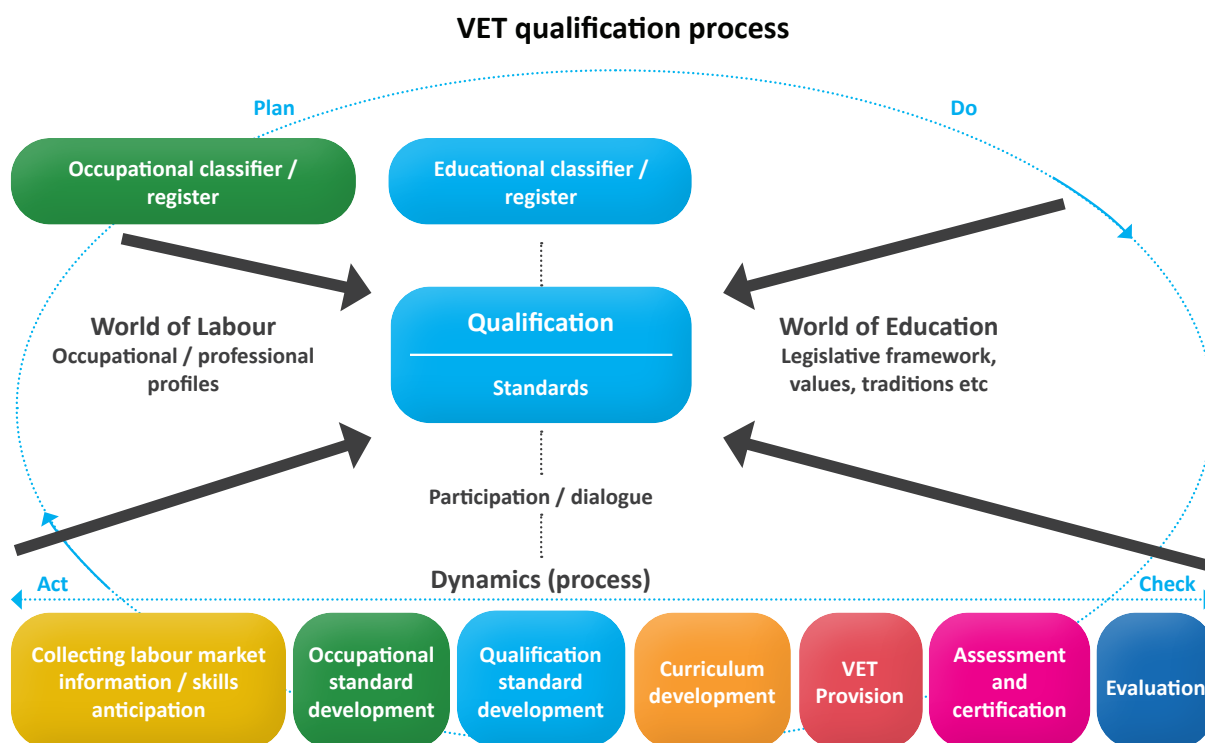
VET qualification process

Figure 9: the VET qualification process[12]

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10. *Qualification structure Dutch mbo*
11. *From ECVET workshops "ECVET for VET designers" Rome 2011*
12. *Developed by CINOP*

As can be seen from figure 9 and learned from above, a qualification brings together the world of labour and the world of work and is an intense collaboration and negotiation from both sides. A structured dialog between educational and sector representatives is crucial. As said earlier, not every occupation will lead to the development of a qualification. Labour market needs play a big role in this process. Qualifications that are too specific and focussed on occupations that are rather rare lead to the graduation of students that will find difficulties in finding a job.

In other words, the qualification process is a dynamic process with several phases and stakeholders and should be updated on a regular bases in order to make sure that graduated students have the right competences that are needed for the labour market and society.

What elements does a qualification[13] for CBT contain?:

What	Elaboration
Level	What proficiency level is the base for the qualification? (possibly use ACQF) African Continental Qualifications Framework — ACQF
Content of the qualification described in overarching learning outcomes	Formulate clear and measurable statements on qualification level. All the learning outcomes together form the base of the qualification.
Context and complexity	Based on the proficiency level. Describe what the context and complexity is of the activities that the student has to perform.

Note: The development of qualifications is beyond the scope of this handbook. If qualifications with units of learning outcomes are developed and validated, the CBT implementer can directly go to the development of curricula and/ or the implementation of CBT. If qualifications are not available yet, occupational profiles can be used as a starting point for the development and implementation of CBT. In the next chapters, a step by step explanation is provided on how to develop learning outcomes, units and curricula.

2.2.2 How to develop learning outcomes

Learning outcomes offer clear parameters on what a student needs to master. Learning outcomes are descriptions of specific actions students can undertake to demonstrate their progress. They can be formulated transdisciplinary (e.g., with more general skills) or discipline-specific, depending on the context. But they are always formulated in an active manner. All learning outcomes are included in the curriculum (or multiple learning pathways) and often clustered in units (modules).

The learning outcomes based approach in CBT requires another way of looking at the acquisition of competences, skills and knowledge. CBT is a performance-based and not a time-based of location-based educational approach. Thus, a person is not assessed based on how much time spend mastering a certain subject or skill, nor where the competences are acquired, but based on performance and outcomes. This implies that there are more ways to achieve learning outcomes. This requires clear instructions and guidelines for teachers and trainers.

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13. Sometimes occupational standards (national level) already contain these elements. Check whether it is necessary to formulate a qualification, or you can use the occupational standards for developing your curriculum.

One of the main characteristics of CBT is a **student-centred approach**, it is important to give the student the freedom to make their own decisions. Learning outcomes leave room for students and educators for an own interpretation of the 'how', as it only formulates the **'what'**.

What are the basic principles to take into account when developing learning outcomes?

• Start with the competences and not the knowledge. In formulating learning outcomes, the student should always be put at the centre. You will also notice that it is easier to formulate knowledge and skills when the competences are defined first.

• Not all learning can be defined in learning outcomes, some learning is unintentional and cannot be predicted. However, this unintentional learning can be very relevant to define whether a person is competent or not. Therefore, assessments method can be put in place to capture ways of unintentional learning.

• In formulating learning outcomes, one should find the balance between providing clarity on what has to be learned and still leaving room for own interpretations of the 'how'. This implies that often learning outcomes can be achieved in different ways and contexts. It is the responsibility of the training provider to provide these different contexts, depending on the needs of the student and the type of activities.

• Learning outcomes should always be defined within the broader context. Otherwise there is a risk that CBT is training for a specific job rather than for an occupation. This is the criticism of the dual system where large parts of the training programmes take place via apprenticeship programmes, where a students stays in one company for a long time.

• Avoid copying learning outcomes. Learning outcomes need a context. Even if learning outcomes have a broader scope, they have to be seen and implemented in the context of the activities.

• Learning outcomes can have different purposes, decide the level of detail and complexity accordingly.

• Make sure the learning outcomes are measurable. The next paragraph provides hands on tips on how to write learning outcomes with concrete examples.
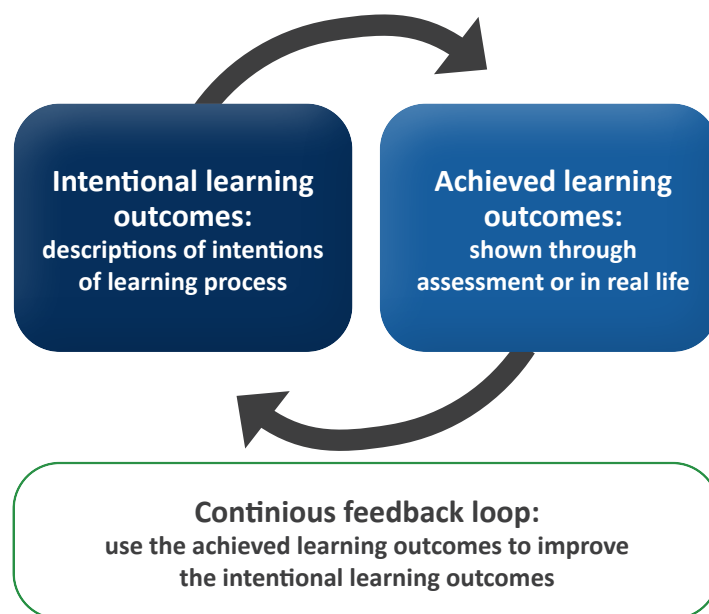

Figure 10: "Formulating intentional learning outcomes is a continuous process, where feedback from the achieved learning outcomes should be central".

The figure above gives an idea of a quality loop in the process of development of learning outcomes. In the learning outcomes, all intentional learning is captured. However, it is crucial to foresee a feedback on the achieved learning outcomes versus the intentional learning outcomes. Are there learning outcomes that cannot be achieved in an educational setting? Are there unintentional learning outcomes that have to be included in the learning outcomes description? This is an element that has to be taken into account when revising qualifications and curricula.

2.2.3   Writing and structuring learning outcomes

The tuning model for learning outcomes offers a structure in formulating learning outcomes. It is a European methodology that is used for developing, implementing and evaluating study programs. It puts the student at the centre, which fits the CBT approach.

The model should be seen as a check whether the learning outcomes contain all the relevant information to build education upon. The tuning model is not meant to make a well-written sentence, it is a check whether all components are present. The context can be formulated separately and can consider more learning outcomes at once.

The tuning model structure:

Active verb	What kind of behaviour/activity do you want to see? (use taxonomies and descriptors)`
Type	To what overarching competence does it contribute?
Subject	What is the theme/knowledge/skill-component it is about?
Standard	What are models/theories/standards that should be used in executing the activity?
Context	In what situation should the behaviour be shown/activity be executed?

Example of a learning outcome:
"Is able to collaborate with other waiters and the kitchen staff to ensure a smooth process conform the rules and regulations in the restaurant"

And when checking if the elements are present:
"Is able to collaborate with other waiters and the kitchen staff to ensure a smooth process conform the rules and regulations in the restaurant"

The active verb is in the beginning of the learning outcome and gives direction of what has to be done in terms of action and deliverable and thus the type of assessment.

The list of action verbs (see figure 11) can help in describing the knowledge, skills and competences at the right level in the occupational profile and in the curricula. The action verbs can also be used to give an indication of the complexity.

For example, for a level 2 qualification in "tailoring/ garments (fashion)", a learning outcome can be described using the action verb "is able to **follow** basic patterns", whereas for a level 4 qualification, the learning outcomes will be described in terms of "is able to **adjust and adapt** patterns". Action verbs play a crucial role in giving direction in what has to be learned, the complexity and the way the learning outcomes will be assessed.

However, the verbs are often not the only indication for the complexity. This is the combination of the action verb with the context, or subject. Actions verbs like "analyse", "assess", "design", "evaluate" imply already a high level of complexity. There are also examples that show that it is <u>not</u> always the action verb that indicates the complexity, but that it is the <u>combination of the action verb with the context</u>. This means that these action verbs can be used for several levels and that the contexts make the difference in complexity.

An example for the same fashion sector below shows, that with the same action verb, the subject or context gives is leading for the complexity of the learning outcome:

Example learning outcome

Develops **basic patterns** (level 3)	Develops **bulk production patterns** (level 4)
Coordinates **own activities** (level 3)	Coordinates **the whole range of tasks** (level 4-5)
Understands **how to use the machine** (level 2)	Understands **the wishes of the customer** (level 3)
Produces **parts** of garments (level 2)	Produces **whole** garments (level 3)

Level	Action verbs	Examples
2	Define	Defines the right stich for the fabric
	Reproduce	Reproduces parts of garments
	Align	Aligns the working method with the safety regulations
	Comply	Complies with procedures of the company
	Uses	Uses standard stiches
	Follow	Follows basic patterns
	Check	Checks the correct position of the needle
	Prepare	Prepares the machine for sewing
	Understand	Understands how to use the machine
3	Select	Select the right fabric
	Discuss	Discusses the progress with the supervisor
	Apply	Applies the right machine for different fabrics
	Demonstrate	Demonstrates different s options for the customer
	Recognize	Recognizes different sizes of models
	Identify	Identifies the right fabric for the model
	Interprets	Interprets the demands of the fabric
	Explain (in own words)	Explains the choice of he fabric
	Action Verbs	Examples
	Produce	Produces a complete garment
	Adjust / adapt / modify	Adjusts / adapts modifies patterns
4	Examine	Examines the feasibility of the models
	Determine	Determine how to avoid errors

Level	Action verbs	Examples
	Construct	Constructs working patterns
	Formulate	Formulates solutions
	Evaluate	Evaluates the parts produced by others
	Interpret	Interprets costs calculations
	Develop	Develops patterns for special occasions
	Design	Design patterns
	Plan	Plans the production process
	Coordinate	Coordinates the whole range of tasks
	Assess	Assessess the impact of errors
	Analyse	Analyses production workflows

Figure 11: Action verbs to describe learning outcomes[14]

2.2.4 Using descriptors and standards in developing learning outcomes

Worldwide, many descriptors and standards are developed that can be very helpful when developing learning out-comes. It is clear that a more uniform way of describing learning outcomes improves the transparency, comparability and transportability of peoples' qualifications and is important in the perspective of lifelong learning.

For job seekers these descriptors can be used to document and describe their knowledge/skills/competences to match better with jobs and vacancies on the labour market in a more accurate way. Education and training institutions can use descriptors as a reference to describe learning outcomes of their qualifications, making qualifications more transparent and tuned to the needs of the labour market. Employers van use descriptors to describe the skills and competences that they expect from employees more precisely.

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14. *Example from fashion sector from guidelines "NQF referencing in Palestine", van den Bosch en Götemann, April 2016.*

An overview of relevant descriptors is mentioned below

Descriptions from:	What is it?	How to use them in defining learning outcomes?
ACQF	African Continental Qualifications Framework A substantial number of African Union member states is developing, consolidating and implementing national qualification frameworks (NQF's)	You can use the ACQF descriptors to determine the level of your learning outcomes for different domains of learning. How to use the ACQF standards descriptors? 1. Check the level descriptors of ACQF (visit this link, page 13) and decide what level is applicable. 2. See the descriptions under knowledge, skills and autonomy and responsibility. 3. Check whether the level in your learning outcome is correct. Can you expect the activity from the student, regarding the level the qualification is on?
ESCO[15]	European framework for European Skills, Competences and Occupations It offers standardization in skills which can be used by employers, educational developers and policy makers.	You can use ESCO as a guideline to formulate skills that are the base of your CBT curriculum. How to use ESCO? 1. Search with the title of the qualification (e.g.: hairdresser). You will get a list with essential competences and skills. 2. Look for skills that fit the relevant theme's (e.g., cutting techniques). 3. Use the descriptions as base for your learning outcome 4. Check the input with the structure of the Tuning model: do all the elements come back?
EQF[16]	European Qualifications Framework The EQF is an eight level learning outcomes-based framework for all types of qualifications that serves as a translation tool between different national qualifications frameworks.	This framework helps improve transparency, comparability and portability of people's qualifications and makes it possible to compare qualifications from different countries and institutions. The descriptors of the EQF can help to make sure that learning outcomes are formulated on the right level and complexity.

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15. *Homepage (europa.eu)*
16. *The European Qualifications Framework (EQF) | Europass*

2.2.5   Using taxonomies in developing learning outcomes

A taxonomy or taxonomical classification is a schema of classification, mostly in a hierarchy, to organise groups or types[17]. There are taxonomies that specifically focus on learning and cognitive load.

These taxonomies provide information on the level of the learning activity, which helps you in formulating learning outcomes and consequently help you in deciding upon suitable learning activities and assessment. Below the taxonomies of **Romiszowski** and **Bloom** are explained. You can specifically use these taxonomies also to determine the active verb (tuning model) of the learning outcome.

What are taxonomies and how to use them in formulating learning outcomes:

Taxonomies

Romiszowski	Bloom
Taxonomy that distinguishes between knowledge and skills Use for lower-level qualification that include practical skills	Taxonomy that distinguishes six cognitive processes, thus focus on cognitive domain Use for higher level qualifications
Knowledge **Factual knowledge:** recognizing and remembering of facts and action prescription **Active verbs:** recognize, repeat, list, name, define, point out **Conceptual knowledge:** understanding principles of strategies actions **Active verbs:** Explain, interpret, classify, compare, put in order, combine, distinguish, describe, give examples	The levels of Bloom are hierarchical, and each level presupposes that you master all the levels below (e.g., you cannot 'apply' if you do not 'understand' the material). Bloom distinguishes between the following levels (from low to high): - Remember - Understand - Apply - Analyse - Evaluate - Create
Skills **Reproductive skills:** routines and vocational activities based on standard procedures **Active verbs:** Demonstrate, construct, apply (in concrete situations) **Productive skills:** appeals to the creativity and problem-solving skills **Active verbs:** Model, design, plan, analyze, argue, discuss	**For more information see:** Bloom's Taxonomy | Center for Teaching | Vanderbilt University **For examples of active verbs see:** Bloom's Taxonomy Verb Chart | Teaching Innovation and Pedagogical Support

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17. Taxonomy Definition & Meaning - Merriam-Webster

2.2.6   A full example: from occupational profile to units of learning outcomes

Below an example for the occupation hospitality waiter. The example shows the steps that are described earlier in a concrete manner. From occupational profile to core tasks and activities and to units of learning outcomes.

Occupational description/ profile[18]

Sector Occupation	Hospitality Waiter
Description of the occupation	The waiter is responsible for the readiness, layout and general hygiene of the customers' dining area. He/she welcomes and seats customers, provides information and advices about the menu according the commercial policy of the establishment, takes orders and serves food and drinks, and provides counter/ takeaway services. A waiter may also be responsible for making reservations, promoting local products and attractions to customers, carving meat, preparing the customers' bills and handling payments. He ensures the smooth running between the food production in the kitchen and the service in the dining area
Professional context	A waiter works in the tourism sector in hotels, restaurants, clubs, taverns and similar establishments. These range from small businesses to very large multinational hotel chains including collective restoration
Autonomy and responsibility	The waiter is responsible to a head waiter, maître d'hôtel or restaurant manager and usually- depending on the size of the establishment- works as a member of a team involving other waiting and kitchen staff.
Professional attitude	The waiter must have a very customer-focused attitude and excellent 'people skills'. They must be well-presented, have high standards of personal hygiene, communicate well with customers and colleagues (both in the dining area as with the kitchen staff). The job requires high levels of stamina and a willingness to work on a flexible basis, often in the evenings and at weekends/holidays. All tasks and duties should be implemented hygienically, sagely, gently and in a courteous manner.
Trends and innovation	- Intercultural society might lead to other wishes and preferences - Ecological trends - Digital trends in taking orders (via handheld) and reservations - Special food trends
Rules and regulations	- Hygienic rules according to the HACCP - Ethical rules conform the restaurant formula
Professional challenges	- Dealing with complaints about the food and drinks - Dealing with aggressive and/or drunk customers - Dealing with special diet/preferences - Taking care of "special guests" - Dealing with customers with 'cash problems' - Dealing with large groups - Dealing with "crowded" moments (a lot of people entering at the same time)
Level	EQF Level 3

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18. Full example for hospitality waiter. From workshop on "how to write learning outcomes, provided by van den Bosch for the National Qualifications Authority in Slovenia, 2014.

Defining the core activities of the occupation

Core activities	Description with observable result:
A: Preparation, Opening and Closing procedures	The waiter makes sure that the dining room is prepared according to the reservations and the etiquette and hygienic rules. The dining room will be maintained by the waiter during and after the service.
B: Taking orders	The waiter receives the customers and takes the orders. He/she provides information on the food and drinks, introduces suggestions, makes recommendations and takes 'up selling' in mind.
C: Serving orders	The waiter contributes to a smooth serving process and serves foods and drinks according to the orders and satisfaction of the customers, including take away and counter services. He/she prepares and maintains the buffet display and prepares food at the table where applicable.
D: Billing	The waiter prepares the bill and provides explanation where necessary. He/she is responsible for a good final impression of the restaurant and service by the customer before leaving.

(Sub)tasks, related to the core activities

Core activities and subtasks	Description with observable result:
A: Preparation, Opening and Closing procedures (Sub)tasks: A1: Cleaning and maintenance of the restaurant equipment A2: Preparing and setting up de dining area A3: Maintaining and cleaning the restaurant area A4: Storing goods and equipment	The waiter makes sure that the dining room is prepared according to the reservations and the etiquette and hygienic rules. The dining room will be maintained by the waiter during and after the service.
B: Taking orders (Sub)tasks: B1: Welcoming and receiving customers B2: Providing information about the menu B3: Making recommendations and up selling B4: Taking the orders	The waiter receives the customers and takes the orders. He/she provides information on the food and drinks, introduces suggestions, makes recommendations and takes 'up selling' in mind.
C: Serving orders (Sub)tasks: C1: Serving food and beverages C2: Preparing and maintaining a buffet display C3: Providing counter/ takeaway service	The waiter contributes to a smooth serving process and serves foods and drinks according to the orders and satisfaction of the customers, including take away and counter services. He/she prepares and maintains the buffet display and prepares food at the table where applicable.
D: Billing (Sub)tasks: D1: Preparation of the note and check chasing	The waiter prepares the bill and provides explanation where necessary. He/she is responsible for a good final impression of the restaurant and service by the customer before leaving.

Defining Learning outcomes (K,S,C) related to the core activities and tasks

Core activities and task	Competences	Skills	Knowledge
A: Preparation, Opening and Closing procedures (Sub)tasks: A1: Cleaning and maintenance of the restaurant equipment A2: Preparing and setting up de dining area A3: Maintaining and cleaning the restaurant area A4: Storing goods and equipment	Works under supervision of the maître/ dining area manager; • Is able to collaborates with other waiters and the kitchen staff to ensure a smooth process in the restaurant; • Is able to apply to reflect the norms and standards in the presentation of the tables and the dining room; • Is able to act quickly and flexible in case of crowded moments in a way that customers don't have to wait;	Identifies restaurant equipment, furniture, cutlery and chinaware for each service; • Cleans and polishes restaurant equipment, applying the correct products and methods; • Uses, stores and stocks restaurant equipment; • Prepares service tables and sideboards: selects, folds and lays tablecloths and serviettes, equipping sideboards, setting up the mise-en-place; • Carries and arranges cutlery; • Arranges items on the tables	**Procedures and regulations** • Safety and hygiene procedures and standards • Standards of hygiene and safety • Opening and closing procedures • Table cleaning procedures **Cleaning** • Methods and products for cleaning • Equipment, furniture, cutlery and chinaware • Polishing cutlery, glassware and crockery **Mis-en-Place / Set up** • Understanding of the table plan • Table service tools, utensils and equipment
B: Taking orders (Sub)tasks: B1: Welcoming and receiving customers B2: Providing information about the menu B3: Making recommendations and up selling B4: Taking the orders	Works under supervision of the maître/ dining area manager; • Is able to welcome guests in an appropriate way and adapts style where appropriate (frequent visitors, special guests, large groups etc.); • Is able to communicate in an effective way with the kitchen in order to make sure that the orders are prepared correctly; • Is able to communicate with the customers in a polite and appropriate way during the entire service including interpreting signs and non verbal communication of the customers; • Is able to handle in a flexible and appropriate way with difficult questions/ complaints about the food, drinks and special wishes; • Is able to contribute to a positive and loyal atmosphere in the restaurant;	• Directs and seats the guest; • Communicates politely with the guests; • Processes guest order without delay or mistakes; • Keeps the work area tidy and hygienic; • Processes accurately multiple orders; • Presents the menu and recommending special items by using sales techniques; • Provides accurate information on products; • Takes the order and passes it to the bar or kitchen; • Promotes and sells products and services	**Sales** • Order taking techniques • Personal selling techniques • Principles of up-selling and merchandising • Packages, offers and promotions **Customer Relations** • Hospitality attitude and behaviour • Identify types of guest needs, wishes and requirements • Different guest styles • Complaint techniques • Appropriate complementary salutation **Food and beverages** • Knows the entire menu and suggestions of the day • Knows about special ingredients • Information about wine and food • Origin of food and beverages **Mis-en-place** • Establishment facility and layout • Understanding of the table plan • Table service tools, utensils and equipment • Standard sequence of meal service at table

Core activities and task	Competences	Skills	Knowledge
C: Serving orders (Sub)tasks: C1: Serving food and beverages C2: Preparing and maintaining a buffet display C3: Providing counter/ takeaway service	• Works under supervision of the maître/ dining area manager; • Is able to contribute to a positive and loyal atmosphere in the restaurant; • Is able to communicate with the customers in a polite and appropriate way during the entire service including interpreting signs and non verbal communication of the customers; • Is able to handle in a flexible and appropriate way with difficult questions/ complaints about the food, drinks and special wishes; • Is able to provide a smooth and correct service, with no delays and mistakes in serving the orders • Is able to communicate in an effective way with the kitchen during the service to fulfil the customers preferences; • Is able to act flexible and adjust priorities in case of crowded moments;	• Arranges the tables according to the guests needs • Picks up the beverage and food order from the bar/ kitchen • Serves food and beverages • Monitors the course of the meal thoroughly and provides supplements request • Keeps and serves the food and beverage at the proper temperature • Keeps appropriate condiments and accompaniments • Keeps the work area tidy and hygienic • Processes accurately multiple orders • Answers questions about specifications of food and beverage • Providing accurate information on products • Maintains the buffet service tools, utensils, equipment and decorative items • Stores and displays food and beverage items • Replenishes food and beverage items • Portions food and arranges it neatly • Prepares food at the table	**Procedures and regulations** • Relevant safety and hygiene procedures • Standards of hygiene and safety **Customer Relation** • Hospitality attitude and behaviour • Identify types of guest needs, wants and requirements • Interpreting guest styles and building effective communication • With guests • Complaint techniques • Serving techniques **Food and beverages** • Types of (non-)alcohol drinks • Temperature for keeping and serving food and beverages • Information about wine products and preparation, taste **Mis-en-place** • Table service tools, utensils and equipment • Standard sequence of meal service at table • Styles of laying out and dressing • Types of decorative food and non-food

Core activities and task	Competences	Skills	Knowledge
D: Billing (Sub)tasks: D1: Preparation of the note and check chasing	• Works under supervision of the maître/ dining area manager; • Is able to adopt behaviour to make adjustments to bill when necessary as well as payment problems card authorization declined; • Is able to carry out the billing in an efficient, smooth and honest manner in line with legal requirements and control procedures; • Is able to provide the customer a final good impression of the restaurant and the service and contributes to customer relations;	• Collects/prepares and presents the bill • Explains bill discrepancies • Handles with different payment methods • Uses price lists, cash register and calculator • Corrects cash errors/making adjustments to bill when necessary • Tracking cash reports in right way	**Procedures and regulations** • Billing operating procedures **Check chasing** • Manual/software program • Types of guest accounts/payments

2.3 STEP 2: From learning outcomes to standards and modules

Following the backwards loop in quality assurance, standards have to be developed. Explicit statements about expected capabilities to be met as an expression of accomplishment19. They give direction to the way learning outcomes have to assessed and to be trained. In CBT the outcomes are the starting point and therefore it is recommended to start with the definition of the standards before thinking about the curricula and pedagogical methods.

Let's start with the creation of units or modules.

Taking the model of developing learning outcomes, it is possible to define the entries for modules, activities and standards. In most cases, the set of learning outcomes is too large and need to be clustered in units or modules.

In the figure below we define modules, learning activities and standards in the following way:

• The entry level for units is often the level of the core tasks.

• Learning activities can be based on the sub tasks/ activities.

• Learning outcomes form the basis for the development of assessment standards.

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19. *Unesco-unevoc glossary*
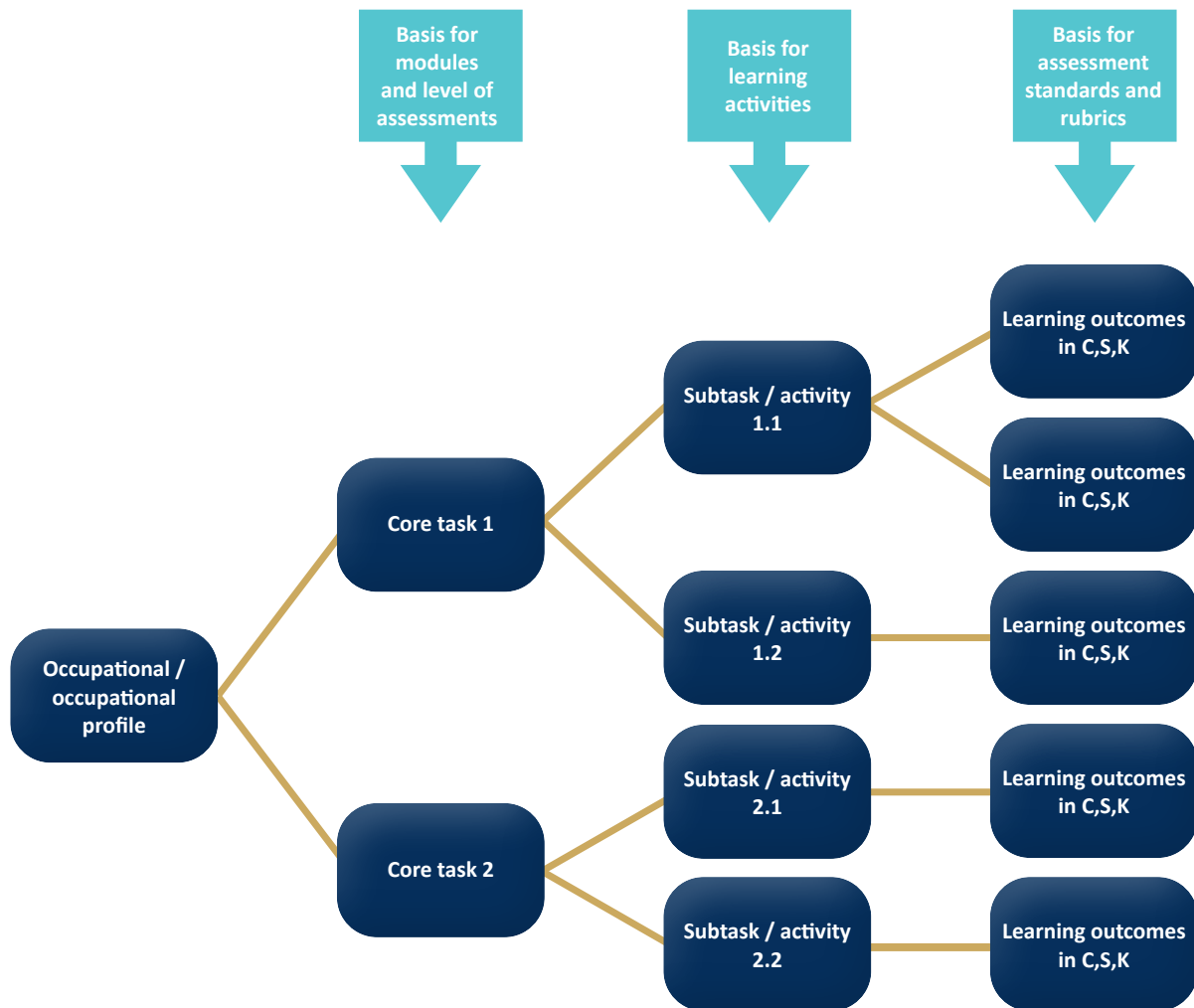
Figure 12 : The process of defining curricula.

2.3.1   Using units of learning outcomes as the basis for learning modules

A unit is a component of a qualification, consisting of a coherent set of knowledge, skills and competence that can be assessed and validated Identify what learners can learn. Units include the learning outcomes that the learner is expected to achieve for that specific core task.

Depending on the existing regulations, units may be common to several qualifications or specific to one particular qualification.

How to create units?

Above, it is mentioned that modules often follow the structure of the core tasks. But here are different options as well. Core tasks can be defined in different ways and this is a process that has to be done carefully by experts from both the world of education and labour market.

For example, there are different criteria according to which learning outcomes can be grouped:

Criteria for grouping units:	Example:
The fact that the learning outcomes relate to the same set of occupational activities/ tasks.	• Grilling meat • Grilling fish
The fact that they are related to the same product or production technique.	• Stitching different types of fabrics by hand • Stitching different types of fabric with the machine
They can also be grouped according to the stages in the production process or process of performing a service.	• Preparing surfaces for painting • Painting different surfaces

It is important to take into account what is feasible to achieve. In other words: how small or large should the unit be? Both approaches have advantages and disadvantages and depend largely on the purpose.

Advantages of small units	Disadvantages of small units
Units can be obtained in a rather short period of learning and therefore are particularly suitable for geographical mobility or recognition of prior learning in the framework of lifelong learning and tailor made training.	Because of the higher number of units is a qualification, this approach implies putting in place a large number of assessments.
The units can be suitable for adult learners who combine learning and employment or learners who are at risk of dropping out from longer programmes.	Fragmentation of qualifications and of assessments may take it more difficult to identify whether the learner can combine all the knowledge, skills and competences in a more complex manner.

Advantages of large units	Disadvantages of large units
Assessment of a larger units enables learners to demonstrate their capacity to combine knowledge skills and competences in view of delivering a more complex service or product (holistic approach).	More substantial amount of learning activities is required to prepare the unit. Hence it may be difficult to achieve a full unit in the context of (for example) a short transnational mobility period for example.
The number of (summative) assessments is small.	The duration of learning activities preparing the unit may be substantial for learners outside VET to be able to benefit from accumulation and accreditation of prior learning.

If we take the example of paragraph 2.2.6, the waiter in a hospitality establishment, we can define the following units. The units are based on the core tasks. Here the criterium for defining the unit is based on a group of activities related to the same working process. The activities of each core tasks are described as learning activities. Assessment takes place at the level of the module and not on the level of the activities, otherwise the link and overarching context is missing. The learning outcomes that are defined are used as a starting point for the defining assessment standards.

Defining modules, based on the tasks and subtasks

Unit or module	(Learning) activities
A: Preparation, Opening and Closing procedures	A1: Cleaning and maintenance of the restaurant equipment A2: Preparing and setting up de dining area A3: Maintaining and cleaning the restaurant area A4: Storing goods and equipment
B: Taking orders	B1: Welcoming and receiving customers B2: Providing information about the menu B3: Making recommendations and up-selling B4: Taking the orders
C: Serving orders	C1: Serving food and beverages C2: Preparing and maintaining a buffet display C3: Providing counter/ takeaway service
D: Billing	D1: Preparation of the note and check chasing

Figure 11: Modules and learning activities of a waiter in a hospitality establishment .

Competence based learning requires competence based assessments. But what do we exactly mean? A competence-Based Assessment (CBA) is the measurement of student's competence against a standard of performance. The focus in these standards are the learning outcomes to make sure that the graduated student meet the needs of the labour market.

The whole idea of CBT and CBA is, that the way learning outcomes are defined, shapes the way they will be implemented and assessed. If the learning outcomes require a specific action or output, this is leading for the type of assessment. For example, if a learning outcome requires that a student has to be able to have a sales talk, the assessment has to be focused on demonstration in a practical real life situation and not in a theoretical assessment. This requires also a shift in thinking in assessments. We have seen in the previous chapter that CBT implies a shift from grading and exams towards reflection and feedback.

2.3.2 From learning outcomes to assessment standards

Assessment standards are directly related to the learning outcomes. They make explicit what has to be done by the student in order to be successful. Standards are always defined in close collaboration between representatives of industry and education. Here again is there a discussion and negotiation on how detailed standards have to be. Too detailed standards give a very clear picture of the requirements, but often not realistic and applicable for all contexts and situations. Besides, too detailed assessments give the impression that everything is measurable and visible. Standards that are too open leave to much space for the interpretation of the assessor and will lead to assessments that are not objective and valid.

Assessment standards should be written in a way that they are observable and measurable in many different contexts. They should provide sufficient support for the assessor to check whether the student is competent, but should also leave enough space for different contexts. This is especially important in context where observation in practical situations is the reality.

Some examples of standards related to learning outcomes:

Learning outcomes	Assessment standards
Is able to have a sales talk with a customer. (Qualification: sales associate)	• Makes sure the wishes and needs of the customer are clear (via questions and showing examples); • Informs about the assortment en does a proposal that fits with the wishes of the customer; • Informs about delivery, payments and availability and reductions if applicable; • If possible, proposes alternative options.
Is able to keep up with the latest innovations in the sector and branch of his occupation (Minor: dealing with innovations)	• Makes an inventory of possible ways to keep up to date about the developments and innovation that are relevant in the sector/ branch (magazines, fairs, presentations etc); • He makes a relevant and feasible selection of activities and elaborates them; • Makes an inventory of the most relevant innovations for his learning company.
Is able to coach employees on the working floor. (Qualification: shop manager)	• Observes employees and defines who needs extra support; • Supports employees to perform in an optimal way; • Observes employees and defines who needs extra support and proposes approaches for employees who need extra support; • Supports employees to perform in an optimal way (giving compliments, being an example, leaves room for own interpretation); • Supports employees to develop themselves; • Provides feedback to employees on a regular basis;

2.4 STEP 3: from modules to curricula

2.4.1   What elements should a curriculum for CBT contain?

A curriculum is an educational path and describes the learning process in a much more comprehensive and complex fashion than is possible with plans of learning content or learning material. These days, curriculum development is oriented towards the learner - the student/trainee and his learning process rather than towards the content of learning.
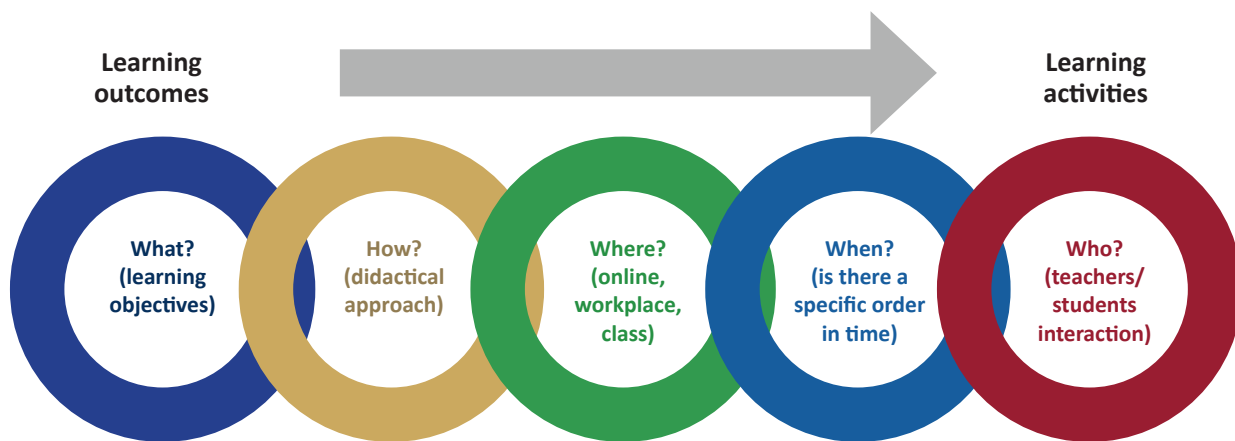

Figure 12 : the process of developing learning activities in a curriculum.

A curriculum should contain at least the following elements:

What	Elaboration
Eligibility and prerequisites	Are there requirements for the student to enter the course? Both in terms of specific knowledge, as in terms of qualifications.
Trainer information	What is expected from the teacher and trainer in terms of requirements, experience and expertise etc.
Structure and sequence	Is there a specific order of the modules. If they are grouped following the criterium of work processes, one modules follows the other. If modules are grouped following the structure of similar tasks, the order might not be crucial (grilling fish, grilling meat).
Learning activities	Describe which learning activities are possible and feasible. Describe for which activities external stakeholders (from the labour market) are involved and in what way. For example, a lot of learning activities in TVET require a practical learning environment. Who is taking care of that? Is there a practical environment in the school? Is there an opportunity for internships in work placement companies?
Didactical approach	What are possible didactical approaches for the learning activities? What is the best way to achieve the learning outcomes. Are there many options that the school or company can provide? Is a specific context essential?
Graduation requirements	How many modules should be completed? Are there strict criteria for achieving the qualification? This largely depend on the type of qualifications. Where for a sales associate it might be possible to achieve the qualification with a threshold of 75%, this might be higher for an associate in the medical world.

2.4.2   Course template for teachers and trainers

Course templates can support teachers and trainers in what is expected from them in CBT. It gives an overview of everything that is necessary to prepare and implement the courses.

Name of the module	Taking orders in a restaurant
Explanation	The waiter receives the customers and takes the orders. He/she provides information on the food and drinks, introduces suggestions, makes recommendations and takes 'up selling' in mind. The waiter is co-responsible for a good experience of the customer in the restaurant.
Learning activities	• Welcoming and receiving customers • Providing information about the menu • Making recommendations and up-selling
Learning outcomes	(Refer to document with learning outcomes)

Name of the module	Taking orders in a restaurant
Didactical approach	Learning by doing. • Give the student as much as possible opportunities to experiences different situations and dilemma's. Instructions can be given during the practical training. Feedback afterwards is essential. • Invite guest speakers form restaurants to tell about their own experiences and to give insight in different dilemma's and contexts; • Company visits and observations by students in real life contexts (restaurants, bar, large, small);
Learning environment	Practical setting is essential. Can be in the school environment in a simulation setting.
Learning material and required knowledge	In particular, knowledge on beverages and dishes is required. The waiter also knows the menu of the restaurant/ practical environment where the training takes place.
Allocated time	450 hours
Interaction and supervision	If practice takes place in a work placement company, a supervisor of the company is present to coach and train the students. In the school environment, the teacher is responsible.
Equipment	Uniform, menu. The students give a representative impression.
Results to deliver	The student is able to show in a practical setting that he/ she is able to take orders in a restaurant.
Type of assessment	Observation in practical setting, based on assessment criteria.

For the entire course it is recommended to make an overview of the modules and how they are related to each other in terms of practical and theoretical training. In CBT, training should be independent from time and place. However formal TVET programmes normally have set requirements for a certain amount of hours spent in total and/ or in practical training (work placements).

In that case, an example might be:

Qualification: water in a hospitality establishment			
Modules:	Hours Practice	Hours Theory	Total
A: Preparation, Opening and Closing procedures	250	100	350
B: Taking orders	300	100	400
C: Serving orders	400	100	500
D: Billing	250	100	350
Total in hours	1200	400	1600
Total in %	75%	25%	100%

2.5 STEP 4: Providing CBT

2.5.1   Learning is based on the principles of social constructivism

Curriculum development is based on "social constructivism". The assumption in social constructivism is that learning is an active process of the acquisition of knowledge and the construction of knowledge, where sharing knowledge with others is a focus point.

In practice, this mean the following principles:

1 . **Learning together, based on interaction with each other:** learning is a social process. Interaction should therefore be a main element in the development of curricula and in the provision of training.

2 . **Learning by doing:** learning in own daily practical contexts is one of the most effective ways to achieve new knowledge, skills and competences. This is why hybrid learning methods are so valuable. They are models in which theory, working in own daily practice and reflection are integrated with each other.

3 . **Learning on the basis of needs and learning style:** based on research, learning based on own needs is the most effective. Especially when the way in which the content is provided, is tuned to the learning style of students.

With these principles in mind, it is possible to invent creative ways of training provision that are effective and efficient and within reach of each educational institute.

2.5.2   Holistic versus narrow approach of training

The CBT approach allows individuals to show their competences in a holistic way. The holistic approach in fact is a way of nurturing students' intellectual, physical, social, creative and emotional capacities. It is a way of preparing students for real life and not just for an exam as traditional educational methods often do. Students are prepared with the skills and understanding to interact and navigate the uncertainties in real life. This holistic approach is often applied in apprenticeship systems, where students have a working contract with a work placement company and learn the competences, skills and knowledge on the job.

This seems an important underlying principle of CBT. However, there are critical sounds about the holistic approach. Such an approach can lead to assessments by a supervisor stated "I know and see when someone is competent", rather than an assessment is based on explicit standards. In addition, especially when students are doing long term apprenticeships in one single company, this can lead to training for a specific job rather than an occupation. In other words, a narrow approach.

The risks above can be tackled by providing supervisors clear instructions and assessment forms with criteria. It can also be an option to let the assessment carried out by someone else rather than the supervisor. This is always recommendable, but not always realistic. In the chapter about assessments an example of assessment forms is included for practical training. The apprenticeship issue can be solved by providing the student more different learning contexts. This can be another company, within the company of even within the school.

A narrow approach is the result of the use of too small units, leading to a fragmented educational programme, where the binding between the units is missing. The risk here is an overload of assessments and missing the entire scope of the occupation. In many countries this remains a challenge: training is provided in a competence way, whilst assessments are still carried out in a traditional way. The advice here is not to define too many educational units and assess the units entirely and not per activity.

2.5.3   Hybrid learning in CBT

When developing a curriculum, different pedagogical and didactical methods have to be taken into account. For this purpose, the evidence-based model of hybrid learning can be helpful. It gives direction to a division of different elements of a course (see figure 13). For TVET practical training is often more than half of the total study time.

Figure 13: model of hybrid learning
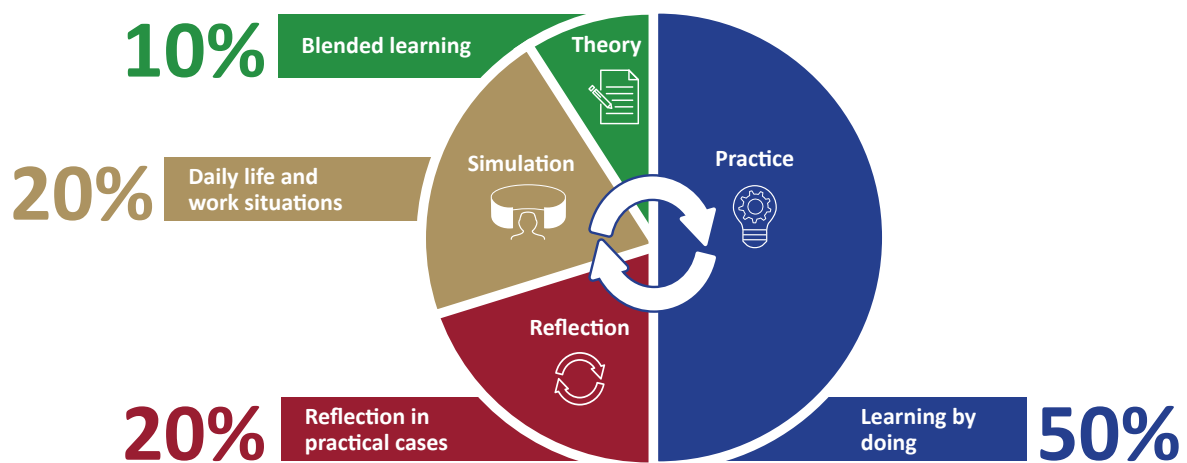
As stated above in the model of social constructivism, learning via reflection, by doing and in daily life situations are very effective. This can be with learning activities, materials and assessment methods that support hybrid forms of learning, including digital learning environments and tools, practical and experiential learning through case studies and problem/projects-based learning.

Learning objective:	Examples:
Application of the achieved knowledge and skills in different interactive working methods in own daily practice and/or at work.	• Serious gaming/ VR scenarios • Mood board • Field visits and field research, • Designing of sustainable products and services, • Panel discussions and focus groups, • Role plays, • Videos, podcasts and blogs
Practical training: learning by doing	• Company visits, • Role play, • Projects, • Real life scenario's from business, • Skills challenges
Reflection on own functioning to make sure that the knowledge, skills and competences are sustainable.	• Critical friend, • Interviewing, • 360 feedback • Presentation • Pitch
Acquisition of theoretical knowledge	• E-learning, • Micro learning, • Videos, podcasts, blogs • Panel discussions • Study visits • Guest lessons of entrepreneurs

2.5.4 The involvement of industry in providing CBT

As indicated earlier, CBT requires meaningful contexts, an interdisciplinary approach of learning methods, interaction in learning and space for discovery and reflection in learning in a way that it stimulates the process of personal and professional development. Besides, CBT in TVET is meant to provide quality education and training that serves the needs of the labour market and puts the learner in the centre. CBT informs learners on what is expected of them and prepares them for certain occupations or professional fields. Therefore, in order to clearly define realistic expectations, and describe and create meaningful professional learning contexts, approaches and material, it is of great importance that the labour market is engaged in the design, implementation and evaluation of CBT in the TVET sector.

Step 1 already described what the role of industry can be at the level of the design of occupational or competency profiles and CBT educational standards, through cooperation with sector skills councils in collecting labour market information, skills needs analysis and the translation to competence based education and training standards.

At CBT provision level there are many other types of direct involvement of industry:

1 The engagement of industry in training development and provision:

Providing industrial placements for staff

Industrial experience is a critical issue for TVET teachers and instructors. It is important that the industrial skills and knowledge they bring to TVET are kept up to date. TVET providers can structurally organise work placements of staff:

- Exposes teachers and instructors to current industry practices

- Brings relevance to their teaching practice

- Strengthens links with industry

- Can be the catalyst for many other joint actions for improving and diversifying experiential learning for the students

Joint development of contextualised and authentic learning materials

For practical and competency based learning materials to be used in school or at the workplace training, teachers and company professionals can jointly develop case studies, practical assignments, authentic industry projects, manuals, assessment material, videos, etc. and includes

- Joint development of training materials and tools
- Organise guest lecture in both directions: teachers in companies and industry representatives in TVET providers
- Joint copyright so that the resource can be customized to meet TVET and industry needs
- Cost-effective method of developing new materials

Provide work placements for students

Through the organisation of work placements (or internship) for students, students gain valuable professional and practical experience. Companies have direct access to the young professionals of future and the internship is often considered as probation period. It also brings fresh minds with new insights and approaches.

- The workplace must be able to provide meaningful experience for the student – the student should not just be engaged in basic tasks nor should they be exploited as cheap labour
- There should be a work placement agreement between the company and the TVET provider, describing clear expectations and conditions, and specifying learning objectives, student guidance and assessment.

Provide industry visits for students

Some companies are willing to allow students and their teachers to view the operational process, services and equipment in their organisation.

- These visits provides a realistic picture of the future work floor of the students and an overview of functions/jobs, tasks, and required skills and attitude.
- The visit should be well organised and reflect specific learning objectives.
- Allows local industry to get to know your TVET organisation.
- Can be used by companies for (career) promotion purposes.

Provide industry projects for students

Companies may be interested to provide real assignments to students and teachers as part of their learning experience, but also to pilot new approaches or outsource low risk jobs. This depends on the level of expertise of the students, guidance of teachers and the equipment available to them. The project can be implemented in school, in the company or in a combination of locations.

• Students work on solving real industry problems and build a portfolio.

• Brings TVET closer to industry needs.

• May influence course content and delivery methods.

• Allows students to understand company processes and challenges and engage directly with professionals in solving industry problems.

• Allows students to learn in a 'project teams' setting.

• Allows companies to get acquainted with young talents, and fresh and innovative minds.

2. The engagement of industry in providing equipment and materials:

Sponsoring or demonstrating equipment

One of the major challenges for all TVET providers is the resourcing of expensive and up-to-date equipment for all training programs. Companies that already have a good relationship with the TVET provider may be willing to donate equipment or offer at reduced cost. Other companies that have the latest equipment may be are willing to demonstrate this equipment to students and teachers.

• The TVET provider will be able allow students and staff to do practical exercises on modern equipment, or to expose students and teachers to modern equipment and demonstrate their operation.

• The company will be able to present their production line, products and equipment that will used by future professional who, once employed, will recommend to their employer purchasing the equipment they are familiar with.

Use TVET facility for industry meetings, displays, conferences

TVET providers may collect some additional income and create an open community and business environment by offering their facilities to external stakeholders for staff-training or meeting purposes.

• Offering facilities to local companies and organisations demonstrates goodwill, openness and entrepreneurial mindset.

• The TVET provider can organise additional catering, technical and conference services provided by students from the different training programmes

3. The engagement of industry in TVET strategies and design:

Industry participation in strategic planning process

It is extremely important to ensure external stakeholders' input to strategic planning process of the TVET provider.

• Invite committed industry representatives that are relevant to your fields of training to become a member of your organisation's governing body.

• Analyse employers' satisfaction among employers that have recruited your school graduates.

• Gather input from local companies in how your organisation can improve the skills match.

• Analyse how your organisation and local companies can join forces to skill the local workforce

Member course industry committee

With industry representatives as members of course committees that advise teaching staff on developments and skills needs in the relevant field or sector you will enhance:

• Integrating specific and up-to-date industry expertise into the design of curricula, and training and assessment approaches and materials.

• Selection of most relevant equipment required for practical training

• Sharing of know how and experience between teaching staff and industry experts

The following principles and conditions for cooperation with industry should be considered:

• Demand driven: identify and promote employers' benefits

• Importance of motivated and entrepreneurial staff: pioneers

• Define common interests and focus of cooperation

• Guarantee organisational and staff support

• Identify funding needs and opportunities

• Create tailored platforms and networks, e.g. sector skills & industry councils

• Work on sustainability

• Create flexibility in education

• Identify multi-level and multi-approach engagement

2.5.5 A shift in looking at education by teachers and trainers

Working with CBT requires a different way of teaching and a different way of thinking about education. Both the student as for the teachers and trainers. It seems that the teachers play an important role in the implementation of successful CBT. If teachers and trainers are not willing, facilitated and/ or capable of making this shift, CBT remains stuck in the development of learning outcomes with a traditional way of teaching and assessments. The CBL handbook from GOA20 (2018) describes five shifts in attitude of a teacher/ trainer:

Shift in thinking and acting	Consequences	Recommendations
From content driven to skills-driven	In the CBT approach, learning is organized around the acquisition of competences. Applying CBT might reveal that there is a mismatch between current teaching practices and what is needed.	Design curricula backwards from learning outcomes. Start with defining the standards/ requirements that are necessary to fulfil the tasks). Teaching should become more skill-driven instead of content driven, this needs to be reflected in the classroom.
From time-based to performance based	In the CBT approach, performance is the measurement rather than the time a student spent.	Teachers should be able to differentiate between students: offer students who need it more guidance. But also: create possibilities for re-assessment. Students have their own influence on the lesson plan, they should be involved.
From lessons to experiences	In the CBT approach, a more holistic view of learning is applied. This includes transdisciplinary skills and a broader view of how students learn.	Teachers should recognize and stimulate learning that happens outside the classroom, next to the learning that happens in class.
From grading to feedback	In the CBL approach, classic grading (summative assessment) is changed to formative assessment. There is more attention for holistic assessment, peer feedback and self-assessment.	Teachers should focus on giving formative feedback and be trained sufficiently to do so. In lessons should be enough space for reflection and to learn how to be reflective learners, peer mentors and feedback-givers.
From educator-designed to co-designed	In the CBT approach, students have a voice in the learning process they follow.	A traditional set curriculum is replaced by an individual pathway that is chosen by the student. Teachers should be up to date about the personal learning goals of the students, to support deeper learning.

It is recommended during the implementation CBT to create space for teachers for intervision, observation, exchange experiences, collaborating with industry, attend info sessions, sharing good practices via social media platforms etc.

2.6 STEP 5: assessments in CBT

2.6.1 Characteristics of a good assessment

Via assessments it can be determined whether students have achieved the required learning outcomes. The information collected through assessment can be compared with predetermined standards (summative assessments) but can also be used to evaluate the training programme (formative assessments).

When choosing the right assessment method, the following characteristics of a good assessment can be considered:

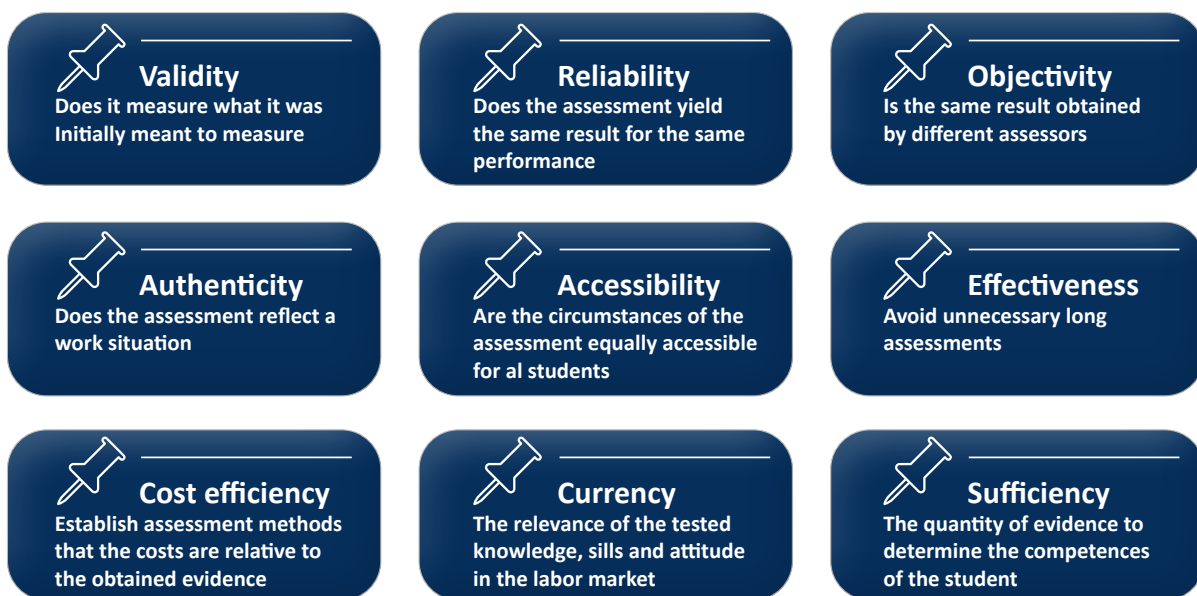| **Validity** Does it measure what it was Initially meant to measure	**Reliability** Does the assessment yield the same result for the same performance	**Objectivity** Is the same result obtained by different assessors
Authenticity Does the assessment reflect a work situation	**Accessibility** Are the circumstances of the assessment equally accessible for al students	**Effectiveness** Avoid unnecessary long assessments
Cost efficiency Establish assessment methods that the costs are relative to the obtained evidence	**Currency** The relevance of the tested knowledge, sills and attitude in the labor market	**Sufficiency** The quantity of evidence to determine the competences of the student

Figure 14: characteristics of a good assessment

2.6.2 Different types of assessment

Assessment is a process of collecting evidences to analyse student's progress and achievement.

- Basically, there is a distinguish between theoretical assessments and practical assessments. Theoretical assessments are focused on the achievement of knowledge and cognitive skills. For example an exam or a report.

- Practical assessments are used to assess competences, skills and behaviours, and work best where the task is "live" and as close to the real world as possible. Well-designed assessments can assess a full range of skills. The assessor observes the conduct of an apprentice, looking for a pre-defined set of performance criteria.

Furthermore, practical assessments Let's first clear out some of the definitions[21]:

Summative assessments:

Assessment that occurs at a point in time and is carried out to summarise achievement at that point in time. Often more structured than formative assessment, it provides teachers, students and parents with information on student progress and level of achievement.

Summative assessments can cover a range of activities if the core task is selected as the entry for assessment. It is recommended not to take too small units for assessment, as activities within the module or unit are often interrelated. A separate assessment of activities may result in missing the overall view of the competences of a student.

Formative assessments:

Assessment that takes place at regular intervals during a course, with feedback provided along the way to help improve the student's performance.

This type of assessment oftens consists if a range of formal, non-formal and informal ongoing assessment procedures used to focus teaching and learning activities to improve student attainment. It is about measuring progress and evolution.

Formative assessments are common in units that are larger and in units that require competences that are difficult to capture in one moment. For example entrepreneurial behaviour or leadership. In that case is recommended to measure progress via formative assessments.

Practical and theoretical assessments can also be direct and indirect.

A direct assessment is a real time observation or presence of the assessor during the assessment. For example, an observation in a company or during an oral test.

Indirect assessments are assessed afterwards. For example a report or a demonstrator (a construction that has to be build).

Conclusion is that there is no one single way of defining what type of assessment should be taken to assess the student's capabilities. The learning outcomes and the corresponding defined assessment standards are always leading.

Some examples of practical and theoretical assessments:

Theoretical assessments	Characteristics for use:	Tips for use
Essay	• For low and high levels • Can cover more learning outcomes	Set clear standards for answers
True/false	• Mainly for lower levels • Effective in formative assessments	Use affirmative sentences and refrain from words as always and mostly
Matching	• Mainly for higher levels • Addresses relationships between	Use illustrations if possible
Multiple choice	• Intermediate and higher levels • Allows discussions, can be used for	Answer options should all be the same length
Work sequence	• For intermediate and higher levels • Relevant in themes such as safety	Use true work-related steps in the sequence

21. UNESCO-UNEVOC Glossary TVETipedia Glossary (unesco.org)

Theoretical assessments	Characteristics for use:	Tips for use
Process-based	• All levels • Can accurately define fields of skills	Preparing supplies for grouting a wall
Product-based	• All levels • More objective than process	Examining the outcome of an engine repair
Project-based	• High level • Individual or group	Devising and implementing a more efficient working method
Simulation	• All levels • Reflects a real work environment	Role play about how to deal with a customer complaint
Portfolio	• All levels • Collection of students work	A collection of fabric designs

2.6.3 Developing service documents as a tool for the planning of assessments

Assessments require preparation from the side of the assessor as the student. Especially practical assessments. In order to be transparent to the student, it is recommended to develop a service document that states exactly how the unit or module will be assessed and what is expected in terms of outcomes. Such service documents are not only a tool for the students, but also for the assessors to plan the assessments. Below an example of a service document:

Example Service document Leadership (module Management, core task Leadership)

Description of the situation of the Module	
Complexity:	The complexity is mainly determined by working with people who have different needs and interests. Besides, the fact that goals and targets have to be reached plays a role. Targets and objectives sometimes have to be achieved under pressure, with limited resources and/ or capacity. This situation requires problem solving skills and knowledge of different coaching and leadership styles. He/ she is flexible and creative in finding the best solution for the situation.
Responsibility and autonomy:	He/ she collaborates with the team and is a project leader and manages at least 1 other person. He collaborates with other colleagues in the organisation, his/ her supervisor and external contacts. He/ she works independently and takes responsibility. He/ she is co-responsible for the results of the entire team. The supervisor/ manager has the final responsibility.
Recommended way of assessment:	The assessments takes place in a practical situation and consists of assignments, followed by an interview with the assessors. In the interview, he/she reflects on own work, acting and behaviour. The candidate will be assessed conform assessment standards.

(Sub)task:	Activities:	Instructions for the assignment:	Deliverables:	Assessment:
Plans and distributes the activities in the team.	Defines the activities that need to be done, the requirements and the capacity necessary to carry out the activities; • Makes a planning and describes the effort of each employee, the tasks, workload and priorities; • Signals in an early stages challenges and risks and defined mitigation measures;	Assignment 1: • Analyses a current projectplan; • Makes a memo for the manager to propose measures for improvements; • Defines a final workplan;	A memo with measures for improvement and a final workplan.	In the workplacement company or in school environment.
Instructs and manages the employees (in projects)	• Informs and instructs employees about their tasks, planning, priorities and results; • Makes sure that activities are carried our conform agreements and workplan; • Coaches employees in their activities.	Assignment 3: • Provides instructions for a small group of employees; • Coaches employees, provides feedback and guides them in the right direction;	Observation and interview	Workplacement company The candidate will be observed during the assignment.
Coaches the employees in their activities	• Observes employees and notices who needs extra attention or support; • Supports employees to perform in an optimal way and to develop themselves; • Provides employees feedback; • Proposes adapted approaches for employees in case the employees needs extra support; • Makes an introduction programme for new employees.			
Shares information with the employees (meetings)	• Discusses the performance of the activities of the team; • Informs the team about recent and future developments; • Provides and asks for feedback on the performance of the activities; • Makes agreements with the employees and makes notes of it; • Organizes, prepares and leads working meetings.	Assignment 2: • Prepares a working meeting and leads the session; • Discusses the workplan during the meeting; • Takes notes and minutes of the meeting.	Proofs of the meeting (agenda, notes, minutes etc)	Workplacement company The candidate will be observed during the assignment.

A practical assessment that is based on observation of demonstration of skills by the students normally consists of the following parts:

Student

General instructions

The practical assignment

Instructions for the interview

Assessor

General instructions

Observation checklists for the practical assignment

Interview format to be conducted after the practical assignment

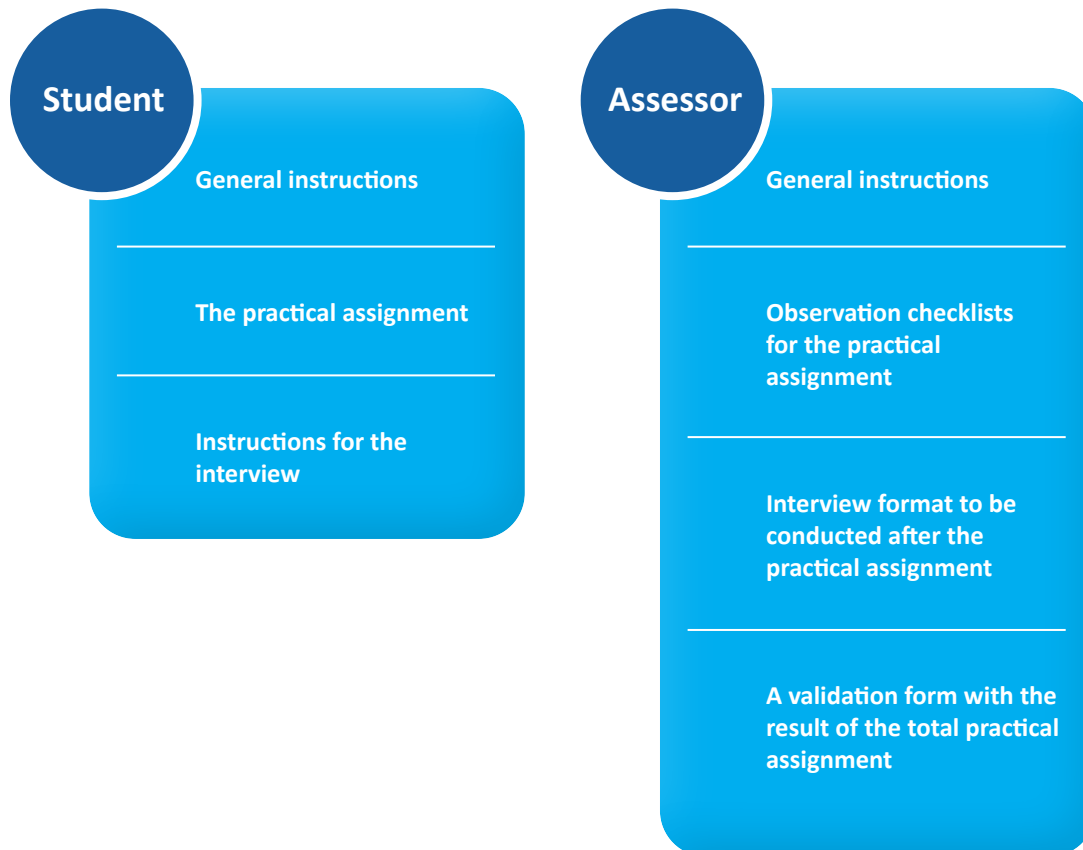A validation form with the result of the total practical assignment

Figure 15: the parts of a practical assignment

In most of the practical assessments that take place in the form of an observation, are followed by and interview. The interview is a check whether the student has understood was he/ she was doing during the elaboration of the assignment. And what should the student have done if the situation was different? It is a way of verifying how the student would operate in different contexts and circumstances. Ideally the assessment takes place in different contexts and circumstances, but this is not realistic.

Paragraph 2.6.4 provides a full example of a practical assessment, including instruction for the students and an observation checklist.

2.6.4 An example of a practical assignment with checklist and interview guide[22]

Module: customer contact and selling

Core task: organizing and implementing marketing and promotional activities.

Level: EQF 3

Information for the candidate
Before you start the assessment, you know: • The composition of the assessment (number of assignments, type of assignments) • Where the assessment takes place: school or workplacements or other; • The timing of the assessment (date and time of the different elements); • The content of the assignment; • The duration of the assignment; • Necessary equipment for the assessment.

The elements of the assessment:

The assessment of the module Marketing and promotional activities consist of the following parts:

PART I: you will do three activities in the field of marketing and promotion. These activities take place in a practical relevant environment (company or school). You have to make sure that there is proof of your activities. This means that you have to keep all the proofs in a portfolio. The portfolio will be assessed by an assessor of your school.

PART II: After the assignments, an interview takes place with the assessor(s). In this interview you will get question on the activities that you carried out, your approach and way of working, your behavior and choices that you made.

The final result of the assessment is a combination of PART I and PART II.

Your portfolio and interview

When you work on the assignments, you keep your portfolio up to date. You collect evidence of the assignments. You use your portfolio in the interview with the assessor to show and explain what you did, how you did it and why you did it in that way.

In your portfolio you describe:
• A short description of the assignment
• How you elaborated the assignment
• Remarkable experiences during the elaboration (challenges)
• How did you solve the situation
• Why you carried out the activities in the way you did
• Your reflection on the assignment. Are you satisfied and why (not)
• Other relevant information

Make sure that you bring your portfolio at the interview with the assessor (PART II).

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22. *Translation of practical assessments and service documents and rubric, developed as concept assessments for minors in NLQF (Netherlands), van den Bosch, 2016*

PART I: assignments in a practical setting
Assignment 1: Marketing and promotional activities
CANDIDATE
What kind of activities you exactly have to do. This can be marketing and promotion of goods, services, or something else. This depends on the company where you do your internship. Make sure that you collect proofs of every step in the assignment. The assignments will be assessed afterwards and not at the moment of elaboration.
Duration:
The activities are not limited to a specific duration. Discuss with your supervisor the duration of the activities
Activities to carry out in this assignment:
STEP 1: preparation: Investigate what kind of marketing and promotion activities takes place in your company for the services and/ or goods that you provide and sell. You investigate at least the following: • Which products, services does your company provide? • In which way are customers informed about these goods and services? • Which promotional materials are available? • Which promotional and marketing activities take place? • What are the corporate regulations about these activities? Make a short report with analysis of the above and keep it in your portfolio.   **STEP 2: elaborate promotional activities** Discuss with your supervisor which promotional activities you can elaborate or where you can assist. You carry out at least three promotional activities and collect proof in your portfolio. Think about video, foto's, contribution on social media. Examples of activities: • Presentation of goods in your company (display/ vitrine) • Create visibility around goods and services via social media • Informing customers via sales talks • Contribution to the company website   **STEP 3: Ask for feedback on your activities** Discuss the elaboration of the promotional activities with your supervisor. Ask for feedback. What did you do well and where are points for improvement? Make a report or blog of your evaluation and include it in your portfolio. You can also ask for feedback at customers.
Deliverable/ result of the assignment:
• Report and analysis of marketing and promotional activities • Proofs of elaboration of three different promotional activities • Feedback/ reflection on the activities

Assessment criteria for the assessor Assignment 1: Marketing and promotional activities ASSESSORS	Result*:
Is able to carry out a simple research in a company on the marketing and promotional activities.	
Is able to carry out research on the regulations on marketing and promotion of goods and services.	
Has carried out at least three promotional activities (different)	
Has elaborated the promotional activities conform the regulations and corporate instructions of the company.	
Shows knowledge and understanding of the goods and services in the company Shows knowledge and understanding about the developments and trends in the company, branch and sector.	
Shows empathy while elaborating the promotional activities (puts himself in the place of the customer and is aware of different types of customer behavior).	
Shows commercial acting and behavior and acts conform the targets and objectives of the company.	
Works precise, structured and accurate	
Asks for feedback at colleagues and supervisor. Draws conclusions for own behavior and acting.	
Final result of the observation of the assignment:	
Remarks:	

*very good – good – sufficient – not sufficient

PART II: Interviews with the assessors

Assignment 1: Marketing and promotional activities

ASSESSORS

The tasks in this assignment are all-in the field of marketing and promotion. Your supervisor will tell you what kind of activities you exactly have to do. This can be marketing and promotion of goods, services, or something else. This depends on the company where you do your internship.

Make sure that you collect proofs of every step in the assignment. The assignments will be assessed afterwards and not at the moment of elaboration.

Examples of questions for the interview:

• What are your strong points and how did you use them in this assignment?

• What do you like the most in contact with customers and how is that visible in your work?

• What were the challenges in the assignment and how did you act upon this?

• How do you act with different type of customers? How do you adapt your behavior?

• In what kind of commercial environment do you feel the best and why?

• What are according to you the most important characteristics of a good salesman/ woman and why?

• Can you explain if you think you are a good salesman/woman and why?

• How has the contact with customers influenced your behavior in other daily situations?

• Etc.

Assessment (all three elements need to be sufficient):

The candidate shows:	Sufficient	Not sufficient
Examples of (correct behavior)		
Motivates own behavior and acting		
Explains the consequences of his acting and behavior		

Final result of the interview:

Motivation:

2.6.5 Rubrics: a way of measuring progress

A rubric is a learning and assessment tool that articulates the expectations for assignments and performance tasks by listing criteria, and for each criteria, describing levels of quality (Andrade, 2000; Arter & Chappuis, 2007; Stiggins, 2001). Rubrics contain four essential features (Stevens & Levi, 2013).

These levels of quality can be described in levels of complexity, for example the levels in the ACQF, but can also be described in terms of "emerging-approaching-proficient-advanced". The definition implies also that a rubric can be a value tool for monitoring progress and for teaching. It is therefore that rubrics are used for competences that are difficult to assess on one single moment, or that are more complex.

Rubrics give good insight in the development of a student and the progress someone makes.

As long as the standards are defined in an observable manner. Another advantage is that the rubric can provide an overview of requirements of the occupation at all levels.

The example on the next page shows a rubric that is developed as an assessment tool related to 6 EQF levels of TVET. It is a minor about "entrepreneurial behaviour" and can be chosen by students as an additional module to their qualification. One of the activities within this module is that the student must implement possibilities and opportunities.

The following table gives insight in the learning outcomes and on the next page the rubric shows the standards at 6 different levels.

Module (minor)	Entrepreneurial behaviour (level 4)
Task/ activity	**Implementing possibilities and opportunities**
Learning outcomes	- Is able to develop a plan for new opportunities; - Is able to act independently and show initiative; - Is able to spot opportunities for change and improvement of own acting and act accordingly; - Is able to collaborate and knows where and how to create influence;

After performing it is possible at what level the student is for this specific part of the course. The student will be able to work on the elements that are still to be improved in order to be at the level that is required in order to achieve the module (in this case level 4).

Module: entrepreneurial behavior –
Core task: implementing opportunities and possibilities

Level: 4

	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Acting according plan:	Reacts upon the situation that takes place at that moment. Does not look ahead.	Reacts upon situations and is able to plan work for more than a day ahead.	Is able to prepare work on the basis of a plan. Sees when he is not able to reach the plan and notifies the supervisor.	Is able to make an actionplan for the implementation of changes in own work. Checks the progress and adapts the plan where necessary.	Develops an action plan for the implementation of changes in the company. Plans the activities of others. Monitors progress and takes action if needed.	Develops a complete action plan for the implementation of changes in the entire company. Discusses the plan with other stakeholders and activities in the company. Monitors the progress and is able to work multidisciplinary.
Autonomy:	Needs a lot of support and guidance in case of changes. Works under supervision.	Needs clear instructions and guidance in case of changes. Works under supervision.	Is able to adapt own activities after instructions or support. Needs guidance in case of changes. Carries out activities independently.	Needs limited support and guidance. Works independently and reports at supervisor.	Takes initiative and informs supervisor. Is able to coach and guide other colleagues in case of changes. Works independently.	Takes initiative and generates new ideas. Is able to support, guide and steer others in the process of change in the organisation. Works independently.
Motivation/drive:	Needs to be supported on an regular basis in case of changes. Asks rarely for help if he doesn't manage to carry out the activities.	Takes tasks with enthusiasm, but needs support to start with the work. Asks most of the time for help if needed.	Takes the tasks with enthusiasm. Asks for help if needed. Feels involved in case of a challenge or problem. Contributions in thinking about possible solutions in own work environment.	Takes initiative for changes in own work. Stays strong in case of setbacks. Sees and takes the opportunity for changes in own context.	Takes initiative for own changes in work and that of others. Detects and exploits the opportunities and possibilities for changes in a broader perspective than own work.	Generates changes in the company. Is flexible and oversees many opportunities and consequences. Detects and exploits the space for new opportunities in the organization.
Teamworking:	Is focused on own work and prefers to work alone.	Collaborate with others within own range of activities. Knows when he is involved in a challenge or problem.	Collaborates with others and is able to adapt behavior on their reaction. He knows when involved in a problem or situation.	Collaborates well with colleagues and takes initiative for collaboration. Knows where and how to bring in own ideas.	Initiates collaboration and is a sparring partner for the supervisor. Knows when and how to influence the team for changes.	Initiates collaboration and is an example for others. Collaborates with a broad range of stakeholders inside and outside the organization to reach targets and objectives.

Figure 16: Rubrics with concrete and visible behaviour for entrepreneurship .

3. GOOD PRACTICES IN APPLYING THE CBT APPROACH

3.1 Good practice Ghana

Background The CBT approach was introduced in Ghana in the 2000s . Over the past decades the CBT approach has developed. Since 2006 (the start of a pilot phase) CBT has been rolled out at three levels: apprenticeship programs, technical secondary education and higher technical education. Public-private partnerships are used to develop occupational competency standards as base for implementing CBT.	*Characteristics of CBT in Ghana* • The CBT approach is the basis-methodology used to define professional standards and development of training pathways. • Focus on forming associations with the private sector to involve them in deciding upon the occupational standards. • Focus on apprenticeship training (level 1 and 2). • Specific learning outcomes are prescribed for workplace learning (internships)

Impact
In Ghana, the implementation of the CBT approach has been most successful in apprenticeship training (level 1 and 2). The CBT method has largely contributed to the development and recognition of apprenticeship as a training method.

Obstacles
The two major obstacles to the CBT mainstreaming in Ghana are:
- Lack of equipment in the workshops (budgetary CBT);
- Still fragmented roll-out of CBT programs;
- Training of CBT trainers.

Practical example agricultural sector
In Ghana the TVET system is primarily managed by CTVET (Commission for Technical and Vocational Education and Training), which is a part of the ministry of education. COTVET is responsible for standardizing, regulating and supervising vocational training activities. Under guidance of CTVET, the agricultural sector started implementing CBT. Ghana created occupational standards together with the working field that served as a basis for national curricula.

Multiple agricultural colleges worked on capacity building and adding CBT elements in their curricula. Teachers were involved in translating their regular educational program into a competency-based one. They used elements of the royal route as well as the pragmatic route to do so (described here). With help of sponsors, four educational colleges purchased tractors and farming equipment's so they could add competence-based elements in their curriculum at school. Thereby, helping students get hands-on experience in their future occupation.

3.2 good practices

Kenya – Baraka Agricultural College (BAC)
Baraka Agricultural College developed new competence-based curricula to become a sustainable training center.
Core principles of project:
- Curriculum should be business oriented.
- Labor market and other stakeholders should be involved in setting standards.
- Competence based teaching and assessment are focus.
- Focus on income generation strategy for extra income generation
- Procure equipment which can contribute to education and income generation

CBT schools in Egypt
Core principles of CBT in (schools in) Egypt:
- In Egypt the curriculum for CBT is developed together with the labor market (private sector).
- The labor market is involved in assessment.
- Knowledge is in principle connected to skills, other knowledge is abundant.
- The education offered in schools should be tailored to the skills needed on the labor market.
- Auditors are involved for quality assurance

Success factors:
- Labor market awareness and involvement
- Training of the teachers
- Training equipment should be aligned with skills
- Use of international standards (e.g. ESCO)

Cameroon – example technical lycées
Core principles of CBT (of schools) in Cameroon:
- CBT is linked to national qualification framework Cadre National)
- Diploma is the same as you will receive when following the regular curriculum.
- Workbased learning is central and compulsory
- Companies are involved in training, guiding and coaching the students.
- No coherent national approach for CBT yet.

Success factor:
- Organizing trainings for teachers each year

Mozambique – TVET teacher training in CBT
Instituto Superior Dom Bosco offers 4 years
Licenciatura that prepare TVET teachers in 6 different professional fields.

In addition, the institute delivers three courses for TVET professionals (Certificado A, B and C), developed in cooperation with ANEP and fully CBT oriented.
- Certificado A: for upskilling TVET managers
- Certificado B: mandatory for all TVET
- Teachers
- Certificado C: mandatory for all instructors of
- Vocational centres

The 7 modules of the Certicado B are also integrated into the Licenciatura programmes

Cape Verde – National Catalogue of Qualifications
- User friendly and accessible for all users through the website of the Coordination Unit of NQF.
- Structured by sectors: access to qualifications by professional fields
- Uniform information on all qualifications: harmonized template, comparable structure.
- Qualifications documents are detailed and comprehensive. All interested providers, companies, learners can access and download.
- Qualifications structured around competences / learning outcomes: professional profile, units of competence, full training package.

Morocco - delegated management institutes
- Public TVET institutes of which management is delegated to the private sector (branche associations).
- A new form of TVET provision gradually introduced by the government since 2011.
- Built and equipped through state funding.
- Each institut à gestion déléguée (IGD) is focused on a specific sector.
- Fully based on the CBT approach
- No strict approaches - fully sector driven.
- In priority sectors (automobiles, aeronautics, renewable energies, textiles)

4. GLOSSARY

Definitions are in line with the thematic briefs 1: concepts and definitions on qualification and qualifications frameworks.

https://acqf.africa/capacity-development-programme/thematic-briefs/acqf-thematic-brief-1-concepts-and-definitions/@@display-file/file/ACQF_Thematic brief 1_Concepts and definitions_WEB.pdf

Assessment
All methods used to appraise performance by gathering evidence to determine whether learners, trainers, training methodologies, programmes and institutions have achieved the required standards.
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=55

Certificate
An official document, issued by an awarding body, which records the achievements of an individual following a standard assessment procedure.
https://www.voced.edu.au/vet-knowledge-bank-glossary-vet

Competence
Competence means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.
https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32017H0615(01)&from=EN#d1e32-20-1

Curriculum
The inventory of activities implemented to design, organise and plan an education or training action, including the definition of learning objectives, content, methods (including assessment) and material, as well as arrangements for training teachers and trainers.
https://www.cedefop.europa.eu/files/4117_en.pdf

(Level) Descriptors
A statement describing learning achievement at a particular level of the National Qualifications Framework (NQF) that provides a broad indication of the types of learning outcomes and assessment criteria that are appropriate to a qualification at that level.
https://hr.saqa.co.za/glossary/pdf/NQFPedia.pdf

Diploma
An official document, issued by an awarding body, which records the achievements of an individual following an assessment and validation against a predefined standard.
https://www.cedefop.europa.eu/files/4117_en.pdf

Education
The process by which societies deliberately transmit their accumulated information, knowledge, understanding, attitudes, values, skills, competencies and behaviours across generations. It involves communication designed to bring about learning.
http://uis.unesco.org/

Evaluation

Evaluation is the systematic and objective assessment of an ongoing or completed policy, plan or programme, including its design, implementation and results. It aims to assess the relevance and fulfillment of objectives and strategies with the intention of informing decision-making. 'Formative' evaluation relates to ongoing activities and helps guide implementation. 'Summative' evaluation assesses the results of a particular initiative, after completion.
https://unesdoc.unesco.org/ark:/48223/pf0000234819

Flexible learning

Opportunities that provide more choices to the learners in terms of when, where and how they learn. Flexible learning may include use of online learning, work place-based learning, part-time learning, distance learning, and many forms of face-to-face teaching and learning with options to fast track and defer courses.
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=304

Formal learning

Education or training provided in educational institutions, such as schools, universities, colleges, or of-the-job in a workplace, usually involving direction from a teacher or instructor.
https://unevoc.unesco.org/home/UNEVOC%20Publications

Formative assessment

A range of formal, non-formal and informal ongoing assessment procedures used to focus teaching and learning activities to improve student attainment, or which are required for the purpose of a year mark.
https://hr.saqa.co.za/glossary/pdf/NQFPedia.pdf

Informal learning

Learning resulting from daily activities related to work, family or leisure. It is not organised or structured (in terms of objectives, time or learning support). Informal learning in most cases is unintentional from the learner's perspective. It typically does not lead to certification.
https://www.cedefop.europa.eu/files/4064_en.pdf

Job

A job is a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self-employment. Jobs are classified by occupation with respect to the type of work performed, or to be performed.
https://www.ilo.org/public/english/bureau/stat/isco/docs/resol08.pdf

Knowledge

Knowledge is central to any discussion of learning and may be understood as the way in which individuals and societies apply meaning to experience. It can therefore be seen broadly as the information, understanding, skills, values and attitudes acquired through learning. As such, knowledge is linked inextricably to the cultural, social, environmental and institutional contexts in which it is created and reproduced.
https://unesdoc.unesco.org/ark:/48223/pf0000232555_eng

Learning activities

Deliberate activity in which an individual participates with the intention to learn.
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=284

Learning outcomes

Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence.
https://www.cedefop.europa.eu/files/4064_en.pdf

Lifelong learning
Learning that takes place in all contexts in life – formally, non-formally and informally. It includes learning behaviours and obtaining knowledge; understanding; attitudes; values and competencies for personal growth, social and economic wellbeing, democratic citizenship, cultural identity and employability.
https://hr.saqa.co.za/glossary/pdf/NQFPedia.pdf

Module (or unit)
A course or part of a course in the context of a modular programme. A module may be taken singularly or combined with other modules offered.
http://uis.unesco.org/

Non formal learning
Planned learning activities, not explicitly designated as learning, towards the achievement of a qualification or part qualification; often associated with learning that results in improved workplace practice.
https://hr.saqa.co.za/glossary/pdf/NQFPedia.pdf

Occupation
The kind of work performed in a job. The concept of occupation is defined as a 'set of jobs whose main tasks and duties are characterized by a high degree of similarity'. A person may be associated with an occupation through the main job currently held, a second job, a future job or a job previously held. A job is defined in ISCO-08 as 'a set of tasks and duties performed, or meant to be performed, by one person, including for an employer or in self employment'.
https://www.ilo.org/public/english/bureau/stat/isco/isco08/index.htm

Programme
A coherent set or sequence of educational activities designed and organized to achieve pre-determined learning objectives or accomplish a specific set of educational tasks over a sustained period. Within an education program, educational activities may also be grouped into sub-components variously described in national contexts as 'courses', 'modules', 'units' and/or 'subjects'. A programme may have major components not normally characterized as courses, units or modules – for example, play-based activities, periods of work experience, research projects and the preparation of dissertations.
http://uis.unesco.org/

Qualifications
Means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards.
https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017H0615(01)&from=EN

Quality Assurance
Processes and procedures for ensuring that qualifications, assessment and program delivery meet certain standards
https://www.ilo.org/wcmsp5/groups/public/@ed_emp/@ifp_skills/documents/instructionalmaterial/wcms_103623.pdf

Recognition of prior learning
The Recognition of Prior Learning (RPL) is a process through which formal, non-formal and informal learning is measured, mediated for recognition across different contexts and certified against the requirements for credit, access, inclusion or advancement in the formal education and training system or workplace. (Source: National Policy for the Implementation of RPL: par 30).

The aim is to make it possible to obtain formal recognition for knowledge gained throughout life, such as in work-places and own reading or experiences. The RPL process also entails providing support to a candidate to ensure that knowledge is discovered and displayed in terms of a relevant qualification registered on the National Qualifications Framework (NQF).
https://careerplanet.co.za/understanding-rpl/

Skills
A bundle of knowledge, attributes and capacities that can be learnt and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.
http://www.oecd.org/education/47769000.pdf

Stakeholder
A person or organization with an interest or concern in something. In vocational education and training stakeholders include government, providers of training, industry, clients and the community.
https://www.tesda.gov.ph/uploads/File/RelatedTvetInfo/The%20TVET%20Glossary%20of%20Terms,%204th%20Edi-tion.pdf

Standards:
Explicit statements about expected capabilities to be met as an expression of accomplishment.
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=452

Tracer studies
A tracer study is a retrospective analysis taking a sample of former beneficiaries of a child labour intervention and looking into the changes that transpired in their lives and that of their families.
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=452and Tracer studies (IPEC) (ilo.org)

TVET: Technical Vocational Education and Training
TVET, as part of lifelong learning, can take place at secondary, post-secondary and tertiary levels and includes work-based learning and continuing training and professional development, which may lead to qualifications. TVET also in-cludes a wide range of skills development opportunities attuned to national and local contexts. Learning to learn, the development of literacy and numeracy skills, transversal skills and citizenship skills are integral components of TVET.
https://unesdoc.unesco.org/ark:/48223/pf0000234137

Units
Units are a set of learning outcomes (knowledge, skills and/or competences) which constitute a coherent part of a qualification. A unit can be the smallest part of a qualification that can be assessed, transferred, validated and, possibly, certified (such as in relation to ECVET). A unit can be specific to a single qualification or common to several qualifications.
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=452sary (unesco.org)

Validation of learning outcomes
Confirmation by a competent body that learning outcomes (knowledge, skills and/or competences) acquired by an in-dividual in a formal, non-formal or informal setting have been assessed against pre-defined criteria and are compliant with the requirements of a validation standard. Validation typically leads to certification.
https://www.cedefop.europa.eu/files/4064_en.pdf

Workbased learning
Learning taking place through carrying out and reflecting on work tasks in a real environment
https://unevoc.unesco.org/home/TVETipedia+Glossary/lang=en/filt=all/id=452Glossary (unesco.org)

FURTHER READING

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ACQF, Training module 5: Quality assurance in the context of ACQF: ACQF Training Module 5_Rev_FINAL_WEB.pdf

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Cedefop, European Handbook on Defining, Writing and Applying learning outcomes: Competency-Based Training (CBT): An Introductory Manual for Practitioners (ilo.org)

EQF, descriptors: The European Qualifications Framework (EQF) | Europass

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Relevant ACQF analyses and resources

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ACQF Training Modules: https://acqf.africa/capacity-development-programme/training-modules

ACQF Peer Learning Webinars: https://acqf.africa/capacity-development-programme/webinars

ACQF Thematic Briefs: https://acqf.africa/capacity-development-programme/thematic-briefs

ACQF Mapping study collection: https://acqf.africa/resources/mapping-study

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