Workshop Somalia NQF-RPL-CATS

Session 4
NQF Pillars and Tools
Levels and descriptors; Quality Assurance of qualifications and the NQF; Micro-credentials

NQF is an eco-system

Somalia – NQF-RPL-CATS Consultation week
Nairobi, 8-10/Nov 2024

Eduarda Castel-Branco

Main topics of session 4

Level descriptors

Learning descriptors

Quality assurance

Micro-credentials

4.1 Level descriptors

Key definitions

Learning Outcomes – mean 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.

- It's about expected and achieved learning outcomes!

Level Descriptor – means a statement describing learning achievement at a particular level of the NQF that provides a broad indication of the types of learning outcomes and assessment criteria that are appropriate to a qualification at that level.

Levels of NQF / RQF
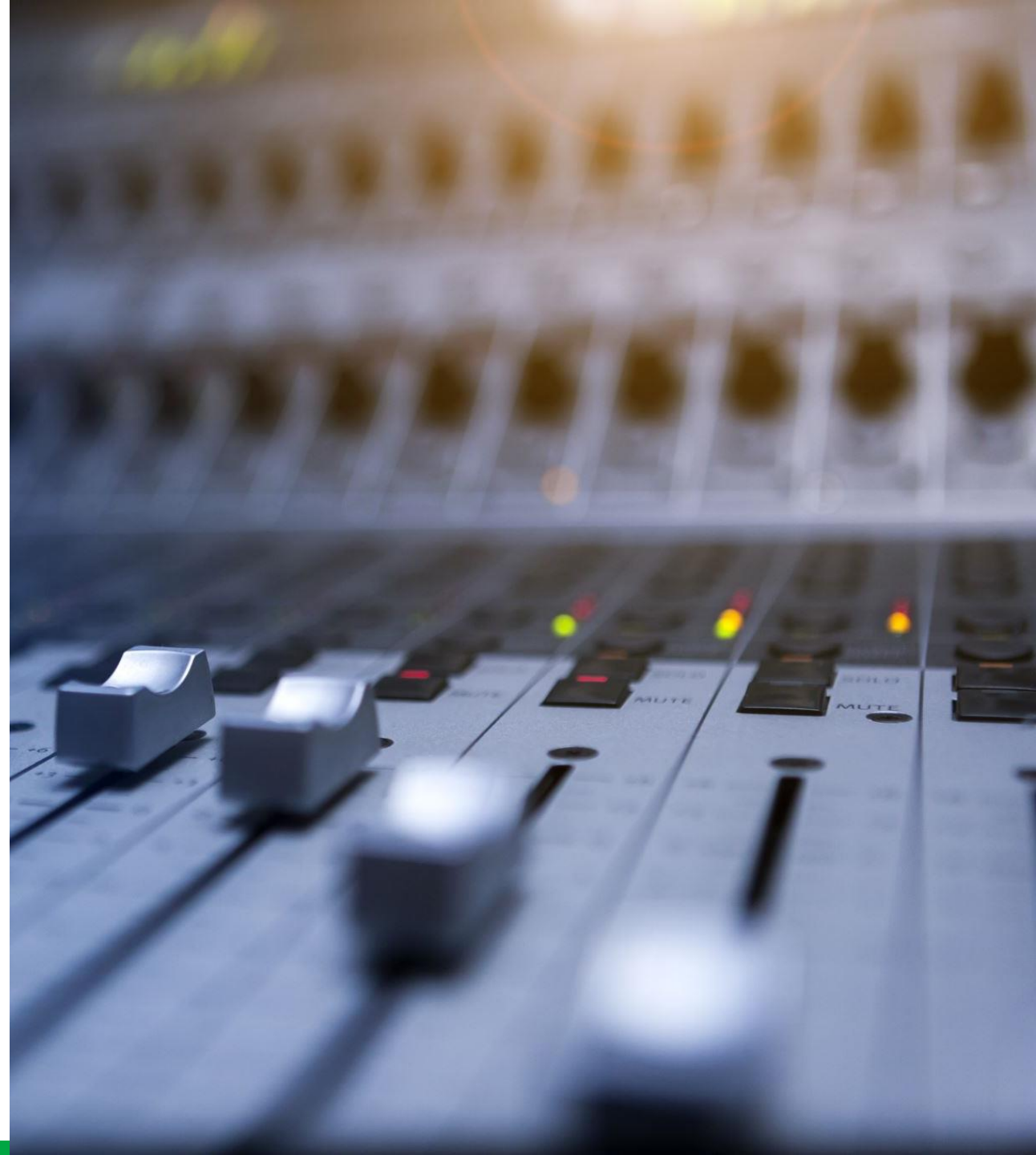
Level descriptors

Level descriptors

Source: ACQF Guideline 2 and ACQF Training Module 2

Level descriptors of NQFs and RQFs: Similarities

NQF

- Are at the heart of development of qualifications frameworks
- Are formulated as general learning outcomes statements and signal transparency
- Are suited to a particular purpose
- Are an agreed central reference point and multi-stakeholder platform for dialogue
- Based on logic along vertical and horizontal dimensions

RQF

➢ Based on learning outcomes

➢ Level descriptors are described as a hierarchy of levels of learning complexity, based on learning outcomes

➢ Support NQF development and promote learning outcomes based approaches in the regional block

Level descriptors of NQFs and RQF: Differences

NQF level descriptors

More detailed and complex

✓ capture the complexities of the national system

✓ describe the complexity of learning in qualifications/ qualification types and are often linked to features of existing qualifications.

✓ as a benchmark for levels of learning achievement recognised at national level they orient the allocation of a national qualification to an NQF level.

✓ The positioning of two or more qualifications on the same NQF level indicates that the qualifications are broadly comparable in terms of generic complexity at that level of the NQF, regardless of where or how the qualification was obtained.

RQF level descriptors

RQF level descriptors serve purposes complementary to those of NQF's:

✓ a basis for referencing levels of NQFs or systems to the RQF

✓ orientation for countries/ regions in developing qualifications frameworks or systems

✓ orientation towards common minimum benchmarks for outcomes of learning on the regional block

✓ level descriptors signify the levels of learning complexity at regional level

✓ do not capture the same complexities that are evident in national level descriptors

Levels and level descriptors

- Number of levels of **learning complexity**
  - Influenced by the implicit levels of learning complexity of various qualification types
  - And by international/regional trends and consideration
- Purpose of levels is to be able to **locate a qualification** on the NQF
- Needs to have a **vertical and horizontal logic**

Level descriptors and domains

- Written as **learning outcomes**
- Need to agree on the definitions of **each domain**, and the principles for drafting

Level descriptors and domains	Pros and Cons
Separate multiple domains	Provides clarity for reader and ability to compare the 'build' of each domain. Assists in horizontal and vertical logic.
Merged statement with domains embedded	May be difficult to compare the different levels of complexity, and harder to determine the horizontal and vertical logic.

Overview — situation in Africa

QF	Number	Comments
NQF of 10 levels	16	13 in SADC, 1 in Kenya, 1 in Rwanda, 1 in The Gambia,
NQF of 8 levels	6	West, East and North Africa
NQF of 7 levels	1	Tunisia
6-level sectoral NQF	1	Nigeria (NSQF — TVET)
5-level sectoral NQF	1	Senegal (TVET)

African NQFs: LEVEL DESCRIPTORS (sample)

ACQF

Country	Domains of learning — level descriptors
Angola	Knowledge, skills, autonomy and responsibility
Botswana	Knowledge, skills and competence
Eswatini	Knowledge, skills, personal attributes
Lesotho	Areas of knowledge; nature of competences; Agency and context
Mauritius	Demand; learning processes
Mozambique	Knowledge, skills, autonomy and responsibility
South Africa	"Applied competence" has **10 categories**, used across all 10 levels: Scope of knowledge; knowledge literacy; method and procedure; problem solving; ethics and professional practice; accessing, processing and managing information; producing and communicating of information; context and systems; management of learning; accountability. And **3 constituent elements**: a) foundational competence (intellectual / academic skills of knowledge together with analysis, synthesis and evaluation; b) practical competence (operational context); c) reflexive competence (learner autonomy).
Seychelles	The degree of complexity of the tasks; reasoning and problem solving; knowledge; autonomy and responsibility – changed to Knowledge – Skills – Autonomy and Responsibility
Zambia	Foundational competence; practical competence; reflexive competence. CHANGED: KSC

EQF context: levels

NQF Level structure	Nr of NQF
7	2
8	**36**
10	2
TOTAL	40

- Strong predominance of 8-level NQFs.
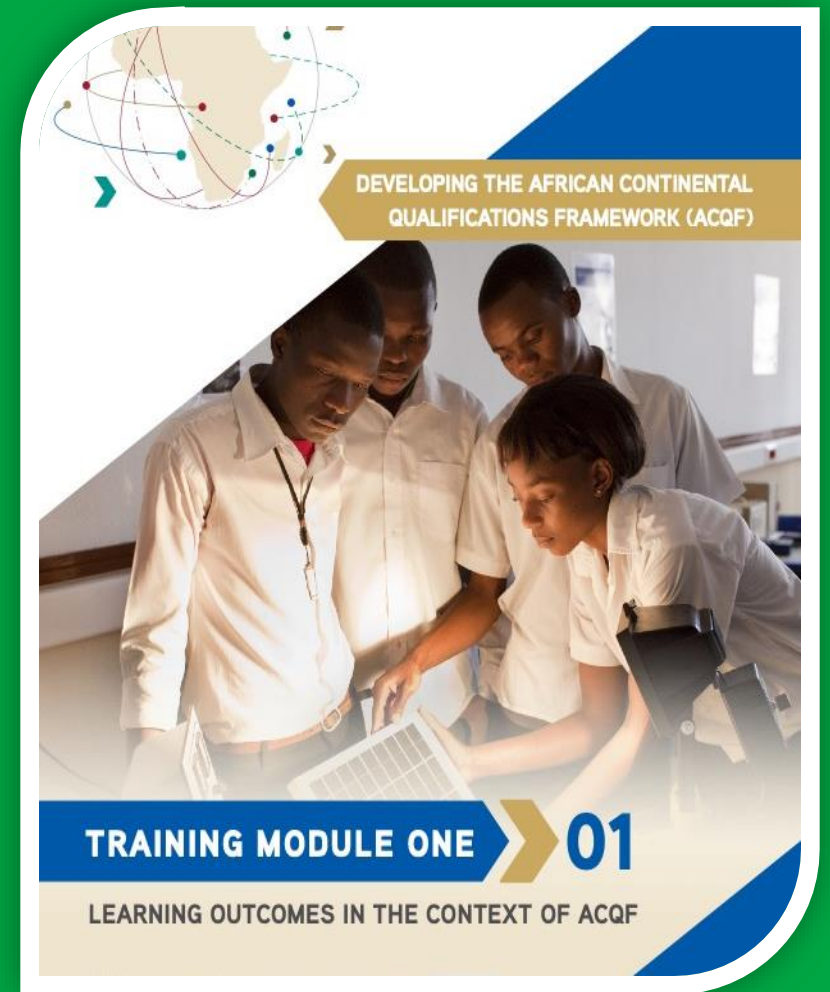- Some NQFs have levels and sub-levels to better accommodate the qualifications of different national systems

EQF Context – level descriptors

EQF Context: Domains of learning NQF

- OTHER COMBINATIONS — 15
- KNOWLEDGE, SKILLS, COMPETENCE — 18
- KNOWLEDGE, SKILLS, AUTONOMY AND RESPONSIBILITY — 7

4.2. Learning outcomes

TRAINING MODULE ONE 01

DEVELOPING THE AFRICAN CONTINENTAL QUALIFICATIONS FRAMEWORK (ACQF)

LEARNING OUTCOMES IN THE CONTEXT OF ACQF
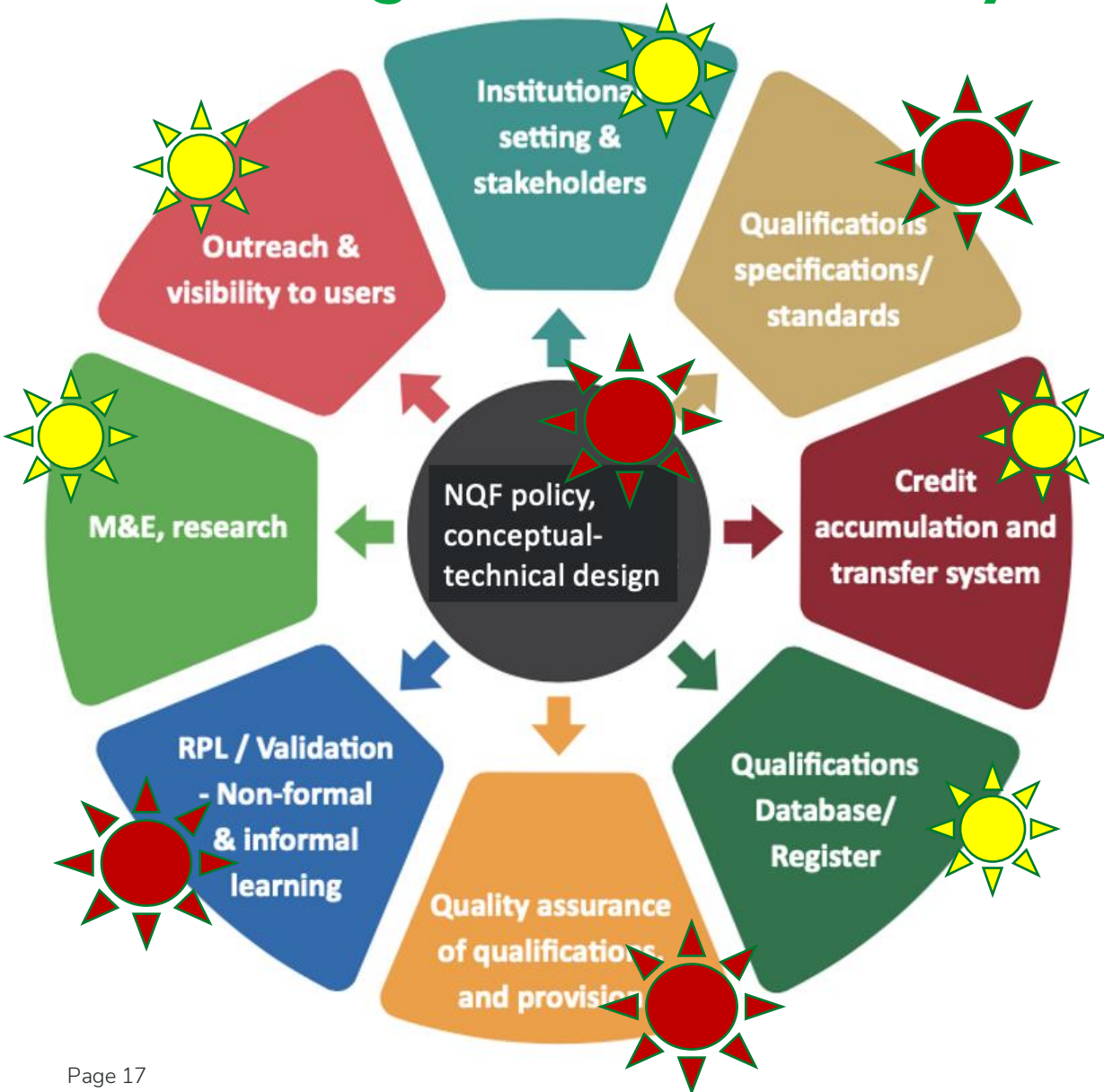
4.2.1 Learning outcomes – sources and definitions

The systemic view of NQF
Learning Outcomes – are everywhere

Introduction

This presentation addresses an essential building block of qualifications frameworks: Learning Outcomes

To learn more:

✓ **ACQF Training Modules 1 and 2**

At: https://acqf.africa/capacity-development-programme/training-modules/training-modules-1-to-10-english

✓ **ACQF Thematic Brief 10**

At: https://acqf.africa/capacity-development-programme/thematic-briefs/acqf-thematic-brief-10-acqf-level-descriptors-the-story-of-the-development-journey

✓ **Orientation Note on RQF**

At: https://acqf.africa/resources/library/publications-from-international-sources/etf-orientation-note-on-regional-qualifications-frameworks-2021

Cedefop

Cedefop: Handbook on Learning outcomes (second edition, 2021):
https://www.cedefop.europa.eu/en/publications/4209

Cedefop: Handbook on Learning outcomes (first edition, 2017):
https://www.cedefop.europa.eu/en/publications/4156

Sources, references on NQFs

- Cedefop: Online tool on NQF in Europe: https://www.cedefop.europa.eu/en/tools/nqfs-online-tool
- Cedefop: Handbook on Learning outcomes (second edition, 2021): https://www.cedefop.europa.eu/en/publications/4209
- Cedefop: Handbook on Learning outcomes (first edition, 2017): https://www.cedefop.europa.eu/en/publications/4156
- EQF and Europass: https://europa.eu/europass/en/european-qualifications-framework-eqf
- Global Inventory NQF-RQF (every 2 years) – ETF, Cedefop, Unesco
- ACQF website: library - https://acqf.africa/resources/library/publications-from-international-sources
- ACQF Training Modules: https://acqf.africa/capacity-development-programme/training-modules
- ACQF Thematic briefs: https://acqf.africa/capacity-development-programme/thematic-briefs
- ACQF Mapping study: https://acqf.africa/resources/mapping-study

European Handbooks on Learning outcomes (Cedefop)
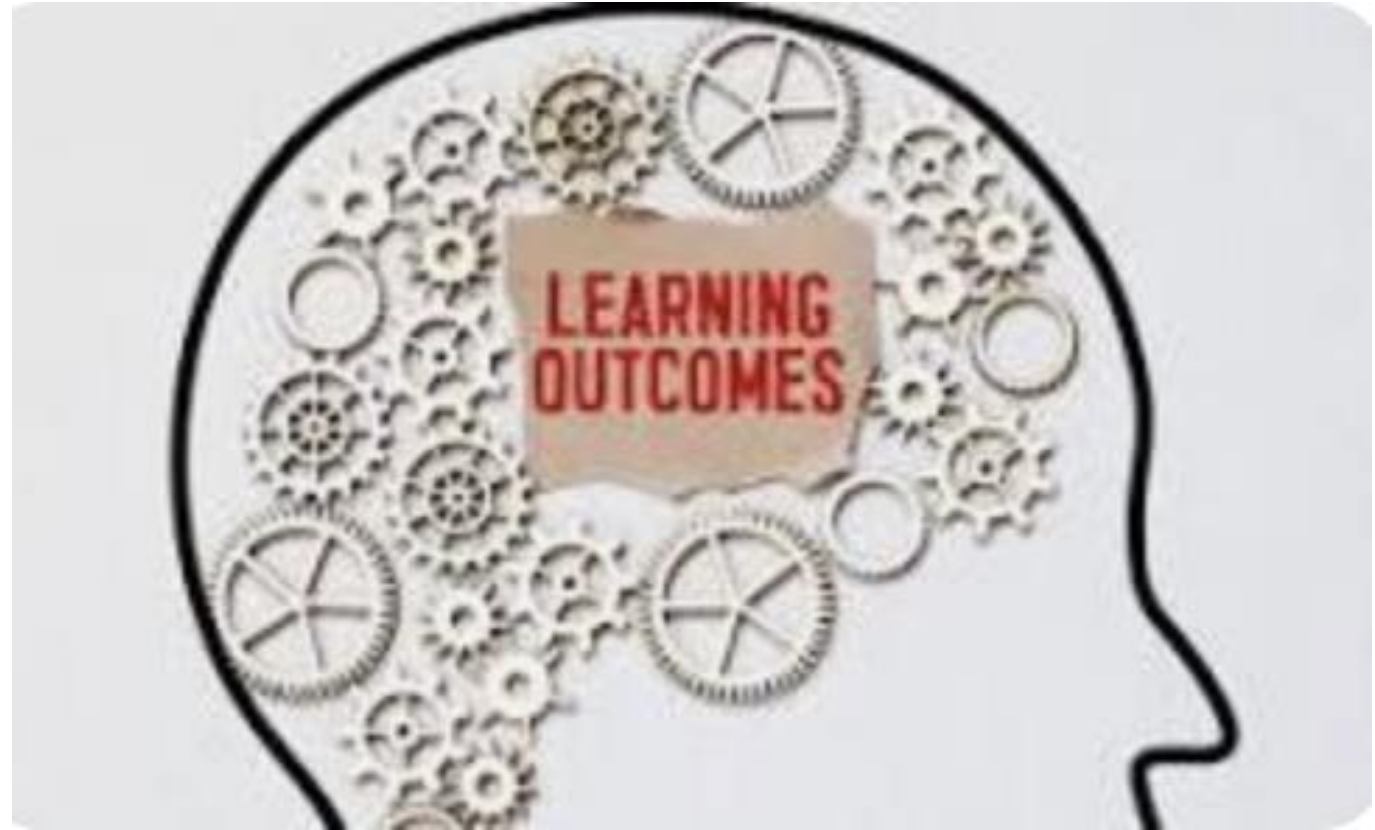
ACQF
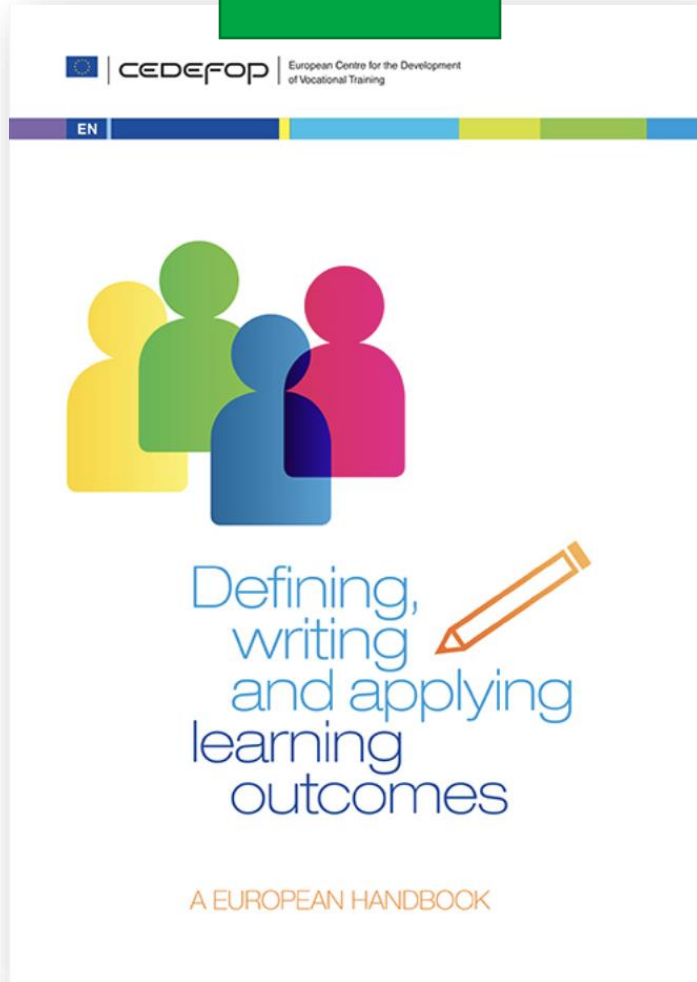
2nd edition

1st edition
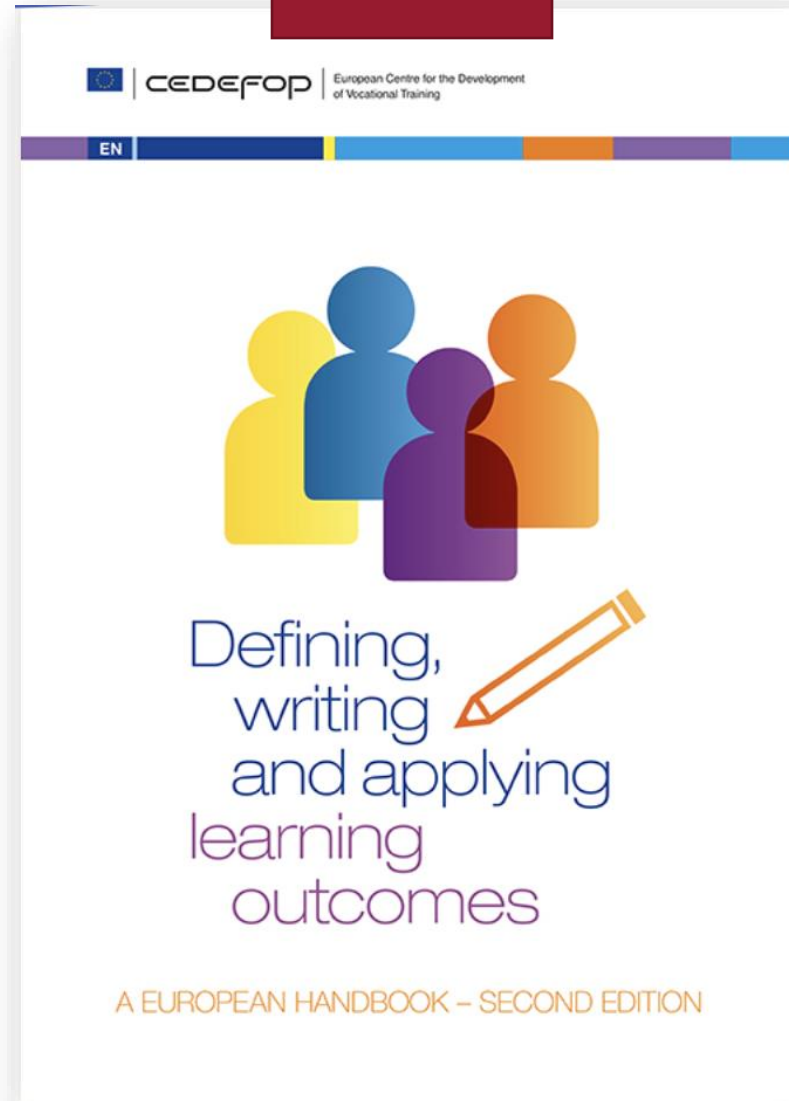
European Guidelines on defining and writing learning outcomes-based short descriptions of qualifications, (2024)

Learning outcomes

ACQF
African Continental Qualifications Framework

A qualification: 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.
Source: EQF Recommendation.

A national qualifications framework (NQF) is 'A policy and instrument for the development and classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims at integrating and coordinating national qualifications subsystems and improve the transparency, access, progression and quality of qualifications in relation to the labour market and civil society.
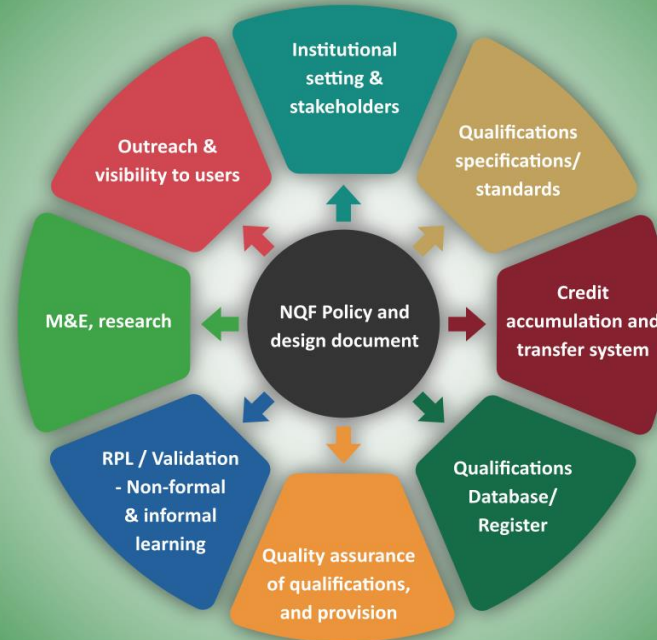*Source: EQF Recommendation*

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.

Set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal and informal.
Source: Cedefop

A national qualification system includes all aspects of a country's activity that result in the recognition of learning. These include the means to develop and operationalise national or regional policy on qualifications, institutional arrangements, **quality assurance processes, evaluation and attribution** processes, **skills recognition** and other mechanisms linking education and training to the labour market and civil society. Qualifications systems can be more or less integrated and coherent. One of the characteristics of a qualification system may be an **explicit qualifications framework.**
Source: OECD, Bridges to Lifelong Learning, 2007

A regional qualifications framework (RQF) is a broad structure of levels of learning outcomes that is agreed by countries in a geographical region.

A means of enabling one national framework of qualifications **to relate** to another and, subsequently, for a qualification in one country to be compared to a qualification from another country.
Source: ASEAN
QRF: ASEAN Qualifications Reference Framework, A Practical Guide and All you Need to Know.

Level descriptor: A statement describing learning achievement at a particular level of a Qualifications Framework that provides a broad indication of the types of learning outcomes and assessment criteria that are appropriate to a qualification at that level.
Source: SAQA, NQFPedia

Diagram — NQF Policy and design document (central), with surrounding elements:
- Institutional setting & stakeholders
- Qualifications specifications/ standards
- Credit accumulation and transfer system
- Qualifications Database/ Register
- Quality assurance of qualifications, and provision
- RPL / Validation - Non-formal & informal learning
- M&E, research
- Outreach & visibility to users

Completion of a "Learning process" – not about "duration of formal schooling"

A.

Statements of what a learner <u>knows, understands and is able to do</u> on completion of a learning process, which are defined in terms of knowledge, skills and competence.

Set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, **either formal, non-formal and informal**.

Source: Cedefop. Terminology.

https://www.cedefop.europa.eu/files/4117_en.pdf

Results of what a learner <u>knows, understands and is able to do</u> upon completion of a learning process.

Source: Addis Convention (UNESCO)

Revised Convention on the Recognition of Studies, Certificates, Diplomas, Degrees and Other Academic Qualifications on Higher Education in African States (Addis Convention), adopted on 12 December 2014 in Addis Ababa

https://en.unesco.org/news/unescos-addis-convention-higher-education-enter-force

Learning outcomes encourage a more systematic approach to qualifications design - and comparison

ACQF

✓ **Common language** for describing and comparing qualifications and for defining level descriptors

✓ Provides understanding of what **will be learned and how best to achieve it.** Set expectations, guide teaching and learning, essential for assessment.

✓ Enable **learner-centred approach**: Enable learners to be clearer about learning expectations, encourage learners to take initiative and responsibility for own learning

✓ Promote **personal achievement, mobility and recognition**. Achievement (through formal, non-formal and informal pathways) of assessed learning outcomes signals that an individual has achieved certain learning outcomes, and usually culminate in a qualification award

✓ **Supports credit systems** to create flexible ways for individuals to gain access to qualifications

✓ Essential for transparency and quality of RPL

✓ Allow stakeholders to have a better understanding of what to **expect from a qualification holder**

✓ Allow **evaluation/ comparison of the qualification** for work or study purposes (local and international)

Learning outcomes – eco-system

1. Structure
- As building blocks of qualifications policy
- As common currency that enhances transparency

2. Guide for coherence
- Classification of qualifications in the NQF/ NQS
- Learning outcomes statements
- Teaching and learning (curriculum, modules)
- Assessment
- Certification

Learning outcomes: GPS of the qualifications system

3. Quality assurance
- Continuous improvement
- Expected outcome
- Achieved outcome
- Feedback loop
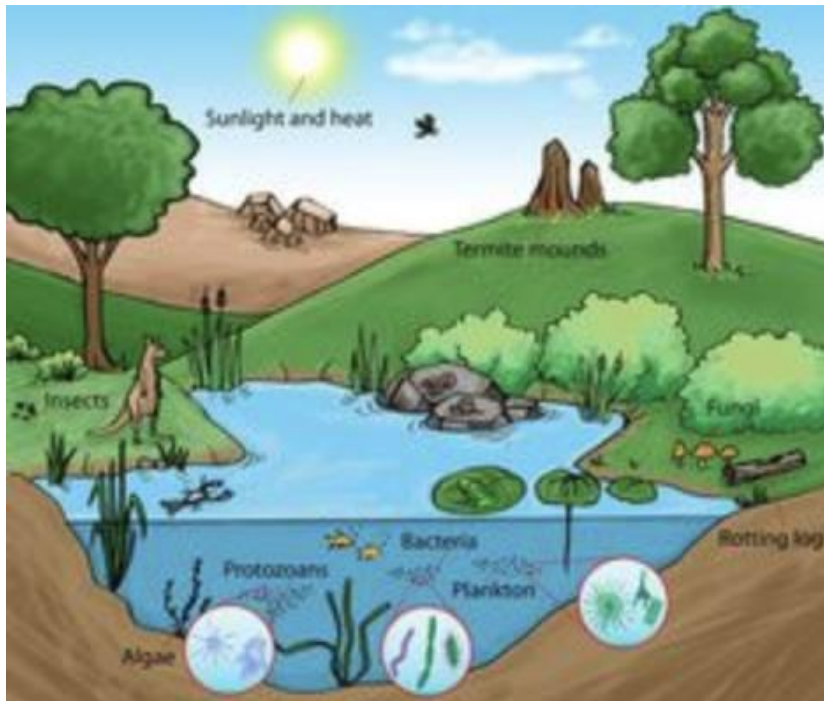
Relationship (loop) between expected and achieved learning outcomes

Desired target

Expected learning outcomes
- *statement of what an individual is* <u>*expected*</u> *to know, be able to do and understand after completing a learning process.*

Achieved learning outcomes
- *Set of knowledge, skills and/or competences an individual has* <u>*acquired*</u> *and/or is able to demonstrate after completion of a learning process*
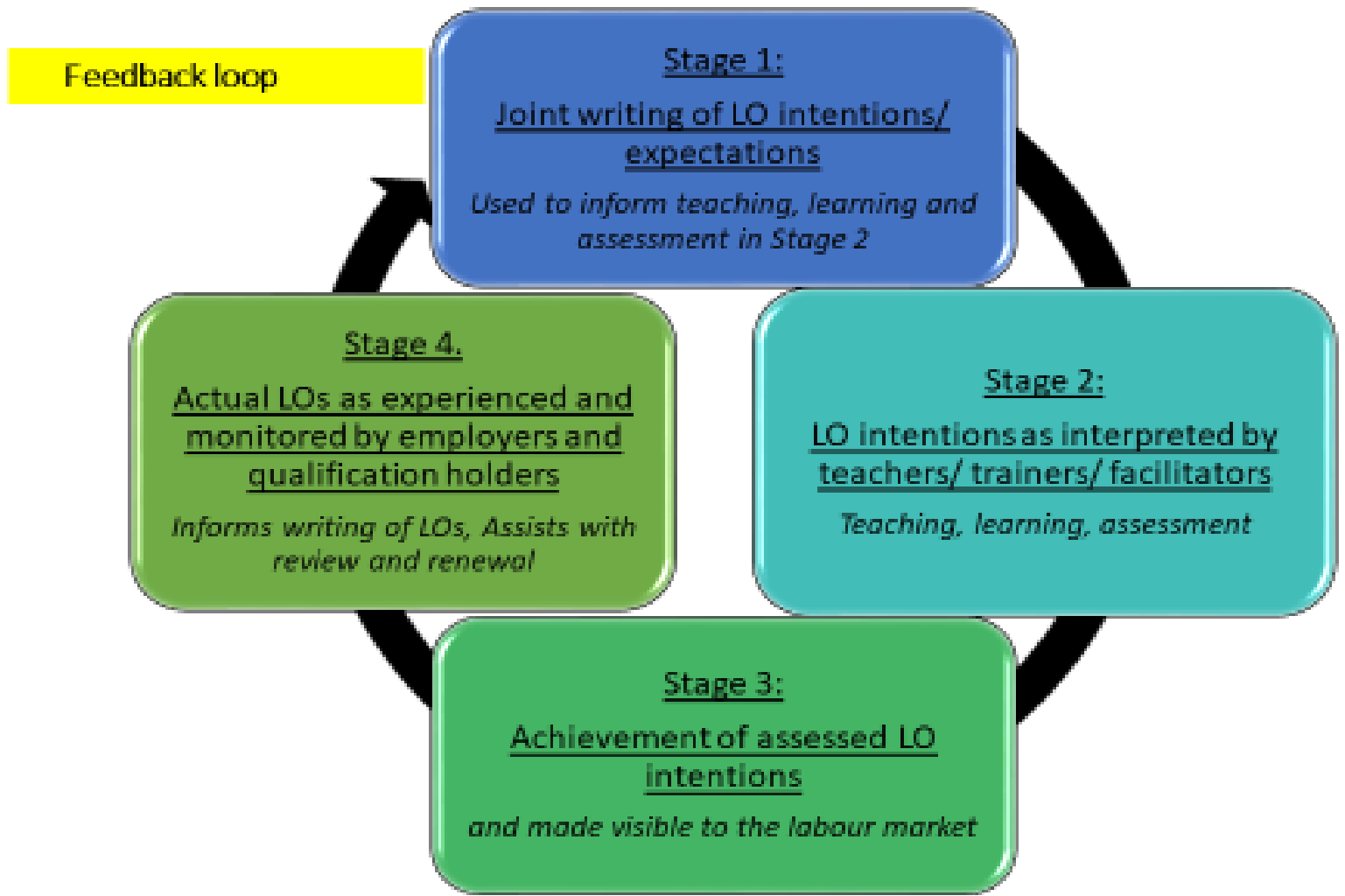
Obtained following learning

Relationship (loop) between expected and achieved learning outcomes
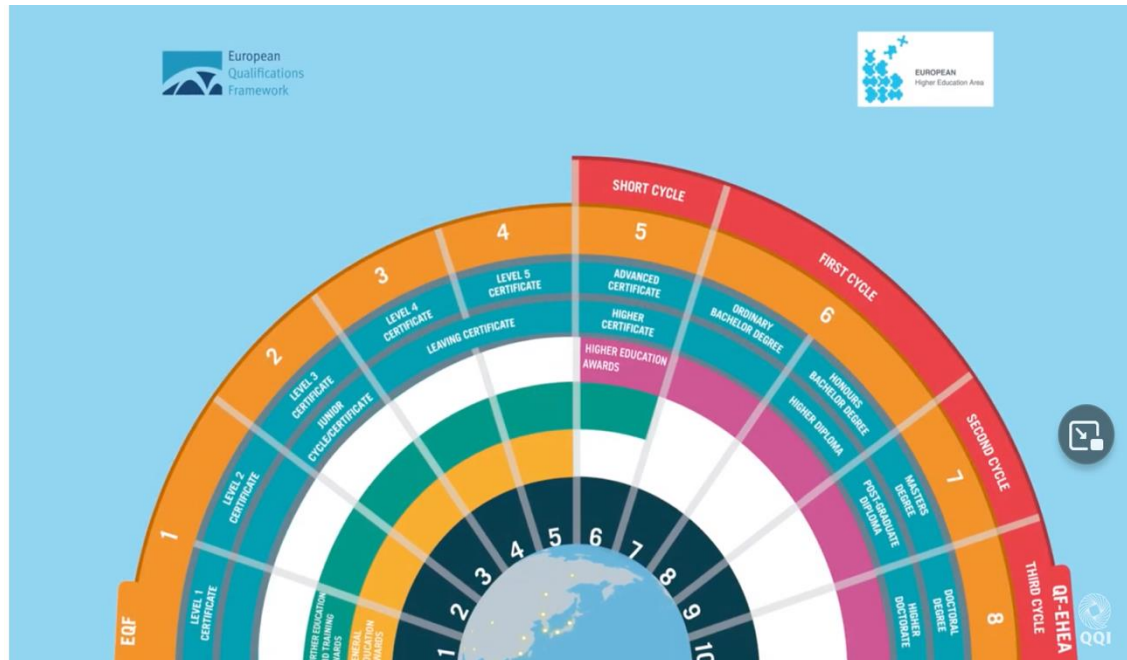*Adapted from Cedefop, 2017, p.29*

Continuous improvement

Adapted from Cedefop, 2021, p.25

4.2.2 Applications of learning outcomes

National qualifications frameworks

National qualifications frameworks (NQFs) help

- To make qualifications **easier to understand and compare**.
- They can also encourage countries to **rethink and reform** national policy and practice on education, training and lifelong learning.

Learning outcomes: a fundamental principle

- NQFs classify qualifications by level, **based on learning outcomes - that is, what the holder of a certificate or diploma is expected to know, understand, and be able to do**.
- This classification reflects the content and profile of qualifications.
- The **learning outcomes approach also ensures that education and training subsystems** are open to one another.
- Thus, it allows people to move more easily between education and training institutions and sectors.
- **Learning outcomes-based qualifications: essential for RPL**

What is a qualification?

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.

Source: EQF 2017

Therefore, a qualification is a specification of **learning outcomes** that is approved by an authority (accrediting body) as meeting the requirements of the NQF.

ACQF

Between the world of work and the world of education and training

Qualifications

Work
Employment
Activities

Skills development (education, initial training, LLL)

Information on demand in labour market	Professional standards	Qualifications standards	Develop Training Programmes	Delivery training	Assessment and certification	M&E - performance

Learning outcomes in different contexts

- As reform tool

- In the NQF /RQF level descriptors

- In the standards of qualifications

- In training standards / programmes

- In assessment criteria

- In RPL / VNFIL processes and standards

- In qualifications documents, credentials: diplomas, certificates, diploma supplements, micro-credentials

- In databases / registers of qualifications

In each context the learning outcomes formulations are more or less detailed, specific, comprehensive.

Domains: Personal, work and education and training

Education and training

- Reforms of education and training
- Level descriptors of QF
- Qualification descriptors, qualification standards
- Diplomas, certificates and related supplements
- Classification of qualifications in the NQF
- Registers, catalogues of qualifications
- Comparison of qualifications between countries (supporting recognition, portability, convergence)
- Quality assurance of education and training
- Coherence between curricula, modules, subjects, assessment, certification
- Credit accumulation and transfer (CAT)
- Recognition of prior learning (RPL)
- Evaluation of foreign qualifications
- Career guidance

Work

- Skills/ competencies in occupational/ professional standards
- Recruitment, job vacancies
- Matching job seekers' CV – job vacancies
- Job descriptions
- Performance appraisals
- In classifications / taxonomies of occupations and skills (ISCO, ESCO, O*Net)

Personal

- Description of experience
- CVs
- RPL portfolios

Learning outcomes in CBT – APC reforms Africa

- Competence-based training
- Approche par compétences

TVET
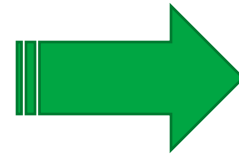
- Angola
- Cape Verde
- Cameroon
- Egypt
- Ethiopia
- Kenya
- Mauritius
- Morocco
- Mozambique
- Senegal

And others

ACQF
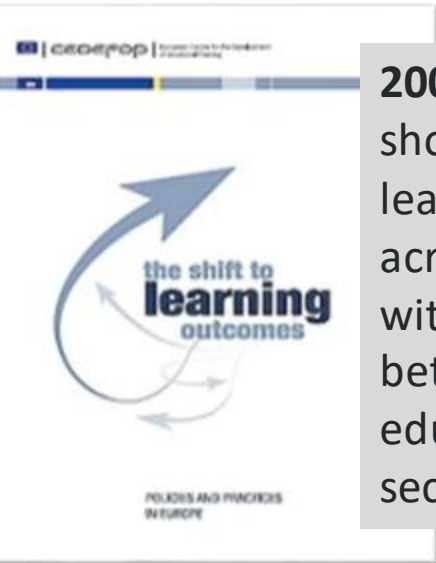
2009: Cedefop's study showed an overall shift to learning outcomes (2009) across Europe; although with clear differences between countries and education and training sectors
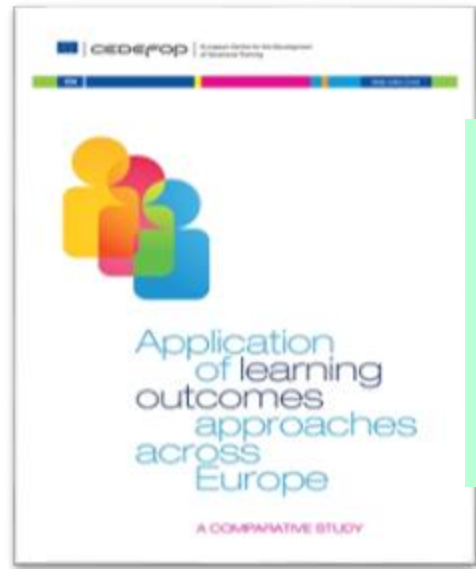
2016: Cedefop's study on learning outcomes (2016) demonstrated that the shift to learning outcomes is gaining speed and that differences between countries and education sectors are diminishing
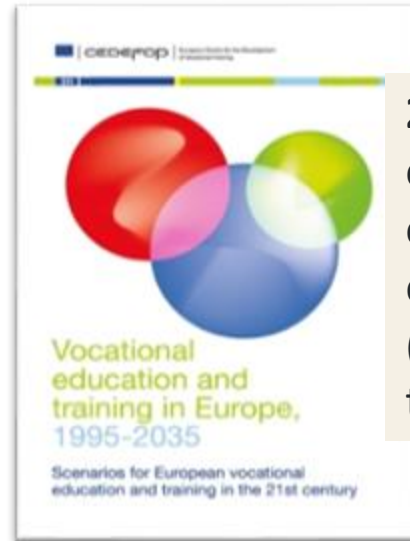
2020: Cedefop's study on the Changing role of vocational education and training (2020) confirms this tendency
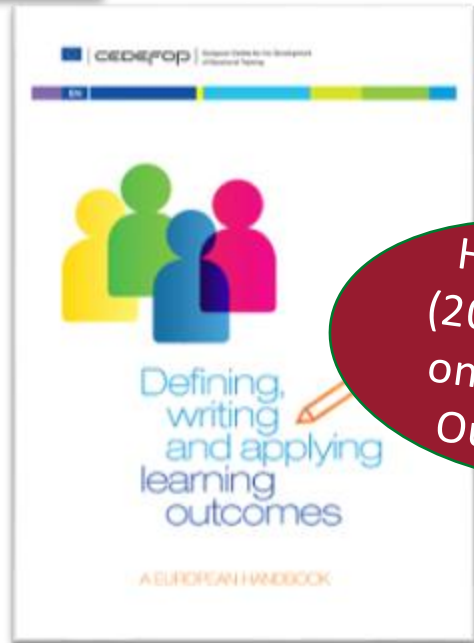
Handbook (2017, 2022) on Learning Outcomes

Adapted from Jens Bjornavold, ACQF peer learning webinar, 23 September 2021
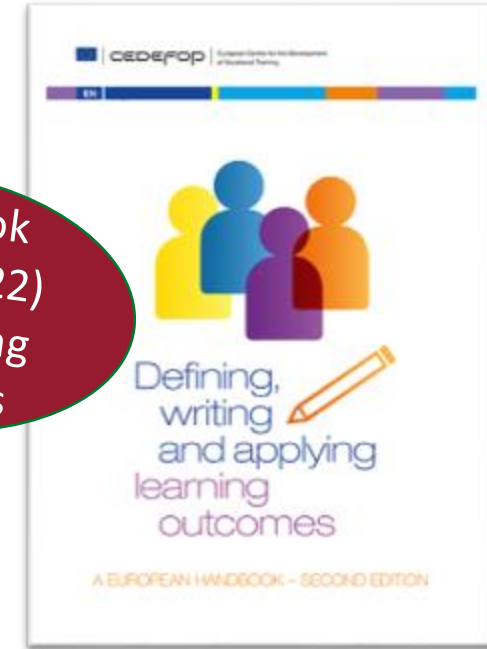
Question 1

In **which areas and contexts** are Learning Outcomes used in Somalia?

4.2.3. Some principles to writing learning outcomes

Some principles for writing learning outcomes statements (1)

ACQF

Learning outcomes statements are **verb-driven, learner-centred actions**

➢ start with an action verb, e.g. "organise"

➢ followed by the object of that verb, e.g. "administrative processes"

➢ followed by a phrase that provides the context, e.g. "for presentation to public entities"

Example: "Organise administrative processes for presentation to public entities"

Tip: Work backwards from what the learner is required to achieve

✓For every verb-driven learning outcome statement, teaching/ learning activities and different examples of assessments should flow logically from the verb of the statement

✓ Complicated, double-barrelled sentences should rather be split into more than one sentence to ensure clarity

✓ Learning outcomes' descriptions must be fit for purpose / suit the context (e.g.: level descriptors, qualifications standards, curricula, assessment…)

✓ Learning outcomes must be achievable within the time and the resources available

Subject benchmark statements

https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-social-work.pdf?%20sfvrsn=5c35c881_6#:~:text=This%20is%20the%20Subject%20Benchmark,the%20nature%20of%20the%20subject.

Learning outcome statements make explicit the nature of study and general subject-specific academic features and standards expected of graduates in specific subject areas, and what they are expected to know at the end of their studies.

They are written by subject specialists and function as subject-specific external reference points for designing, delivering and reviewing academic programmes.

They provide guidance but are not intended to prescribe approaches or curriculum.

Used extensively in QAA
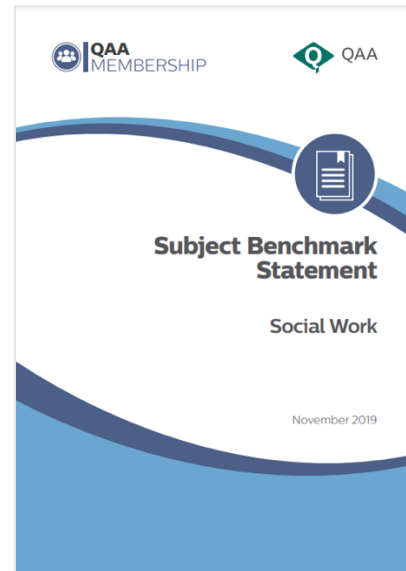
Source: QAA

1   Introduction

1.1   This Subject Benchmark Statement covers social work as an academic subject applied through professional practice. It sets out expectations concerning:

- the subject knowledge, understanding and skills of a qualifying graduate in social work
- the teaching, learning and assessment methods employed in their education.

1.2   The minimum academic standards required at the point of qualification. The scope of this Statement is higher education courses that constitute a qualifying degree in social work. This Subject Benchmark Statement fully acknowledges recent changes within the context of social work and its regulation across the UK. These changes include:

- the establishment of care councils as regulatory bodies in England, Scotland, Wales and Northern Ireland
- articulation of new rules and requirements governing social work education across the UK
- formal registration of social workers
- development of national occupational and capability standards for social work across the UK
- development of care standards, proficiency standards, codes of conduct and codes of practice.

1.3   While developments in policy and practice have led, in some countries, to a greater degree of specialisation, this Statement reflects the generic knowledge and skills required for the award of a social work degree as the preparatory qualification for practice across settings and 'client' groups. It recognises that the degree of specialisation offered within social work courses varies and evolves to reflect organisational and workforce requirements which develop in response to service user need.

1.4   This Subject Benchmark Statement reflects the complexity and rapidly changing nature of this context by including specific reference to the legislative, professional and institutional arrangements in England, Scotland, Wales and Northern Ireland. It also acknowledges the European and international context of social work and the desirability of mutual recognition of social work qualifications across the UK and more widely.

Tuning and Degree profiles

http://tuningacademy.org/wp-content/uploads/2014/02/A-Guide-to-Formulating-DPP_EN.pdf

The Tuning Africa project (Africa-EU, 2016) developed Degree programme profiles, with identified learning outcomes and blocks of competences that need to be achieved in order to obtain the Degree.

Please note that the Degree Profile should:

- be readable in five minutes;
- not be longer than two pages;
- provide a coherent impression of the specific degree; and
- be succinct and to the point, yet provide detailed information and references where necessary.

29

Title field of the Degree Profile

The title field contains basic information about the Degree.

DEGREE PROFILE OF

Please provide (in bold):
The **full name of the qualification** as written in the original language. When this is not English, please provide an official **English translation** as mentioned in the Diploma Supplement in *italics*.

Please provide the **official name of the programme** offered by the institution, in the original language.
Please provide also an official translation **in English (if applicable)** in *italics*.

TYPE OF DEGREE & LENGTH	Please identify the type of degree, e.g. whether the degree is the result of a programme offered by a single institution or whether the degree is the result of a joint programme (joint degree or double / multiple degree). Please indicate between brackets the length of the degree programme in ECTS-credits, and/or - if applicable - national/institutional credits and/or years of study.
INSTITUTION(S)	Please give the official name of the awarding institution(s), and the country where it is based (If the name is not in Latin Alphabet, please provide a transliteration or transcription. In addition, please provide also an official translation in English (if applicable) in italics
ACCREDITATION ORGANISATION(S)	Please identify the accreditation organisation(s) that provides the accreditation of the degree programme or the degree awarding institution, and the country in which the accreditation organisation operates.
PERIOD OF REFERENCE	Please identify the year(s) for which the curriculum is validated/approved.
CYCLE/LEVEL	Please indicate the cycle/level of the qualification in relation to the National Qualifications Framework (where available), the EQF for LLL and the QF for EHEA.

Tuning
Tuning Educational Structures in Europe

A Guide to Formulating Degree Programme Profiles
Including Programme Competences and Programme Learning Outcomes

4.2.4. Short, learning outcomes-based descriptions of qualifications Guidelines

Source: EQF Project

Key words: purposes and benefits of short descriptions

ACQF

Common principles

Comparability

Transparency

Improve the quality and reach of existing tools for sharing information

Easier use in e-registers & databases of qualifications

Minimise large differences in description of qualifications

Easy to grasp content and level

Quality

Used for full and part qualifications, micro-credentials

Purpose and benefits

- The reader of a short description (learners, employers, teachers, parents etc.) should be **able to grasp the content and level** of learning required to attain the qualification, allowing them to judge its relevance for further learning and/or employment.

- At national level, short descriptions can be used for information and communication purposes, notably **supporting qualifications frameworks and forming part of qualifications databases and registers**.

- At European and international level, for example through Europass and the EQF, these short descriptions facilitate **transparency and comparability of qualifications**.

Guideline: <u>Why</u> short descriptions of learning outcomes of qualifications (1)

- Transparency of qualifications is necessary to **reduce barriers to mobility for learning and work purposes and to support lifelong learning**. Qualifications databases/registers make qualifications transparent to a wider public.

- Full descriptions of national qualifications are developed according to national criteria and priorities and may refer to numerous specific learning outcomes.

- **Differences in the formulation of learning outcomes, for examples in terms of length, format, granularity, limits comparability of qualifications reduces the potential of digital tools for analysing, comparing or using information on qualifications.**

Guideline: Added-value of Short descriptions of learning outcomes of qualifications (2)

- To achieve comparability of qualifications, it is therefore key that learning outcomes of qualifications in national databases/registers are described in an **easily understandable and comparable way**.

- **Short and synthetic descriptions** of learning outcomes of qualifications have multiple benefits as they can be an entry point for individual learners or employers seeking information on particular qualifications. They can support better understanding of the content and profile of a qualification, going beyond just the title and the NQF level. They can be **translated more easily** compared to long descriptions of qualifications.

- Any actor responsible for defining and describing learning outcomes of qualifications can benefit from these guidelines when creating short descriptions of qualifications. Although their main focus **is on full qualifications, the guidelines are also of relevance for parts or units of qualifications, or micro- credentials**, as well as for short descriptions of learning outcomes of learning programmes.

Sum-up: Guideline on short descriptions of learning outcomes

ACQF

- To **promote common principles** and therefore a **consistent structure and approach** to develop short and synthetic descriptions of learning outcomes of qualifications for publication on qualifications databases and registers.

- Facilitates **transparency and comparability of qualifications from different sectors and countries**.

- Provide an opportunity to further **improve the quality and reach of existing tools for sharing information** on qualifications.

- Short descriptions of qualifications should allow national and international users and stakeholders (learners, employers, counsellors, parents, teachers, education and training providers, validation practitioners, etc) to **quickly understand the content and complexity** of learning.

ACQF
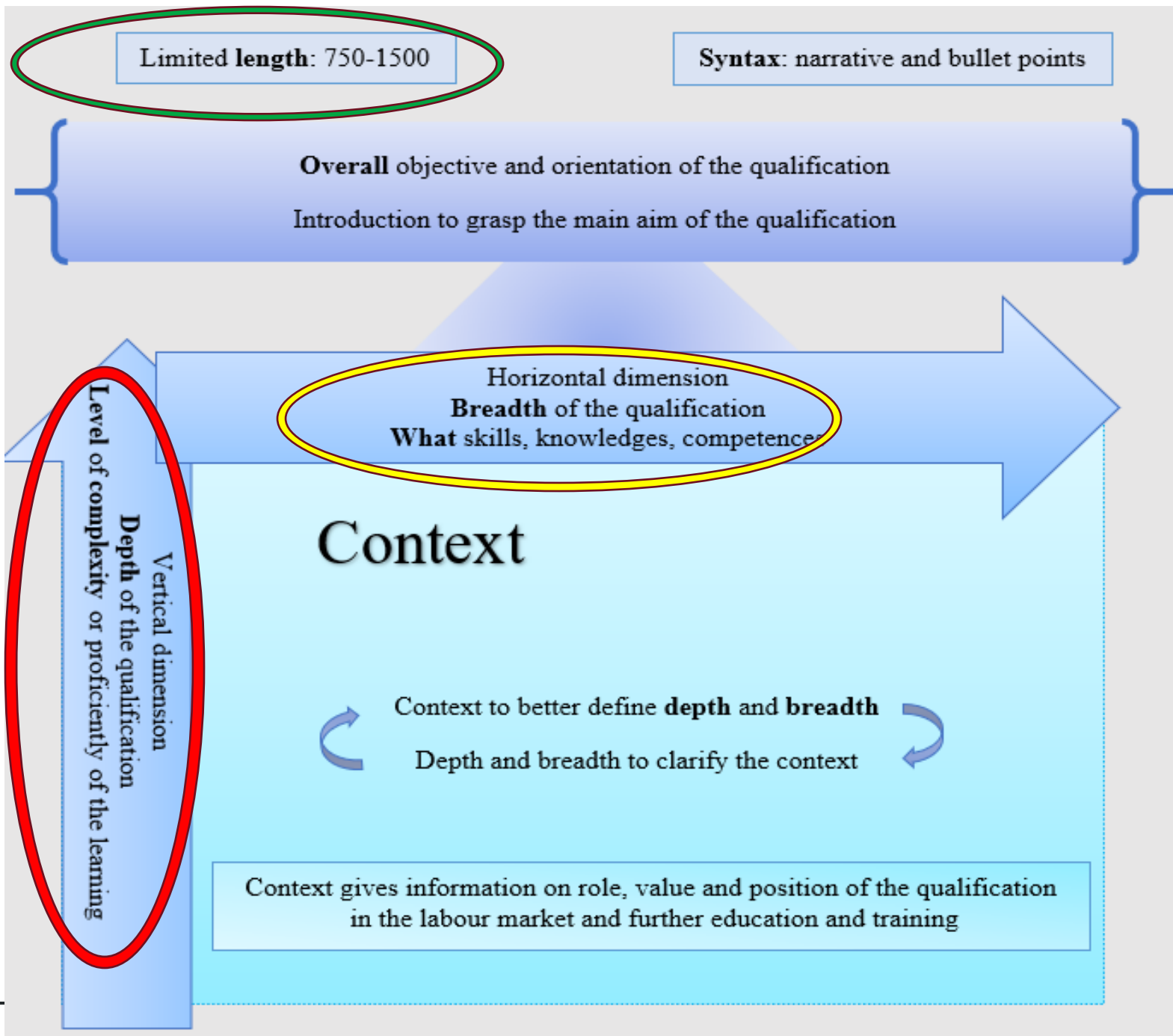
The Model of short descriptions of Learning Outcomes

Limited **length**: 750-1500

Syntax: narrative and bullet points

Overall objective and orientation of the qualification

Introduction to grasp the main aim of the qualification

Horizontal dimension
Breadth of the qualification
What skills, knowledges, competences

Vertical dimension
Depth of the qualification
Level of complexity or proficiently of the learning

Context

Context to better define **depth** and **breadth**

Depth and breadth to clarify the context

Context gives information on role, value and position of the qualification in the labour market and further education and training

Building blocks of the approach

- **Block A: Formal aspects**
  - A.1 Lenght of the description (750-1500 characters without space)
  - A.2 Format of the description (narrative summary + bullet points)

- **Block B: Content aspects**
  - B.1 Overall objectives and orientation of the qualification (in form of the narrative text)
  - B.2 The main learning outcomes (in the form of bullet points) to capture orientation, content and complexity of the qualification developed covering the following aspects:
    - B.2.1 Breadth/scope of learning acquired
    - B.2.2 Depth/complexity of learning acquired
    - B.2.3 Context information

Block A: formal aspects
A.1 Lenght
A.2 Format

Block B: content aspects
B.1 Objectives and orientation of qualification
B.2 Main learning outcomes
B.2.1 Breadth / scope of learning
B.2.2 Depth / complexity of learning
B.2.3 Context information

ACQF

Block A
Formal aspects
a) Length
b) Format

Formal aspects

A.1 Length

A.2 Format of the description

A.1 - Length

The description should stay in the range of 750 to 1500 characters (without space). This indicative length can provide sufficient space for capturing the essence of the qualification and it allows readers to quickly grasp its essential features. An indicative limit was set to ensure the description can be considered short.

A.2 – Format of the description

Describe the qualification using a combination of narrative and bullet points. The narrative should be used to present the overall objective and orientation of the qualification (aspect 3). Bullet points should be used to capture the specific learning outcomes (aspect 4)

Table 1. Structure and format of the short description (narrative and bullet points)

Narrative presenting the overall objectives and orientation of the qualification.	The holder of the qualification…….
Bullet points expressing learning outcomes	He/she is able to: 1) 2) 3) …

Source: EQF and Europass project group on short descriptions of learning outcomes of qualifications

Length

- **750 to 1500 characters (without space).**

  - This <u>indicative</u> length provides sufficient space for capturing the essence of the qualification and it allows readers to quickly grasp its essential features.

- The following points can guide this **process of shortening of a full description**:

  - ➢ Agree on what to emphasize and prioritize in the short description;

  - ➢ Focus on the core content of the qualification;

  - ➢ Pay attention to overlaps and redundancies in the text of the full description and merge/reorganise accordingly;

B1 - Overall objectives and orientation of the qualification in the form of a narrative

The description should start with a concise introduction in the form of a narrative expressing the overall objective and orientation of the qualification, including information on context ([13]). This should enable the reader to grasp the essence of the qualification and understand its role and position in relation to the labour market, education and training systems and/or society in general.

Table 2. Overall objective and orientation of the qualification

Narrative presenting the overall objective and orientation of the qualification.	The holder of the qualification…….
Bullet points expressing learning outcomes	He/she is able to: 1) 2) 3) …

Scope of learning

Block B

Block B.2.1

Verb – object - context

Concept definitions

Breadth/scope of learning means to clarify the *scope* of the learning acquired with the qualification, and therefore delimit and point to the borderlines and boundaries of the achieved learning outcomes. This means to convey information on the types of knowledge acquired as well as to describe the skills and competences mastered by the holder of the qualification. The learning domains (also called horizontal dimension of qualification frameworks) outlined in EQF/NQF level descriptors are a starting point to reflect on the breadth of learning ([15]). See also annex III.

Example: *The holder of the qualifications can compare and evaluate educational policy initiatives of EU countries to inform evidence-based decision-making.*

Example: *The holder of the qualification can select and apply the most innovative restoration technique to preserve and protect historical structures*

Example: *The holder of the qualification can install and repair wooden constructions for different residential and industrial building*

Comment: by carefully choosing the verbs ("compare and assess" "select and apply" "install and repair"), the object ("educational policy initiatives of EU countries" "innovative restoration technique" "wooden constructions") and by adding information on context ("to inform evidence-based decision-making" "to preserve and protect historical structures" "for different residential and industrial building); the knowledge, skills and competence acquired by the holder of the qualification – the breadth/scope of the learning – can emerge (knowledge on educational policy initiatives, techniques to conduct cross-country comparison and policy evaluation or restoration of historical structures; practical skills related to installing and repairing, etc).

Level of complexity

Depth/complexity of learning is about clarifying the complexity and sophistication of learning acquired. In fact, within the same learning domain (e.g., theroretical knowledge or practical skills) there can be varying degree of expertise achieved. The EQF/NQF level descriptors are a starting point to define the depth and complexity of learning ([16]).

Block B.2.2

Verb – object – qualifier - context

Example: *the holder of the qualification can autonomously select and apply the most suitable research tools for collecting empirical evidence in the field of marine biology.*

Example: *the holder of the qualification can collect empirical evidence under supervision contributing to ongoing studies in the field of marine biology.*

Comment: by carefully choosing the verbs ("select and apply" "collect"), the object ("research tool" "empirical evidence") and making use of qualifier "autonomously" and by adding information on context ("for collecting evidence" or "supporting studies in the field of marine biology") it can emerge the level of complexity of the learning acquired.

Block B

Information on context completes the definition of breadth and depth of learning outcomes

Block B.2.3

Information on context: when writing the specific learning outcomes sentences in the form of bullet points, information on context serves to specify the learning outcomes acquired. To support this process these guidelines also provide recommendations on the syntactical structure of sentences expressing learning outcomes (see table 3). In addition to verbs and objects composing a basic sentence, additional information on context serve to provide further details, for example, on situations, methods and conditions. In fact, verbs or objects alone are not sufficient to capture the breadth and depth of learning outcomes. At the same time, information on context can help clarify the role and the position of the qualification in relation to the labour market, education and training and society in general. This last aspect should already emerge in the narrative presenting the overall objectives and orientation of the qualification (B1).

Overall objective and orientation of the qualification - B.1

Guiding questions:
- What can the qualification be used for in the labour market, in education and training and/or society in general?
- Which core knowledge, skills and competence acquired are held by the holder of the qualification?
- What is expected in terms of autonomy and responsibility?

In the form of narrative text

Description of the main learning outcomes to capture orientation, content, and level of the qualification - B.2

In the form of bullet points

The three aspects should interact and not be treated separately or applied rigidly

Breath/scope of learning

B.2.1 (horizontal dimension)

- Delimit, specify, and link knowledge, skills, competences (starting point NQF/ EQF descriptors)
- Reflect on the balance between, for example, general, basic and technical knowledge, analytical, technical, practical skills and transversal skills and competences

Depth/complexity of learning

B.2.1 (vertical dimension)

Show the level of complexity through a careful section of actions verbs and objects; provide information on context; use precise adjectives and adverbs sparingly

Context B.2.3

Double function:

- Better contextualise/specify the sentence's verb and object, providing for instance information on where the learning can take place, situations, conditions and expectations on autonomy → This can enhance clarity on the depth/complexity of learning as well as the breadth/scope of learning.

- Offer insights into the qualification's role in the labour market, education and training or society in general → This aspect should be already covered in the introductory narrative

Guiding questions:
- What is the holder of the qualification expected to know and with what level of proficiency?
- What is the holder of the qualification expected to be able to do and with what level of proficiency?
- What is expected from the holder of the qualification in terms of wider, transversal skills and competences?
- What is expected from the holder of the qualification – for example as regards ability to work autonomously and taking responsibility?

Supporting documents: Annex with action verbs and qualifiers (adjectives and adverbs)

Formal aspects of the description
Length – A.1: 750 - 1500 characters (without spaces)
Format A2: Narrative text and bullet points

Basic structure of learning outcomes statements

Subject	Action verb (and adverb if relevant)	Object of the verb (and adjective if relevant)	Context (and adverb/adjective if relevant)
The learner…	is expected to present	in writing the results of the risk analysis	allowing others to follow the process and replicate the results.
The learner…	is expected to distinguish between…	the environmental effects…	of cooling gases used in refrigeration systems.
The learner…	is expected to coordinate	activities of the executive staff	on construction sites with *limited complexity*
The learner…	is expected to conduct	*advanced* financial projections	by using business planning tools and to support financial and business planning

Source: project group and Cedefop (2022). *Defining, writing and applying learning outcomes: a European handbook - second edition.* Luxembourg: Publications Office of the European Union.

Verts

Action verbs extracted from national qualifications and other material provided and analysed in the context of the EQF-EUROPASS project group on short learning outcomes descriptions ([22])

Broad/general action verbs					
use	perform	finish	define	take	satisfy
work	set	consider	allow	act	take on
carry out	keep	note	bring	do	deal with
make	proceed	put	determine	take into account	
give	fill	act	possess	show	

Precise action verbs					
apply	accept	construct	initiate	shape	correct
check	lead	resolve	organise	enforce	estimate
identify	configure	eliminate	acquire	serve	learn
prepare	adjust	consult	self-evaluate	calculate	pack
demonstrate	optimize	conclude	reproduce	replace	deliver
develop	collect	find	guide	summarize	observe
analyse	rebuild	initiate	dismount	establish	handle
produce	comply with	count	accompany	support	test
communicate	supervise	divide	realise	intervene	repair
participate	manufacture	direct	react	disassemble	report
process	meet	repeat	remedy	cooperate	sell
plan	receive	guide	anticipate	return	look up
implement	recognize	expose	mount	assure	conduct
install	formulate	program	employ	transfer	standardize
respect	complete	explain	limit	elaborate	structure
integrate	update	draft	stake out	justify	insert
maintain	document	promote	assist	negotiate	fulfil
describe	disseminate	reflect	refine	visualise	assess
monitor	measure	assess	design	compare	set up

manage	read	propose	compile	decide	connect
select	assemble	collaborate	calibrate	delegate	sketch
present	advise	respond	extract	follow up	improve
follow	build	adapt	write	examine	share
present	store	master	rehabilitate	detect	combine
ensure	coordinate	inform	look after	sell	specify
prevent	commission	solve	obtain	dismantle	exchange
create	evaluate	explore	administer	synthesise	indicate
process	organise	draw	synthesise	modify	verify
place	choose	adopt	take part	renovate	consolidate
provide	include	undertake	interpret	allocate	supply
take stock	validate	approve	relate	transform	execute
involve	mobilise	reorganise	protect	judge	conceptualise
lead	search	instruct	introduce	accomplish	critique
oversee	revise	run	research	diagnose	restore
experiment	validate				

Verbs (cont.)

Examples of combination of actions verbs with same object that can show increasing complexity → make reference to chapter	
Design and implement	Store and maintain
Implement and document	Manage and process
Assure and document'	Identify and initiate
Install and configure	Identify and prevent
Install and check	Identify and monitor
Assemble and install	Identify and propose
Organise and check	Pack and deliver
Construct and check	Assemble and insert
Check and comply with	Prepare, identify and explain
Plan and organise	Plan, prepare and implement
Plan and sketch'	Coordinate, prepare and look after
Plan and implement	Monitor, plan and report
Measure and analyse	Develop, create and support
Analyse and manage	Develop, write and evaluate
"Analyse and compare"	Implement, integrate and check
Interpret and apply''	Analyse, remedy and maintain
Inform and advise"	Look up, analyse and assess
Advise and guide	Demonstrate, integrate and apply
Cooperate and communicate	Identify, select, analyse
Communicate and negotiate	Analyse, evaluate and improve
Prepare and conclude	Lead, supervise and respond
Prepare and compile	Coordinate, direct and adjust
Undertake and organise	Build, install, rebuild, maintain and rehabilitate
Produce and present	Mount, assemble, disassemble and dismount
Develop and adjust	

Verbs (cont.)

Ambiguous and precise verbs - Cedefop Handbook on learning outcomes ([21])

Ambiguous		Precise	
Know	Grasp the significance of	Distinguish between	Write
Understand	Become familiar with	Differentiate	Recite
Enjoy	Believe	Assemble	Construct
Determine	Be aware of	Adjust	Contrast
Appreciate	Comprehend	Identify	Compare
		Solve	List

Qualifiers

Examples of qualifiers extracted from level descriptors of national qualifications frameworks of countries referenced to the EQF [23].

Examples of broad/general qualifiers		
Certain	Key	Appropriate/appropriately
Relevant	Particular/particularly	Suitable/suitably
Very	Broad/Broadly	Successful/successfully
Various	Proper/properly	Usual/usually
Good	Effective/effectively	Important/importantly
Required	Wide/widely	

Qualifiers (cont.)

Example of qualifiers (adverbs or adjectives) that can support in conveying levels of complexity		
Basic	Advanced	Complete/completed/completely
Familiar	Intermediate	Complex/complicated
Simple	Autonomous/autonomously	Innovative/innovation/innovatively
Repetitive	Creative/creatively	Management/managerial
Structured	Independent/independently	Original/originality
Defined	Specialised/specialist	Substantial
Routine	New/novel	Responsible/responsibly
Elementary	Critical/critically	Strategic/strategically
Assigned	Comprehensive	Unforeseeable/unforeseen
Integrated	Non-routine	Conceptual/conceptually
Non-specialised	Unpredictable	Predictable/predicably
Limited	In-depth	Partially/partial/partly
Everyday/daily/day-to-day	Predefined/predetermined	Sophisticated

Examples

Examples of short learning outcomes-based descriptions of qualifications

- The following "role examples" of short description aim to provide a **practical application of guidelines and to make it clear how the guidelines can be implemented**. They are built upon real national descriptions developed using the guidelines within the project group's context and have undergone collective adjustments and revisions by members of the project group to better align them with the guideline recommendations.

- It is important to acknowledge **that developing the perfect description is a challenging task**, as different countries may wish to emphasise different aspects and may need to find a balance with existing national criteria. Therefore, the following examples should be considered as part of an ongoing cooperative effort to develop and apply guidelines for learning outcomes descriptions aimed at improving transparency and comparability of qualifications. With experience, continuous collaboration and exchanges on the guideline's application across countries and sectors, additional examples will be added to further inform the process.

EQF 7

Qualification: Clinical psychologist
The clinical psychologist (EQF/NQF 7) independently develops and applies the theories, methods and techniques from scientific clinical psychology in the health promotion, screening, psychological diagnostics and evaluation of health problems, as well as in the prevention, guidance and treatment of persons with care or support needs. By doing so the health care users are supported from the start both by working on their development as well as optimising their functional independence and wellbeing. Holding the visa of clinical psychologist as determined in the Law on Mental Health Professions is a prerequisite to perform the profession.
The clinical psychologist is able to: • draw up a psychological evaluation • apply interventions to relieve suffering and to promote health and wellbeing of individuals, groups and organisations • generate research and findings that contribute to the professional knowledge and/or evaluates the efficiency of diverse professional activities • integrate research and clinical expertise in coordination with the care user and the context • apply scientific insights and methods • act according to the code of ethics • develop and maintain a professional working relation with the care user • practice the profession in a professional and societally responsible way • develop and maintain own expertise • reflect, carry out self-evaluation and self-care • interact with professionals from multiple disciplines

Example 2

EQF 4

Qualification: Information technology assistant
The qualification holder (EQF/NQF 4) is able to ensure the smooth running of IT systems. They can develop, adapt and/or maintain these and look after users. He/she has practical knowledge from computer science, electrical engineering and production engineering.   He/she works independently and/or as part of a team in companies that develop and offer information and communication technology products and services or in public authorities and institutions.   This is a school based initial vocational training. Optionally, the higher education entrance qualification can be acquired.
The qualification holder can   • analyse, assess and optimise operational processes, workflows and framework conditions with regard to the use of IT systems   • design work processes using technical and organisational aids   • develop and adapt application software for operational processes   • analyse, plan, build, commission and network IT systems   • analyse, build, connect to IT systems, programme and commission automation systems,   • plan, create and maintain databases using appropriate programming languages and software development tools   • secure the energy supply for IT systems and optimise energy consumption   • observe industry and legislative standards and regulations and use of technical rules and regulations   • observe data security, data protection and copyrights   • responsibly shape and reflect on his/her working environment and processes   • apply standards and guidelines to ensure process and product quality   • cooperate and communicate in teams   • analyse customer requirements and advise customers also in English   • obtain, prepare and present information and documents in English in relation to the activity

EQF 4

Qualification: Concrete work
The concrete profession (EQF/NQF 4) can plan formwork, reinforce and cast new building and construction structures, as well as maintaining existing buildings. The holder of the qualification is able to build homes, commercial buildings, hospitals, schools and dams. The qualification can be obtained following a four-year dual training in the training company and vocational school. Competence can be further expanded with tertiary vocational education at EQF 5.
The qualification's holder is able to • work independently according to building information models, drawings, descriptions and prefabricated solutions • assess the costs, time consumption and environmental impact of the work • formwork constructions and building parts using traditional and system formwork • reinforce constructions and building parts according to descriptions for covering, anchoring and splice • give account for work processes using prefabricated and traditional methods • cast different structural parts and floors and assess the consequences of different casting pressures • sort and handle waste according to current regulations, reuse materials and reflect on the consequences of incorrect handling • account for and use quality assurance systems, carry out work in line with current requirements for health, environment and safety and reflect on the consequences of not following the requirements • assess risks in accordance with current regulations and carry out a safe job analysis. • work according to regulations and agreements that regulate working conditions in the profession, and explain the duties and rights of the employer and the employee. • reflect on the demands and expectations placed on an equal and inclusive professional community

Question

What are your views on this approach? What are the most relevant take aways for your work?

➢ Please write in chat box. Thanks

4.2

Learning outcomes: some issues and solutions

ACQF

Issues	**Ways to address them**
"Avoid dumbing down": Too detailed and prescriptive statements can undermine and lead to a 'dumbing down' of the learning and assessment process	Learning outcomes, written as threshold statements, do not prevent learners to go beyond these thresholds/ minimum expectations
Be aware of contradictions and tension especially between schools of thought:	Learning outcomes need to defined and written in a way which allows for local adaptation and interpretation by teachers and learners
Behaviouristic tradition: • Emphasise learning outcomes as measurable, result oriented, full-ended to prescribe and control learning • Clearly observable and measurable	Learning outcomes should assist teachers in identifying and combining teaching methods. Learning outcomes orient a learning process, they should not restrict it
Constructivist approach • emphasise learning outcomes to be process-oriented, open-ended to enable learning • Limited measurability	Finding the balance between prescriptive and descriptive learning outcomes is essential Ensure learning outcomes are fit for purpose

Adapted from Jens Bjornavold, ACQF peer learning webinar, 23 September 2021

Easing the application of level descriptors

Application of learning outcomes-based level descriptors can be challenging.

Understanding the role, concepts, vertical and horizontal logic of NQF level descriptors is fundamental, and should be a theme in every teacher training programme, in the curricula of pedagogical institutes and in relevant capacity development programmes promoted by ministries, NQF institutions, and curriculum development projects. Level descriptors are a fundamental link between the NQF and the eco-system of learning, teaching, and certification.

To ease use and application, level descriptors should:

o   Be detailed enough to capture the complexities of an NQF/ RQF
o   Be general enough to accommodate different parts of the qualifications systems
o   Be suitable for all contexts (not too academic, theoretical, and wordy)
o   Explain the logic of the domains, sub-domains, and levels preferably with an accompanying glossary
o   Be consistently applied in countries
o   Be made visible and accessible to users through training, capacity building, workshops, and information sessions
o   Capture the balance between being prescriptive and being descriptive

4.2

Learning outcones: Examples from real / existing qualifications

Qualifications from official online registers of qualifications

Countries: Botswana, Cape Verde, Mozambique, South Africa

In qualifications and in qualifications databases / registers

Examples:

- Botswana
- Cape Verde
- Mozambique
- South Africa

Online Registers of National Qualifications

- Botswana: BQA: Register of registered qualifications
- Cape Verde: UC-SNQ National Catalogue of Qualifications
- Mozambique: ANEP – National Catalogue of Professional Qualifications
- South Africa: SAQA: Registration of Qualifications and Part-Qualifications (4 searchable databases)

Level descriptors: example

ACQF

- Linked to an NQF level

- What is expected of graduates / holders of a qualification at that level

<u>Example: Cape Verde NQF, level 5</u>

Domain: <u>Responsibility and autonomy</u>

- Manage and supervise in contexts of study and work susceptible to unpredictable change

- Revise and develop performance of self and others, both in quantitative and qualitative terms

- Work independently when decisions or initiatives at intermediate level are required

- Be able to organise the work for self and the team, according to the objectives and goals of the organisation and support others to effectively manage time

Source: Cape Verde level descriptors and National Qualifications Catalogue

Level descriptors in Cape Verde NQF, level 5. ACQF Inventory	Qualification level 5: AGE001_5: Accounting management. Qualification registered in the National Qualifications Catalogue: Cape Verde, NQF Level 5 AGE001_5
Knowledge: Comprehensive, specialised, factual and theoretical knowledge within a field of study or work and an awareness of the boundaries of that knowledge, which includes abstract technical understanding and capacity to search additional information and knowledge to improve the execution of functions. Skills: A comprehensive range of cognitive and practical skills required to develop creative solutions to abstract problems in routine situations and new contexts and activities. Capacity to select and apply equipment and methods, explain the alternatives, and ensure the technical support to solve more specific problems in known routines. Responsibility and autonomy: Manage and supervise in contexts of study and work susceptible to unpredictable change. Revise and develop performance of self and others, both in quantitative and qualitative terms. Work independently when decisions or initiatives at intermediate level are required. Be able to organise the work for self and the team, according to the objectives and goals of the organisation and support others to effectively manage time.	Broad short definition of the qualification: Carry out accounting, tax, financial and treasury control management in organisations and prepare administrative processes for presentation to public institutions, handling specific information and information management applications. Units of competency: • Carry out accounting and tax management • Carry out financial management • Carry out treasury management and control • Organise administrative processes for presentation to public entities • Handle office computer applications. Each "Unit of competency" is defined through a range of four to seven more granular "Elements of competency", which in turn are specified in greater detail by "Assessment criteria". This approach to describing the learning outcomes of the qualification cascades from the broad definition of the qualification to the granular outcomes applied as criteria in the context of assessment. A similar approach is applied in the context of the Competency-Based Approach (Approche par Competences) implemented with some variation in TVET systems of several countries in Africa, e.g.: Cape Verde, Cameroon, Kenya, Morocco, and Mozambique.

Table 16. **Principles supporting the presentation of learning outcomes**

The learning outcomes description should be 500 to 1 500 characters and be written considering the following elements			
It should present the qualification from the perspective of the learner and what he/she is expected to know, be able to do and understand.	It should use action verbs to signal the level of learning expected, normally with an (explicit or implicit) reference to the levels of the national qualifications framework and/or the EQF.	It should indicate the object and scope of the expected learning outcomes. This description should capture the main orientation of the qualification and the depth/breadth of the expected accomplishment. It can, if deemed appropriate, use domains as defined by NQFs/EQF.	It should clarify the occupational and/or social context in which the qualification operates.

Source: Cedefop.

Table 17 illustrates how the structure could be used in practice.

Table 17. **Example of presenting learning outcomes**

The learner	The verb	The object and scope	The context
A master of occupational therapy science…	• has insight into	• the organisation of health care	at regional, national and international level
	• can critically test	• these insights in the field	from the perspective of the principles of management and quality assurance of therapeutic interventions
	• can give advice	• on policy for the organisation and progress of occupational therapy	
He/she…	• is able to take responsibility		

To be presented in summary (414 characters)

A master of occupational therapy science has insight into the organisation of health care at regional, national and international level and can critically test these insights in the field and give advice on policy. He/she is able to take responsibility for the organisation and progress of occupational therapy from the perspective of the principles of management and quality assurance of therapeutic interventions

Source: Cedefop.

Source: Cedefop, 2017, p64

Ex.: Cape Verde, Accounting Management, L5

Qualificação **AGE001_5**
GESTÃO CONTABILÍSTICA

PERFIL PROFISSIONAL			
Código	AGE001_5	**Denominação**	GESTÃO CONTABILÍSTICA
Nível	5	**Família Profissional**	Administração e Gestão

	COMPETÊNCIA GERAL	Realizar a gestão contabilística, fiscal, financeira e o controlo da tesouraria nas organizações e preparar processos administrativos para apresentação às instituições públicas, manuseando aplicativos informativos específicos e de gestão de informação.	

N.º	Denominação	Código
1	Realizar a gestão contabilística e fiscal.	**UC195_5**
2	Realizar a gestão financeira.	**UC196_5**
3	Realizar a gestão e controlo da tesouraria.	**UC197_5**
4	Organizar processos administrativos para apresentação às instituições públicas.	**UC198_4**
5	Manusear aplicativos informáticos de escritório.	**UC199_3**

Âmbito profissional:
É um profissional que executa o seu trabalho por conta própria ou por conta

SISTEMA NACIONAL DE QUALIFICAÇÕES

Qualificação Profissional
GESTÃO CONTABILÍSTICA
AGE001_5
Família Profissional Administração e Gestão

Qualificação **AGE001_5**
GESTÃO CONTABILÍSTICA

PROGRAMA FORMATIVO DA QUALIFICAÇÃO PROFISSIONAL			
Código	AGE001_5	**Denominação**	GESTÃO CONTABILÍSTICA
Nível	5	**Família Profissional**	Administração e Gestão
Duração indicativa	1.360 Horas		

	N.º	Denominação	Código
Unidades de competência	1	Realizar a gestão contabilística e fiscal.	UC195_5
	2	Realizar a gestão financeira.	UC196_5
	3	Realizar a gestão e controlo da tesouraria.	UC197_5
	4	Organizar processos administrativos para apresentação às instituições públicas.	UC198_4
	5	Manusear aplicativos informáticos de escritório.	UC199_3

Ex.: Mozambique, Accounting, L5

http://www.anep.gov.mz/Portals/0/29-CV5%20Contabilidade.pdf

1   Informação para o Registo da Qualificação

Titulo da Qualificação:	Certificado Vocacional de Nível V em Contabilidade		
Código Nacional:	Q ADG02500191		
Campo:	Administração e Gestão	Subcampo:	Contabilidade
Nível do QNQP:	5	Créditos totais:	120
Data do registo:		Data do revisão:	
Progressão:	Os graduados com esta qualificação serão elegíveis para trabalhar no sector empresarial público e privado, assistindo o Chefe do Departamento de Administração e Finanças, podendo ainda assumir a responsabilidade pela liderança do departamento de contabilidade, numa pequena organização ou a direcção geral de uma micro empresa. Os técnicos com esta qualificação poderão progredir para o ensino superior.		

Regras de combinação de módulos

Módulos de habilidades genéricas: O candidato deve completar um mínimo de 16 créditos.
Módulos de habilidades vocacionais obrigatórios: O candidato deve completar um mínimo de 84 créditos.
Projecto Integrado e Experiência de Trabalho: O candidato deve completar o mínimo de 20 créditos

Conteúdo da Qualificação
Módulos constantes nesta Qualificação

Código do Módulo	Código da Unidade de Competência relacionada	Título do Módulo	Número de Créditos	Número de Horas Normativas
		Módulos de Habilidades Genéricas		
MO HG025001	UC HG025001	Utilizar o Inglês para propósitos sociais, pessoais e profissionais	**2**	**20**
MO HG025002	UC HG025002	Comunicar informação relacionada com a profissão	**2**	**20**
MO HG025003	UC HG025003	Ler e responder a materiais escritos	**2**	**20**
MO HG025004	UC HG025004	Produzir materiais escritos	**2**	**20**
MO HG03501171	UC HG03501171	Resolver problemas de crescimento logarítmico.	2	20
MO HG03502171	UC HG03502171	Resolver problemas de optimização usando limites e derivadas.	2	20
MO HG04501191	UC HG04501191	Participar num debate como orador principal e como interveniente	2	20
MO HG04502191	UC HG04502191	Interpretar e produzir textos explicativos e informativos	2	20
		Total	**16**	**160**

Módulos de Habilidades Vocacionais Obrigatórios

MO ADG025001191	UC ADG025001191	Operar com a contabilidade da Banca, Seguros e Instituições sem fins lucrativos	12	120
MO ADG025007191	UC ADG025007191	Sistematizar a informação para apoio à tomada de decisão	12	120
MO ADG025008191	UC ADG025008191	Avaliar alternativas rotineiras e não rotineiras numa empresa	6	60
MO ADG025009191	UC ADG025009191	Aplicar regulamentação, procedimentos e técnica de auditoria externa	6	60
MO ADG025005191	UC ADG025005191	Elaborar o orçamento e apurar os desvios orçamentais	8	80
MO ADG025010191	UC ADG025010191	Utilizar instrumentos de controlo de gestão	4	40
MO ADG014005191	UC ADG014005191	Aplicar os procedimentos de Higiene e Segurança no Trabalho	4	40
MO ADG025004191	UC ADG025004191	Analisar procedimentos de controlo interno e elaborar parecer de auditoria interna	4	40
MO ADG025002191	UC ADG025002191	Realizar a análise económico financeira	8	80
MO ADG025003191	UC ADG025003191	Realizar a análise de projecto de investimento	8	80
MO ADG025006191	UC ADG025006191	Aplicar técnicas de angariação e avaliação de alternativas de financiamento	8	80
MO ADG035001191	UC ADG035001191	Organizar e zelar por espaços e equipamentos de trabalho	2	20
MO ADG025011191	UC ADG025011191	Aplicar os procedimentos de Ética do profissional de Contabilidade	2	20
		Subtotal	**84**	**840**

Projecto Integrado e Experiência de Trabalho

MO ADG025012191	UC ADG025012191	Elaborar Projecto Integrado	4	40
MO ADG025013191	UC ADG025013191	Levar a cabo uma experiência de trabalho	16	160
		Sub-total	**20**	**200**
		TOTAL	**120**	**1200**

Left Document

BQA NCQF Qualification Template

DNCQF.FDMD.GD04   Issue No.: 01

QUALIFICATION SPECIFICATION					SECTION A
QUALIFICATION DEVELOPER	Imperial School of Business and Science (ISBS)				
TITLE	Diploma in Tourism Management		**NCQF LEVEL**		6
FIELD	Services	**SUB-FIELD**		Tourism Management	
New qualification	☑		Review of existing qualification		
SUB-FRAMEWORK	General Education		TVET	Higher Education	☑
QUALIFICATION TYPE	Certificate		Diploma	☑	Bachelor	
	Bachelor Honours		Master		Doctor	
CREDIT VALUE				360 Credits	

RATIONALE AND PURPOSE OF THE QUALIFICATION

Rationale

The field of Tourism Management is crucial in developing countries such as Botswana. The government's long-term strategy to create a SADC tourism hub will require people who can communicate at all levels of the tourism industry. Tourism is the core strength of the Botswana economy and this qualification will prepare the youth of Botswana to create, lead and help grow the tourism industry

Human Resource Development Council (HRDC) has identified 12 key sectors of economy, which are derived from the national strategies and priorities such as the Economic Diversification Drive in Botswana. Tourism Management is an identified crucial field under Business Commerce and Management Sectors, which demonstrates the need of this qualification in Botswana, (BHRDS Fair and Career Clinics 2018. Pages 144-150).

According to the National Development Plan (NDP) II, April 2017- March 2023 (p.126.S.6.196),"Tourism continues to be a key sector in diversifying Botswana's economy. Some of the Key programmes, which will continue to be implemented included tourism, cluster development, product development and diversification of programme...".

The stakeholder survey undertaken, also revealed the fact that Tourism Management qualifications were needed in the Botswana market currently.

Purpose of the Qualification

The Purposes of this Qualification are to equip students with skills and knowledge to

Right Document

BQA NCQF Qualification Template

DNCQF.FDMD.GD04   Issue No.: 01

QUALIFICATION SPECIFICATION		SECTION B
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**	
On successful completion of the qualification, the learners shall be able to: Display skills in conducting events.	Learners ability to • Explain the essential logistics and transport arrangements for conducting tourism events • Demonstrate the kinds of duties and responsibilities to be delegated to the group members to conduct tourism events. • Explain how to monitor the progress of the events.	
Communicate effectively.	• Speak effectively and persuasively with national and international clients. • Write business letters to national and international clients to facilitate good service. • Prepare reports following company policy guidelines.	
Demonstrate the skills in preparing budget for tourism management events.	• Prepare a cost analysis sheet. • Prepare the budget for conducting tourism events. • Record the day to day financial transactions of the tourism activities.	
Conduct tour guide operations for national and international clients.	• Explain the needs and wants of the national and international clients. • Facilitate accommodation for the tourists of their interest. • Demonstrate the ability to supervise tour guide operations. • Identify the legal and health issues pertaining tourism operations with respect to country to country • Explain how to assess the climatic changes and the time differences pertaining tour guide operations. • Identify the cultural differences and Explain how it affects the international tourists.	
Integrate technology in travel, tourism and hospitality management sectors for effective marketing, and customer service.	• Use Technology, ▪ To reserve travel arrangement ▪ To book accommodation arrangements • Explain the advantages of the following in the Travel, tourism industry, ▪ Internet ▪ Reservation system ▪ Mobile phone ▪ In-Room Technology.	

https://online.bqa.org.bw/~gG6Ug   BQA, Register of Qualifications

ACQF

SOUTH AFRICAN QUALIFICATIONS AUTHORITY

REGISTERED QUALIFICATION:

Advanced Diploma in Logistics

SAQA QUAL ID	QUALIFICATION TITLE			
101960	Advanced Diploma in Logistics			
ORIGINATOR				
University of Johannesburg				
PRIMARY OR DELEGATED QUALITY ASSURANCE FUNCTIONARY			**NQF SUB-FRAMEWORK**	
CHE - Council on Higher Education			HEQSF - Higher Education Qualifications Sub-framework	
QUALIFICATION TYPE	**FIELD**		**SUBFIELD**	
Advanced Diploma	Field 11 - Services		Transport, Operations and Logistics	
ABET BAND	**MINIMUM CREDITS**	**PRE-2009 NQF LEVEL**	**NQF LEVEL**	**QUAL CLASS**
Undefined	120	Not Applicable	NQF Level 07	Regular-Provider-ELOAC
REGISTRATION STATUS		**SAQA DECISION NUMBER**	**REGISTRATION START DATE**	**REGISTRATION END DATE**
Reregistered		SAQA 091/21	2021-07-01	2023-06-30
LAST DATE FOR ENROLMENT		**LAST DATE FOR ACHIEVEMENT**		
2024-06-30		2027-06-30		

In all of the tables in this document, both the pre-2009 NQF Level and the NQF Level is shown. In the text (purpose statements, qualification rules, etc), any references to NQF Levels are to the pre-2009 levels unless specifically stated otherwise.

This qualification replaces:

Qual ID	Qualification Title	Pre-2009 NQF Level	NQF Level	Min Credits	Replacement Status
83908	Bachelor of Technology: Logistics	Level 7	Level TBA: Pre-2009 was L7	120	

PURPOSE AND RATIONALE OF THE QUALIFICATION

Purpose:
The purpose of this qualification is to make provision for the development of intellectual knowledge and applied competence related to procurement, logistics processes and practices, project management, logistics research, global supply management and quantitative techniques.

The inclusion of research methodology and a research project module, as well as a practical module in which learners will be required to apply their acquired theoretical knowledge to current industry-related challenges. This qualification offers students the opportunity to balance theory, research and practical application in their learning experience.
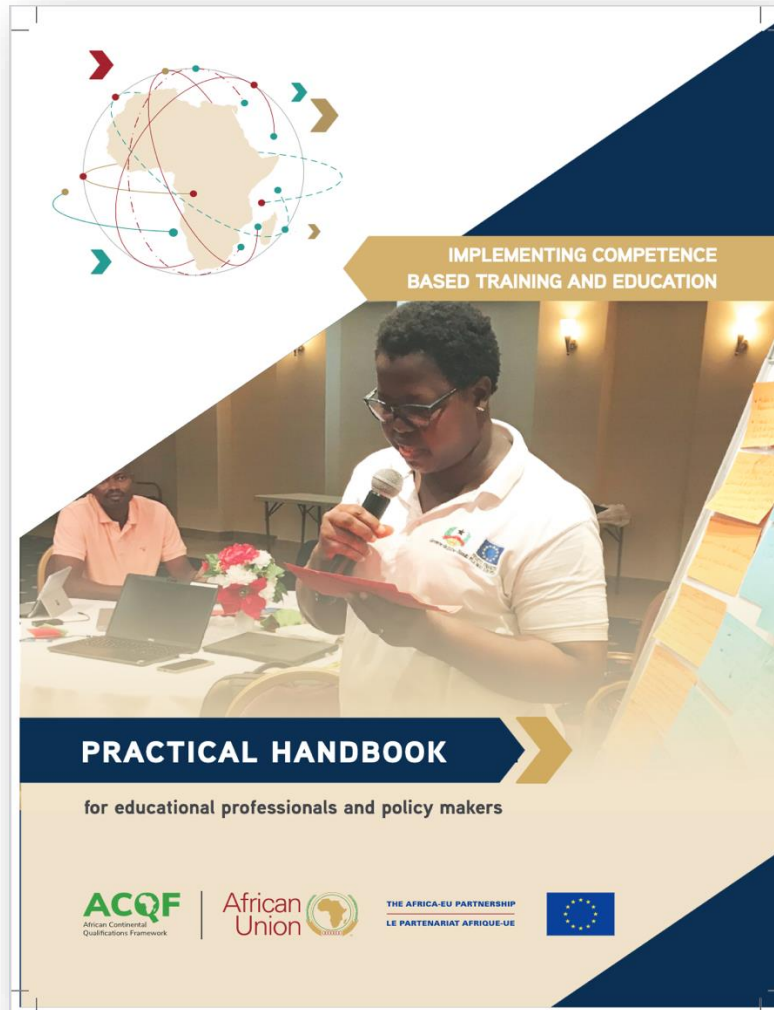
The simulation programme provides a practical application in a logistics environment, including, but not limited to, the management of time, materials handling, in-bound and out-bound logistics, staff deployment and morale, process design, cost effectiveness, customer service, cash/money flow, product-mix decisions, demand forecasting, quality assurance, procurement, and stock rotation. Teaching for this module is action-based, i.e. the module provides an environment in which learners, apply theoretical understanding, take actions and discover the consequences of the actions in order to develop an understanding of the objectives and business drivers of a logistics business. The simulation also focuses on group participation and interaction.

The learning outcomes of this qualification is aligned with requirements of the Level 7 Exit Level Outcomes since learners are required to apply theoretical knowledge to complex problems and to present such application in a well-structured argument using academic discourse. The learners are also expected to demonstrate the following: integrated knowledge

https://regqs.saqa.org.za/view
Qualification.php?id=101960

Exit level outcomes
1. Plan and coordinate logistics processes and practices so that operational and strategic targets are met.
2. Optimise supply chain processes through selecting and/or combining the best methods and practices in a globalised supply chain environment.
3. Identify and apply appropriate and applicable logistics-related quantitative techniques and methods relevant to specific logistics situation.
4. Identify and explain the key logistics related problems and solutions from a simulation model.
5. Execute logistics and distribution decisions within a supply chain.
6. Complete a research project related to logistics management.

IMPLEMENTING COMPETENCE BASED TRAINING AND EDUCATION

PRACTICAL HANDBOOK

for educational professionals and policy makers

DEVELOPING THE AFRICAN CONTINENTAL QUALIFICATIONS FRAMEWORK (ACQF)

TRAINING MODULE ONE **01**

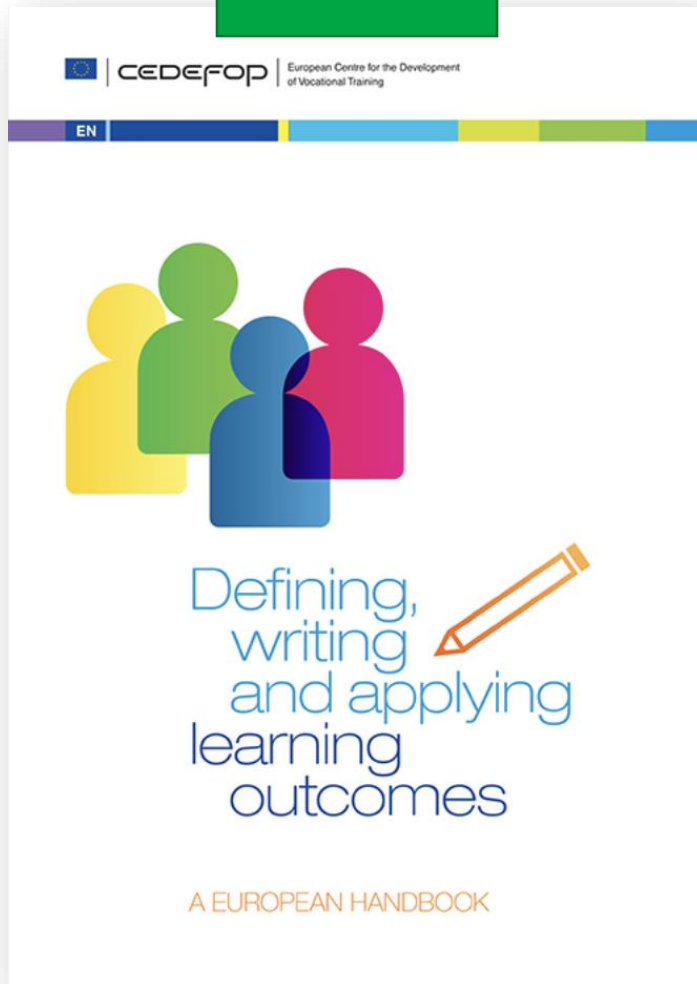**LEARNING OUTCOMES – IN QUALIFICATIONS FRAMEWORKS AND SYSTEMS**

https://acqf.africa/capacity-development-programme/training-modules/handbook-on-competence-based-training-cbt/implementing-competence-based-training-and-education-cbt-a-practical-handbook-for-educational-professionals-and-policy-makers/@@display-file/file/ACQF%20Handbook%20for%20policy%20makers-Print.pdf
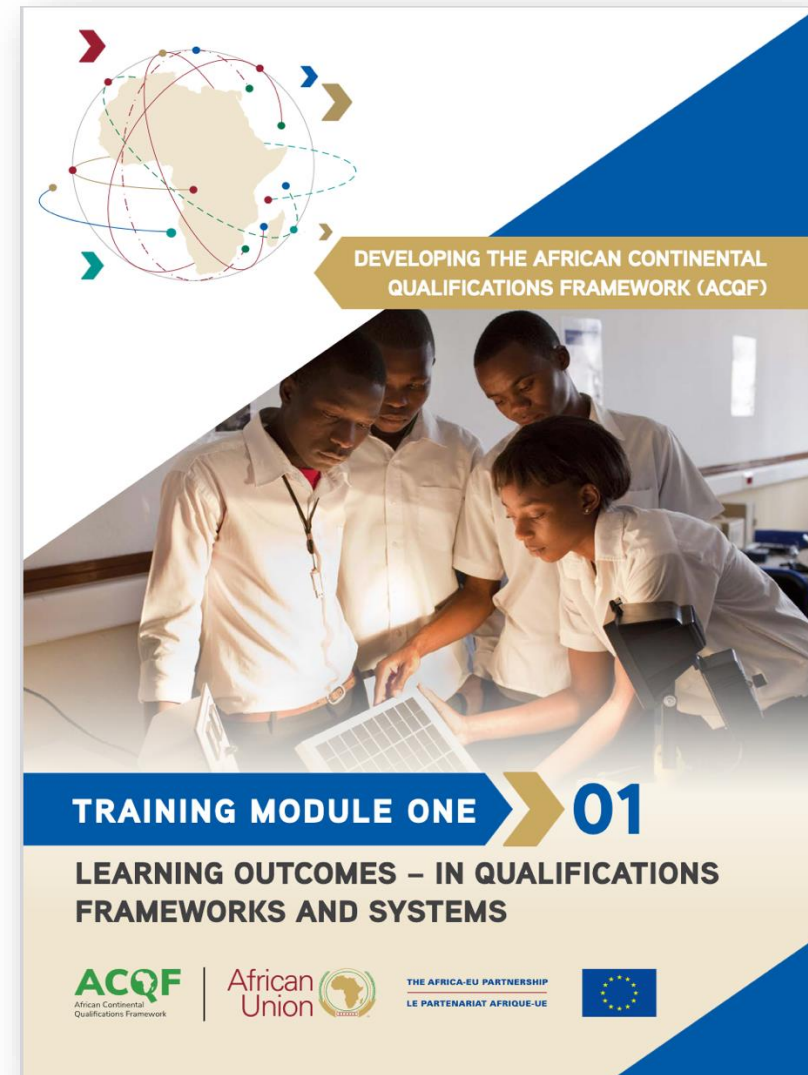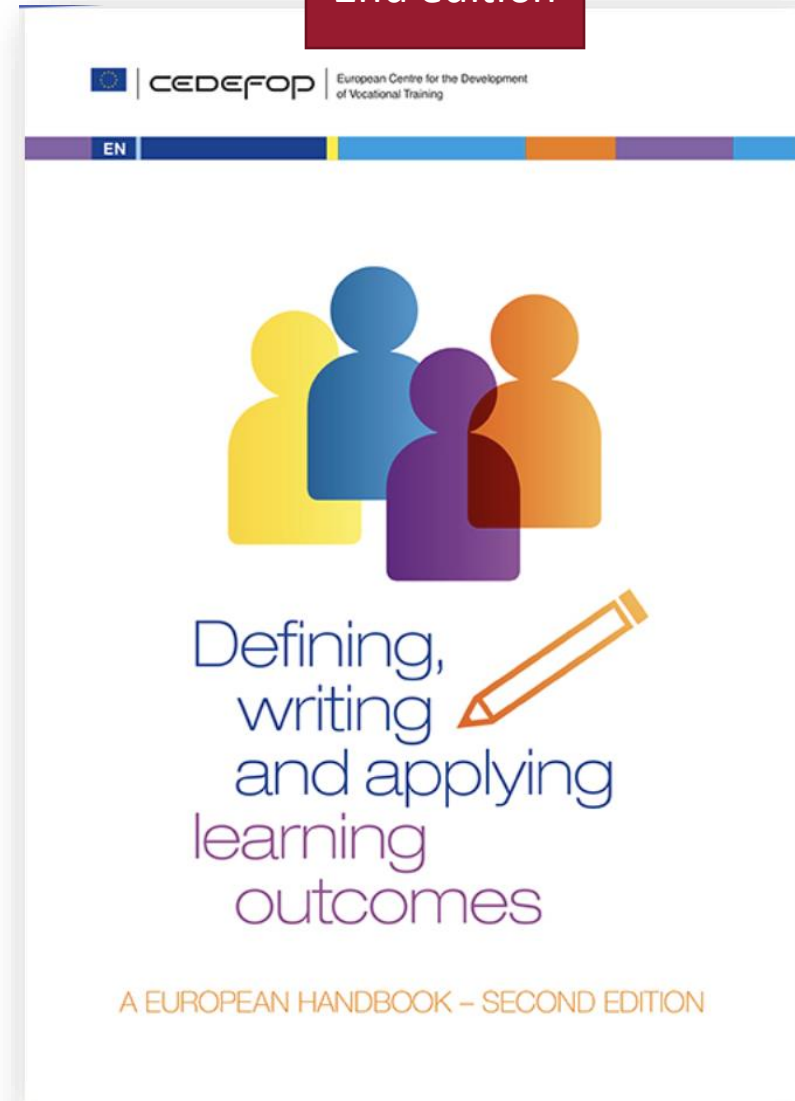
https://acqf.africa/capacity-development-programme/training-modules/training-modules-1-to-10-english/training-module-1-learning-outcomes/@@display-file/file/ACQF%20Training%20Module%201_final_EN_WEB.pdf

European Handbooks on Learning outcomes (Cedefop)

1st edition

2nd edition

4.2

Learning outcomes: Examples for practical exercices

Qualification level 5 NQF Mozambique

Auto-mechanics

EXAMPLES FROM AFRICAN EXPERIENCES

Example of a registered qualification: Mozambique – Auto mechanics, Level 5. Learning outcomes combine knowledge, transversal and technical skills. Reference: Q-EPI-04-5-13-19 at Car mechanics CV5.

Use English for social, personal and professional purposes
Communicate work-related information
Read and respond to written materials
Produce written materials
Solve logarithmic growth issues
Solve optimization issues using boundaries and derivatives
Participate in a debate as a speaker and as a key player
Interpret and produce informative and explanatory texts
Know pneumatic and hydraulic circuits applied to the automotive
Know sensors and floats
Make the calculations and know the characteristic curves of engines
Know the Automotive Multiplexing
Diagnose and repair information and communication systems
Diagnose and repair comfort and safety system
Diagnose and repair vehicle braking systems with anti-lock braking systems (ABS)
Diagnose and repair systems and steering geometry
Diagnose and repair light and heavy vehicle assisted suspension systems
Diagnose and repair automatic transmission systems
Diagnose and repair overfeeding system
Diagnose and repair breakdowns in gasoline and diesel engines
Diagnose and repair malfunctions of electronic ignition and injection systems of gasoline engines
Diagnose and repair diesel electronic injection system malfunctions
Know the constitution and operation of the converter equipment for natura gas
Analyze exhaust gases and opacity
Know the workshop management
Know how to budget, give guarantees and customer loyalty
Stimulating the use of entrepreneurship, research and innovation techniques

QUALIFICATION SPECIFICATION SECTION A				
QUALIFICATION DEVELOPER	Botho University			
TITLE	Bachelor of Science in Computer Networking		NCQF LEVEL	7
FIELD	Information and Communication Technology	SUB-FIELD	Computer Networking	

New qualification	X	Review of existing qualification		
SUB-FRAMEWORK	General Education	TVET	Higher Education	X
QUALIFICATION TYPE	Certificate	Diploma	Bachelor	X
	Bachelor Honours	Master	Doctor	

CREDIT VALUE 480

RATIONALE AND PURPOSE OF THE QUALIFICATION

Rationale

Botswana, through Vision 2016, envisages having an educated and informed nation by 2016 (Vision 2016). This vision has been reiterated by vision 2036 that aligns the country's goals with the global agenda for sustainable development. Vision 2036 advocates sustainable economic development and human and social development that require educators to attain the necessary skills and competencies to advance in their careers; as facilitators of teaching and learning in Higher Education (HE) and for their personal enrichment, empowerment or growth.

NDP 11 states the need to provide an adequate supply of qualified, productive and competitive human resources policy frameworks. It is to this effect that the BSc in Computer Networking qualification is being developed: to achieve the vision by equipping the participants with the knowledge, skills and competencies of Computer Networking in line with the creation of Knowledge based economy in Botswana.
ideal
Human Resource Development Council (HRDC) of Botswana has published the document, which provides a list of occupations that have been identified by the employers as being in high demand at a national level.

Priority skills in each occupation have been identified and these include both the core skills and soft skills. 'Information and Communication Technology' has been identified as one of the occupations that are currently experiencing shortages in the labour market (short term) and occupations that show relatively strong employment growth (long term). (HRDC, 2016).

This qualification aims to develop the necessary knowledge, skills and practical experience in students to enable them to meet this challenge. The modules building the 'BSc in Computer Networking' qualification aims to provide students with the necessary mix of technical and innovative skills to qualify them as computer networking professionals. This qualification provides knowledge, skills and competencies needed in the industry in emerging economies and thus resonates with the aspirations of self-reliance in Botswana and beyond.

An industrial survey to establish whether the qualification was viable. The responses from the survey were positive with aspiration and conviction that the qualification was contemporary, needed, and sustainable.

The qualification will cover the core areas of BSc in Computer Networking and will also cover most areas of organizational requirements for the networking. There will also be opportunities for specialization, by choosing from alternative elective options that will further develop the skills and knowledge relevant to the computer networking industry.

Purpose of the qualification

This qualification is designed to produce graduates with the theoretical and practical skill set to apply the latest technologies and tools in networks. The graduate can be ready with the necessary skills to build small, mid and large enterprise network solutions for the organizations. In addition, it offers new applications which can be effectively used in Computer Networking.

The qualification in Computer Networking aims to support national manpower building efforts by providing a rigorous, industry ready graduates who have the necessary knowledge, skills and personal attributes to offer an immediate contribution to the economy either through direct employment or entrepreneurship and job creation. Organizations of all sizes struggle to find adequately skilled technical staff with the ability to work on expensive computing equipment with minimal supervision. This skills gap is currently being filled

where affordable with the recruitment of expatriate manpower, however this model cannot be sustained indefinitely and there is an urgent need to empower Botswana citizens.

ENTRY REQUIREMENTS (including access and inclusion)

Entry into this qualification is through any one of the following requirements;

1) The minimum entry requirement is BGCSE or other equivalent with passes in relevant subjects..

2) Certificate V or Diploma in a related Field, with provisions for exemptions, where applicable, in line with CATS and RPL Policies.

3) Applicants that do not meet the above criteria but possess relevant industry experience will be considered through recognition of prior learning (RPL).

QUALIFICATION SPECIFICATION B	SECTION
GRADUATE PROFILE (LEARNING OUTCOMES)	**ASSESSMENT CRITERIA**
1. Demonstrate advanced and specialized knowledge of concepts, terminology, theories, models, and methods in the field of Computer Networking.	Learner should be able to: • Apply networking concepts by using a network simulator. • Demonstrate advanced techniques in implementation of networking theory, models and methods by using packet tracer simulator. • Create a LAN (Local Area Network) • Develop cross wired and straight through cables through cable by using clamping tools.
2. Apply different principles of Computer Networking and prepare the organizational requirements.	Learner should be able to: • Demonstrate the principles and practices in analysis and design of computer network

	system and be able to prepare the documents which are relevant to needs of the organization. • Apply the principles and create a LAN and WAN.
3. Critically analyze the requirement of Computer networking in an organization and provide an independent evaluation of the data.	Learner should be able to: • Analyze the data transfer in the networks. • Analyze the requirement of computer networks data through Network Interface cards and hard drive access speeds.
4. Develop and systematically test different networking models and manage its day to day functions and processes.	Learner should be able to: • Create Computer Networking business process for the organization. • Design network models using CISCO simulators.
5. Carryout different Computer Networking experiments and critically evaluate their concepts and problems.	Learner should be able to: • Design and configure the network topology by using packet tracer software and distance vector routing protocol. • Apply the network configuration commands
6. Identify, apply and solve the various networking complex and volatile problems in the organization.	Learner should be able to: • Troubleshoot network connectivity problems with a hub, router or switch. • Troubleshoot excessive network collisions by providing a good network plan.
7. Apply advanced methods of network security measures by identifying various	Learner should be able to:

threats which forms the basis for reliability of the career in organization.	• Solve network security measures by implementing a firewall, antivirus systems, Intrusion detection systems. • Use port scanners, network sniffers, vulnerability scanners, and general network tools as security measures for various threats.
8. Administer the network infrastructure responsibility and be accountable for the issues and problems arise in the organization networking environment.	Learner should be able to: • Develop a case for the issue and problems related to network environment including software and hardware platforms. • Create a plan for recovery data in case of network failure.
9. Critically analyze ethical and legal issues in developing computer network solutions for small, mid and large enterprises.	Learners should be able to: • Categorize various ethical and legal issues for computer networks. • Contrast the ethical issues in open networks, closed networks, service provider issues, and backbone site issues.
10. Communicate effectively with a range of audiences and prepare technical documents and make effective oral presentations.	Learners should be able to: • Create technical documents, reports and evidences by using any available Microsoft tools such as word, excel and PowerPoint.

Mapping of Exit learning outcomes of the qualification to NCQF's knowledge, skills and competency

Exit level outcome	Knowledge	Skill	Competency
ELO1	X		
ELO2		X	

ELO3		X	X
ELO4	X	X	
ELO5		X	X
ELO6	X	X	
ELO7		X	X
ELO8	X		X
ELO9		X	X
ELO10		X	

QUALIFICATION STRUCTURE SECTION C

FUNDAMENTAL COMPONENT Subjects / Units / Modules /Courses	Title	Level	Credits
	Academic Writing for STEM	6	10
	Entrepreneurship and Innovation	8	20
	Professional Issues and Ethics	6	10
CORE COMPONENT Subjects / Units / Modules /Courses	Computer and its Essentials 1	5	10
	Programming Logic and Design	5	10
	Mathematics	5	10
	Operating Systems and Hardware	5	20
	Networking Fundamentals	6	20
	Computer and its Essentials 2	6	10
	Computer System Architecture	6	10
	Database Concepts	6	10
	Programming using C++	6	20
	Network Security	6	10
	Routing and Switching	6	10
	Routing and Switching Lab	6	10
	Web Design and Development	6	10
	Web Design Practice Lab	6	10
	Essentials of Linux	6	10
	Wireless Networks	6	10
	Scaling Networks	6	20
	Managing Business Desktops using Windows	6	10

	LAN and WAN design	7	10
	LAN and WAN design Lab	7	10
	Linux Network Administration	7	20
	Research Methods for STEM	7	10
	Implementing IP Routing	7	10
	IT Service Management	7	10
	Database Administration and Security	7	20
	Software Defined Network Engineering	7	10
	Professional Practice in Computing	7	40
	IP Switched Networks	7	10
	Research Project 1: Proposal Writing	7	10
	Windows Network Administration	7	10
	IT Infrastructure Management	7	10
	Research Project 2: Dissertation	8	20
ELECTIVE COMPONENT Subjects / Units / Modules /Courses			
	Enterprise and ISP Network Solutions	7	10
	Cloud Computing and Security	7	10
	Security by Design	7	10
	Media and Storage	8	10
	Cybersecurity Operations	8	10
	Troubleshooting Routing and Switching	8	10

Rules of combinations, Credit distribution (where applicable):

- This qualification will have at least 480 credits and take at least four years to complete including a full semester internship under the normal fulltime mode of study.
- The 40 credits internship module, called the Professional Practice module, may typically be done after the student has passed at least 240 credits worth of modules.
- The credit combination for this qualification is from 40 fundamental components, 420 core components and the remaining 20 is from elective components, where candidates will choose any two.

Credit Distribution:

Level and Credits	Compulsory	Elective
Level 5 Credits - 50	50	0
Level 6 Credits - 190	190	0

Level 7 Credits - 190	180	10	
Level 8 Credits - 50	40	10	
Total Credits: 480	460	20	

ASSESSMENT & MODERATION ARRANGEMENTS

This qualification is assessed and moderated as follows:

Integrated Assessment:

Because assessment practices must be open, transparent, fair, valid, reliable, and ensure that no learner is disadvantaged in any way whatsoever, an integrated assessment approach is incorporated into the qualification. Both formative and summative assessment processes are monitored during the qualification and to determine competence at the end of the qualification.

Summative assessment:

Integrated assessment, focusing on the achievement of the exit-level outcomes, will be done by means of a written examination (of at least 3 hours) at the end of every module (per module).

Project: Students need to do a project and submit their project work at the end of the qualification.

Professional Practice: All students will go through the work placement. Tutor assigned to student will visit the intern at workplace and do the evaluation. (15%). A second visit at the intern place is conducted and evaluation is completed (15%). Supervisor evaluates the intern and submits a report to the tutor (20%). At the end of professional practice, student will submit a project report (50%). All the marks from the internship, tutor visits, supervisor evaluation of intern and report will be captured in the form called 'internship report feedback form'. Monitoring of students' during internship is done using weekly logbook.

Formative assessment :

Learners are continuously assessed through:

- Practical test
- Class assignments

- Presentations
- Informal class tests
- Formal modular tests

Pass requirements :

A learner passes a module if he/she obtains a final mark of 50% or more in the module. The final mark is constituted of class participation (5%) the formative assessments (35%) and the summative assessment (60%). A learner qualifies for the B.Sc in Computer Networking degree on NCQF level 7 when he/she passed all required modules individually. The final mark for the qualification is calculated by averaging the marks obtained in the various modules. The student should complete 480 credits to complete the qualification.

Moderation:

Moderation of assessments focuses on:
- a) Ensuring the assessment is aligned to the module objectives and the learning outcomes.
- b) Ensuring assessment is consistent on all levels within the institution and does not show any bias or academic disregard and that it is immune to all forms of prejudice.
- c) Ensuring the level of assessment appropriately matches to students' level of study. This ensures that the assessments remain viable, relevant and provide an accurate judgement of a student's achievements and level of knowledge.
- d) Maintaining consistency in the marking process

Pre-assessment Moderation:

This moderation is carried before assessment tasks are given to students. All submitted sets of question papers &marking keys are shared with the moderators. Each assessment pack should be moderated by two Moderators where possible. The question paper moderation report should be filled in for each question paper. Moderator report will be shared with question paper setter so that moderator feedback will be taken into account when finalizing the question paper.

Post-assessment Moderation:

Moderation of completed assessment tasks is categorized as post-assessment moderation. It is carried out after assessment tasks have been marked. The set of answer scripts and marking

---

keys are shared with the moderators. At least 10% of the answer scripts in a module should be moderated during post assessment moderation.

RECOGNITION OF PRIOR LEARNING (if applicable)

A clear framework through which students can accumulate learning credits and transfer such credits toward appropriate qualifications helps to validate and recognize learning gained through formal and informal means, provides flexibility to students, and allows students to progress relatively seamlessly through their lifelong learning journey.

Candidates may apply for recognition of prior learning whether such learning has been gained through formal study, through workplace learning, or through any other formal or informal means. Any candidate applying for recognition of prior learning (RPL) will be expected to provide evidence of such learning that must be relevant, sufficient, valid, verifiable, and authentic. In addition, the candidate may be interviewed by a member of staff or have to take a formal test, which may include a live demonstration of skills and competencies, to assess competence.

PROGRESSION PATHWAYS (LEARNING AND EMPLOYMENT)

Learning Pathway: Those who have achieved the qualification can progress as mentioned below:

Vertical:
BSc (Hons) in Computer Networking, at NCQF Level 8.
BSc (Hons) in Network Security, at NCQF Level 8
BSc (Hons) in Network Computing, at NCQF Level 8

Horizontal Pathway:
BSc in Network Security & Computer Forensics, at NCQF Level 7.
BSc in Software Engineering, at NCQF Level 7.

Employment Pathway:
The qualification will produce graduates suitable for positions as

- Network Specialist.
- Network Technician.

- Network Administrator.
- Network Analyst.
- Network Manager.
- Network Engineer.
- Network Solutions Architect.

QUALIFICATION AWARD AND CERTIFICATION

The learner will be awarded 'Bachelor of Science in Computer Networking' after attaining 480 credits as specified in the rules of combination and credit distribution. This qualification does not have exit awards. Therefore, if the candidate does not need the prescribed minimum standards of the qualification the learner will exit with a transcript/ record of learning.

REGIONAL AND INTERNATIONAL COMPARABILITY

This Qualification was compared with various universities running similar qualifications. The following universities and their qualifications were taken for benchmarking:

- **Regional:** The Independent Institute of Education, South Africa -Bachelor of Computer and Information Sciences in Network Engineering

- **International:** Middlesex University, UK **-** BSc Computer Networking
- **International:** The British University in Egypt **-** BSc Computer Networking
- **International:** University of Westminster, UK - BSc in Computer Networking Security

Summary:

Similarities:

The qualification offered by Independent Institute of Education, South Africa consists of modules such as Programming Logic and design, Operating system, Network administration, wireless communication, Database administration, Enterprise architecture, introduction to research and Network engineering are also included in this qualification.

The qualification offered by Middlesex University, UK and this qualification have many common modules like: Computer Systems Architecture, Operating Systems, Computer Fundamentals, Fundamentals of

Science, technology, and Mathematics, Research Methods, Professional Project Development, Individual Project, and Network Analysis and Troubleshooting.

The qualification offered by 'The British University in Egypt' consist of modules such as Introduction to Computing, Mathematics for Computer Scientists, Introduction to Programming and Problem Solving, Principles of Web Programming, Database Systems, Wireless Networks, Computer Systems Security, Entrepreneurship and Innovation, and Graduation Project, which are also offered in this qualification.

The qualification offered by University of Westminster consists of modules such as Programming using C++, Mathematics for Computing, Operating Systems, Professional Engineering Practice, Network Engineering, English for Academic Purposes, Individual Project which are also offered in this qualification.

Differences:

This qualification shares many common modules with the benchmarked qualifications. However, this qualification has additional modules like Professional issues and Ethics, Entrepreneurship and Innovation.

Regarding the assessments this qualification includes practical based and project-based assessments, whereas the others follow the multiple-choice, open book model-based assessments. This qualification has 480 credits, whereas the Middlesex University has only 300 credits and University of West Minister has 360 credits.

REVIEW PERIOD

5 Years

4.2

Practical exercices, debates

Questions on the examples from African countries

1. What do you consider the **main strengths** of the provided examples?
   - Please list 5-6 points considering criteria: clarity, coherence; applicability (realistic); relevance for end users such as learners, employers, providers; linkages to NQF.

2. What concretely from these examples can you apply or contextualise for the Somalia NQF, for your institution, for the sub-system - if adequate and relevant?
   - Please indicate concrete aspects and elements, and also general considerations.

3. How can the Somalia NQF support improvements / reinforcement and generalisation of the learning outcomes approach in Somalia?
   - Please indicate general proposals and a few specific relevant action points.

ACQF Questions on Learning outcomes approach in Somalia

1. "Learning outcomes": **what term(s)** are used in Somalia?

2. In **which areas and contexts** are Learning Outcomes used in Somalia?

3. Is the use of **learning outcomes recommended or mandatory** in development of new qualifications (TVET, HE, General education, adult literacy, others)?

4. What are the main **policies / legal acts / regulatory documents** that recommend / require / regulate learning outcomes approach in different sub-systems (TVET, HE, General education, adult literacy, others)?

5. Is the use of learning outcomes in the description of qualifications / standards and in curricula and assessment tools – **a part of quality assurance / accreditation, and registration of programmes and qualifications? Can you explain?**

6. What are the **technical and methodological supports** for information, dissemination, application of learning outcomes approach in development of qualifications (all sub-systems)? **Ex.: methodology packages, training for developers in working groups, subject benchmarks, glossaries verbs and qualifiers, dedicated website, good practices, etc. At national & institutional levels.**

7. Approx.: **how many programmes and qualifications have been designed using learning outcomes / and how many are planned?** If the number is not defined, please share some proxy information.

8. How are social partners (employers, trade unions), professional associations, sector councils **involved in the process (value chain) of learning outcomes** – from upstream to downstream steps.

Your views...

"Learning outcomes are the **GPS** in the eco-system of qualifications":

- Do you agree?
- Why?
- Comments?
- What is the main benefit of this understanding of learning outcomes?

4.3

Quality Assurance

Definitions and concepts

Transparency and trust in qualifications

ACQF

Transparency and trust in qualifications is key in a context of widespread international learner and labour mobility, and rapid transformation of types of qualifications and credentials for different needs and contexts of lifelong learning.

Quality assurance – as part of a range of measures by governments and institutions – increases **transparency and should underpin trust in the relevance and quality of learning outcomes** (that is, learners' knowledge, skills, autonomy, and responsibility, as certified by qualifications).

The system level

The provider level

Such **trust in learning outcomes** is, in turn, based on **trust in the quality of the institutions and providers of education and training** at all levels and in all subsectors.

Quality assurance: Definitions

- The term '<u>quality assurance</u>' is relatively new in education and training, even though quality assurance concepts and measures have been intrinsic to the sector for a long time.

- Definitions of quality assurance emphasise different dimensions of the concept.

  ➢ Some definitions highlight the **complementarity between quality assurance at system level (wider scope) and at education providers' level**.

  ➢ Other definitions focus specifically on **procedures for internal and external quality assurance at providers' level and at the level of quality assurance agencies**.

Definitions

- The **African Standards and Guidelines for Quality Assurance** **(ASG-QA)** define quality assurance as a '*general term for procedures in **internal or external** quality assurance procedures including accreditation, evaluation, audit both on programme and institutional levels and also **concerning quality assurance agencies**'.*

UNESCO Global Convention on the Recognition of Qualifications concerning Higher Education takes into account three levels of quality assurance: **systemic, providers and programmes**.

➢Quality assurance is *'an ongoing process by which the quality of a higher-education system, institution, or programme is assessed by the competent authority/authorities to assure stakeholders that acceptable educational standards are continuously being maintained and enhanced'* (UNESCO 2019).

Asia-Pacific, UNESCO: [Guideline for the quality assurance of technical vocational education and training](#)

- Quality assurance is defined as
  - ➢'planned and systematic processes that provide **confidence** in services provided by TVET institutions under the remit of responsible bodies. Quality assurance of the assessment and qualification processes allows stakeholders in TVET qualifications (e.g., graduates and employers) to have **confidence and trust** in those qualifications'.

Quality assurance in TVET: wider definition - as a multi-dimensional perspective

Quality assurance can be viewed as the 'composite measures established to verify that processes and procedures are in place, which, when effective, ensure the quality and **quality improvement** of education and training [... and] guide **quality assurance in VET policies and approaches** so that they:

- are **fit for purpose and context** with emphasis on relevance and cost-effectiveness
- acknowledge that quality assurance is a dependent variable (on **context and other policy theme**s)
- address **education and training inputs, processes, outputs, and outcomes**
- apply the **quality cycle: plan, implement, monitor, and evaluate, review and renew**
- make **visible strengths, weaknesses, and improvement successes**
- promote quality improvement through a pervasive **quality culture**
- take into account internationally accepted quality assurance concepts and models' (ETF, 2015).

Question: chat box

1. Quality assurance (QA) in the context of NQF / NQS in your country:
- Quite similar or quite different from the above definitions?

2. Where is the emphasis of QA measures and processes in your national systems (education and training, NQF / NQS)?
- At system level?
- At providers level?
- All levels?

ACQF

Definitions and concepts

Quality Assurance – place in ACQF referencing process

- **Referencing of NQFs / NQS to the ACQF** is a process of transparency, self-assessment and continuous improvement.
- The referencing criteria provide the framework for comparability between countries, of the analytical process and results, and the robustness of the final report.

Read more :
- Training Module 5: on quality assurance
- Training Module 3: on referencing to ACQF

Join sessions 20-22 on 22/04/2022: full presentation on referencing

4 main ACQF Referencing criteria

The main ACQF referencing criteria	
1	There is a clear and demonstrable link between the qualifications levels in the national qualifications framework or system and the level descriptors of the ACQF.
2	The national qualifications frameworks or systems are based on learning outcomes principles and related to arrangements for recognition of prior learning (including non-formal and informal) and, where appropriate, to credit systems.
3	There are transparent processes and procedures for including qualifications in the national qualifications framework or system or for describing the place of qualifications and information on qualifications is accessible, trustworthy and verifiable in a national register(s) of qualifications.
4	**The national quality assurance system for education and training refers to the national qualifications framework or system and is consistent with the principles of quality assurance of the African Continental Qualifications Framework (ACQF).**

At heart of Criterion 4

Criterion 4 of referencing – application principles

- **The referencing to the ACQF of national qualifications frameworks or systems demonstrates the degree to which quality assurance of national qualifications:**
  - addresses the qualifications quality chain, from design of standards underpinning qualifications to learning, assessment, and certification;
  - addresses the application of the learning outcomes approach;
  - includes feedback instruments and processes supporting continuous quality improvement;
  - addresses internal and external quality assurance, and the regular review of quality assurance agencies;
  - is based on measurable objectives, standards, and guidelines for quality assurance;
  - is supported by resources; and
 - provides transparent information-sharing on results of evaluation.

Translating into a simple question
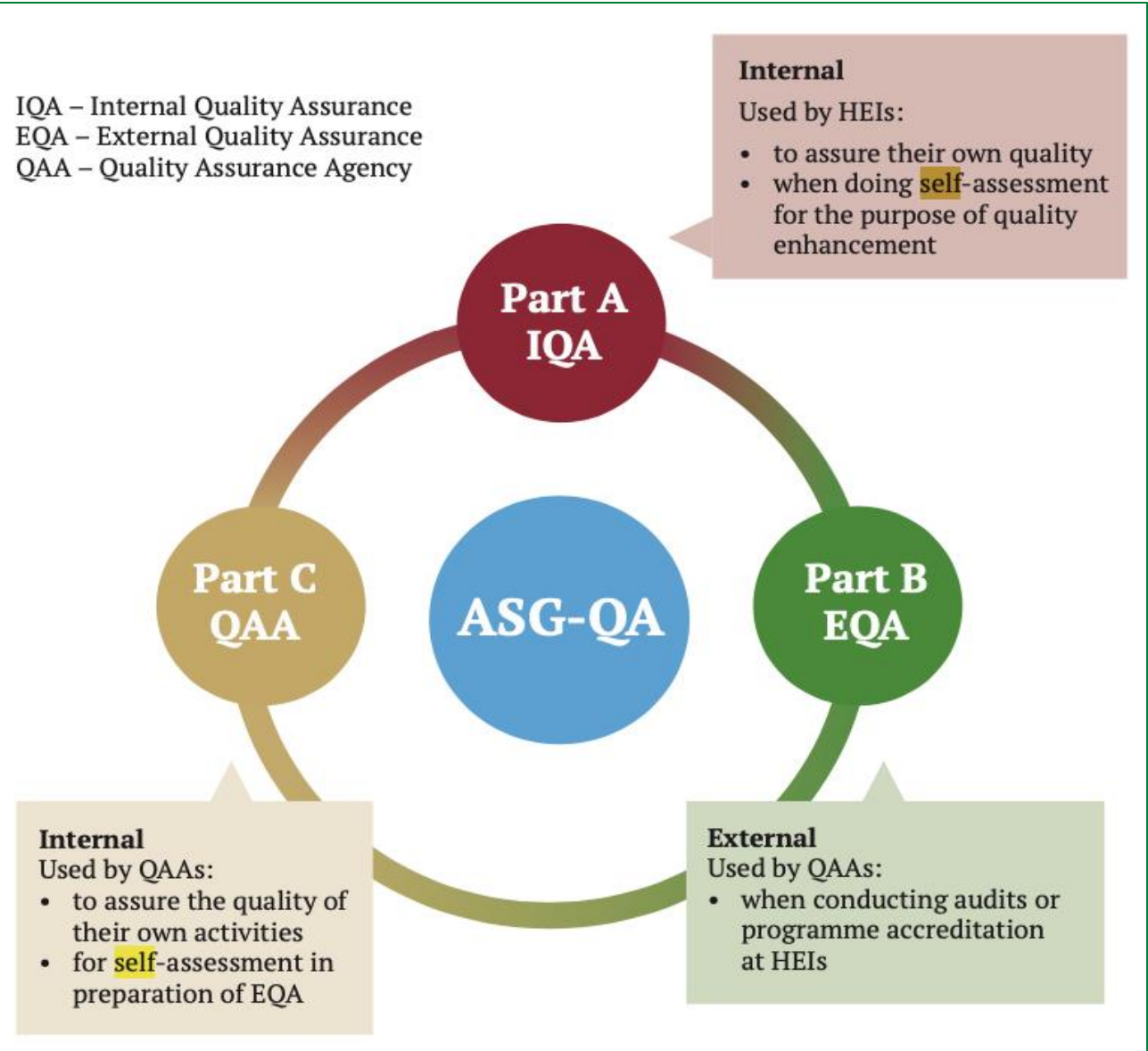
Can existing quality assurance arrangements support:
➢ *the shift to learning outcomes and also*
➢ *the transparent classification and registration of qualifications in NQF?*

Quality assurance in the context of regional qualifications frameworks and regional blocks

ASG-QA
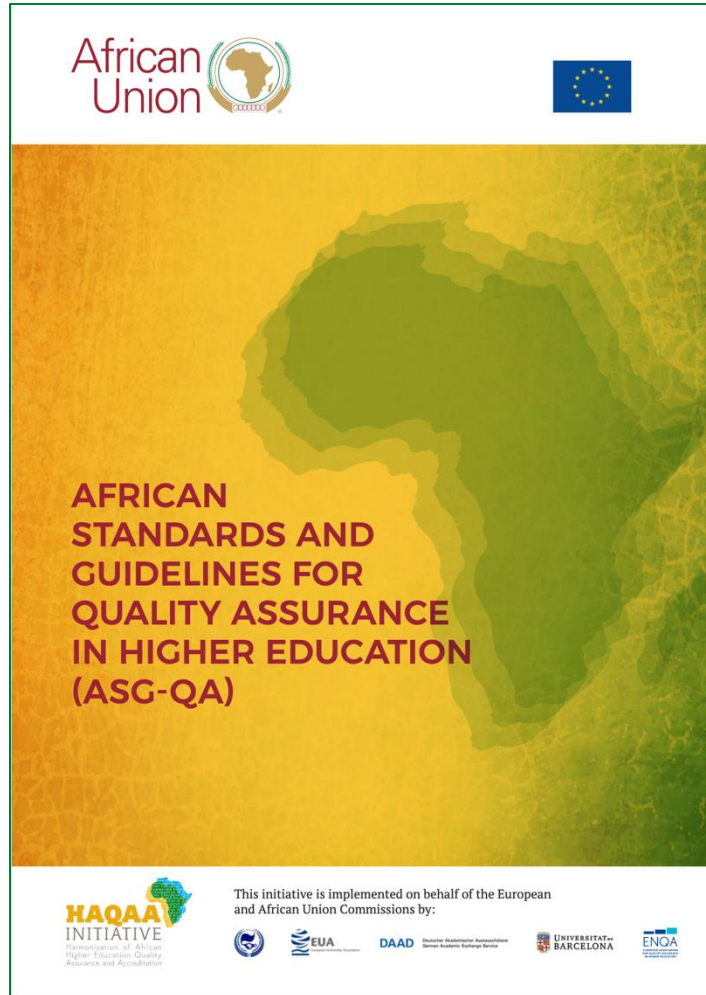
Snapshot: Quality assurance frameworks in other regional blocks

ACQF

- **Focus**: outcomes and qualifications acquisition process
- **13 principles** – each complemented by qualitative and quantitative indicators
- Types of governance arrangements
- Stages of implementation of QA

- Addresses 2 levels: system level and providers level
- Indicative indicators:
  - Structured by phases of quality cycle: Planning-implementation-evaluation-review
- 10 reference indicators – 3 categories
  - Overarching indicators for QA
  - Indicators supporting quality objectives for VET policies
  - Indicators of context information
- EQAVET is a community of practice, peer review, network meetings

TM 5

European Framework for Quality and Effective Apprenticeships (EFQEA)

- Quality apprenticeships can make a difference in helping people get into the labour market.
- They provide people with real work experience and skills, becoming a fast track to employment. They are a bridge to jobs.

EFQEA: criteria and actions contributing to effective apprenticeships
14 quality criteria in 2 blocks

1. Criteria for learning and working conditions
   - Such as: pedagogical support, workplace component, social protection
2. Criteria for framework conditions
   - Such as: regulatory framework, support to companies, flexible pathways and mobility, QA based on EQAVET

Council Recommendation on a European Framework for Quality and Effective Apprenticeships (2018)

Quality assurance of qualifications

Quality assurance of qualifications is concerned with four dimensions

A. Quality qualifications: concepts and characteristics, quality cycle;

B. Minimum criteria for the quality of qualifications;

C. Quality assurance elements from a qualification system perspective: qualification standards, assessment and certification; and

D. Qualifications quality chain: from standards to awards.

Minimum criteria for quality of qualifications
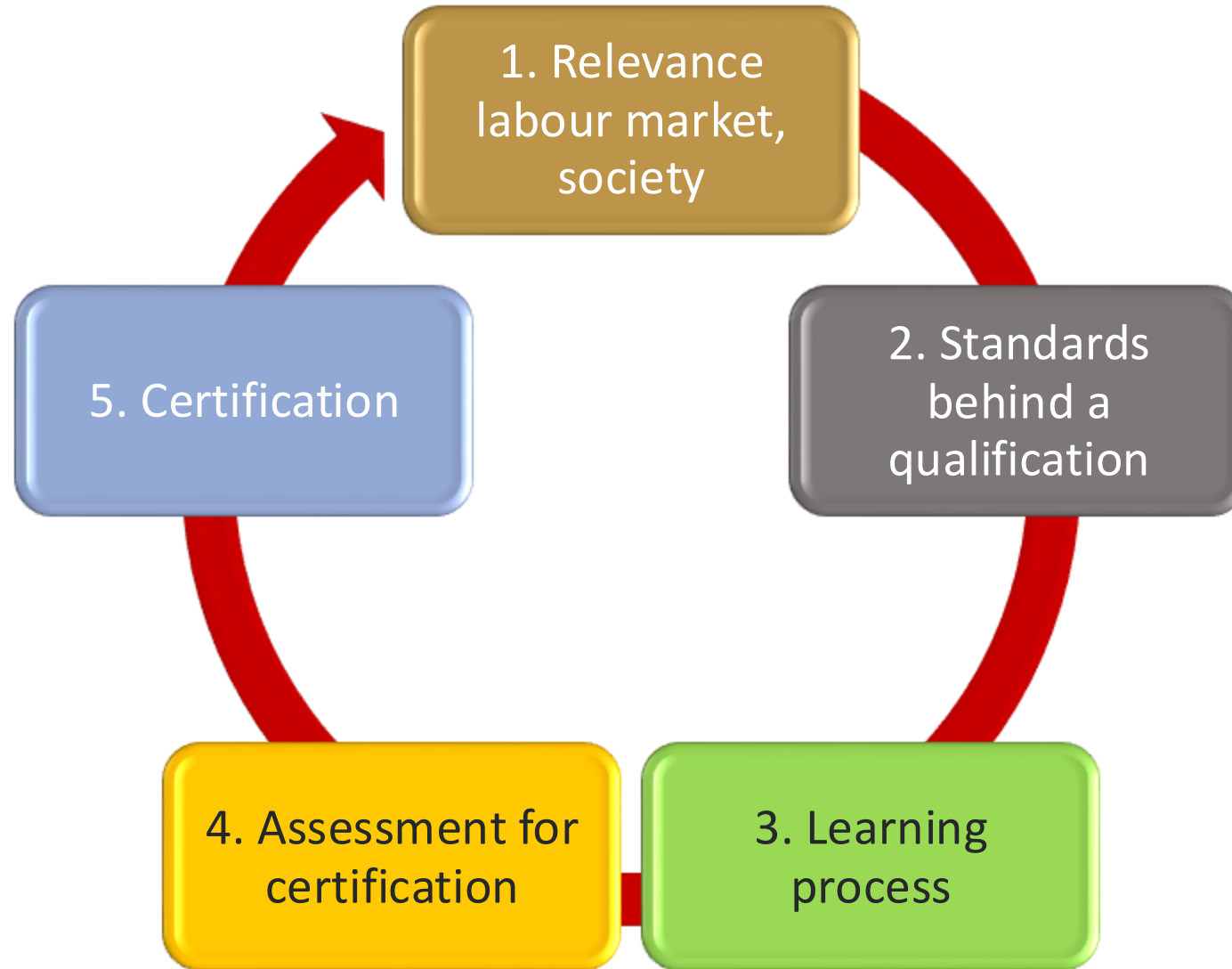
Qualifications quality chain

- Quality assurance for quality qualifications consists of two broad processes:

  - ➤ Ensuring that qualifications are relevant and have value; and
  - ➤ Ensuring that the people who are certificated meet the conditions of the qualification.

Back-chaining from the final outcome to the start of the process
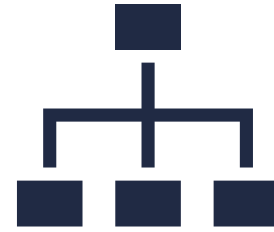
ACQF

Quality Assurance in TVET and qualifications systems should address several levels

The system level:

Underpinning the TVET policy cycle, supporting the culture of continuous improvement, contributing to policy monitoring and review, and engaging the stakeholders.

The providers' level:

Internal quality assurance

External quality assurance

Quality assurance of RPL

Guiding principles of QA of RPL

Accessible

Consistent

Fair

Valid

Rigorous

Guiding principles QA of RPL

Accessible

- Processes provide information, advice and access by being responsive to applicant questions
- Cost-efficient for both applicant and organisation
- Timely in both frequency of assessment and gap-filling options
- Adult learner-centred, voluntary, available, and inclusive of all abilities and differences

Consistent

- Decision-makers (advisor, assessor, administrator) work together to be consistent with criteria, training, tools, procedures, and outcomes
- Definitions must be agreed across sectors to allow for transferability

Fair

- Processes are unbiased and recognise a wide range of ways people learn. Therefore, applicants are allowed optional ways to prove learning
- An appeal mechanism is provided
- Policies and procedures of the organisation align with RPL principles

Valid

- Assessment methods align with the expected measures of achievement (competencies, occupational standards, goals, or outcomes)

Rigorous

- RPL assessment methods:
  - reflect the purpose for the required learning have equivalent expectations to traditional assessment methods;
  - are conducted by subject matter experts; and
  - meet requirements of work or performance criteria (CAPLA 2015)

QA at all RPL phases

Identification

- Awareness, information and guidance: clarity, equity, access.
- QA - enables proper circulation of information throughout all modalities.

Documentation

- Support, tools
- Individualised

Assessment

- QA - assessment is fair and reliable for all RPL candidates.
- Based on learning outcomes
- QA - during all assessment, whatever form it takes, assessors moderators properly fulfil their role
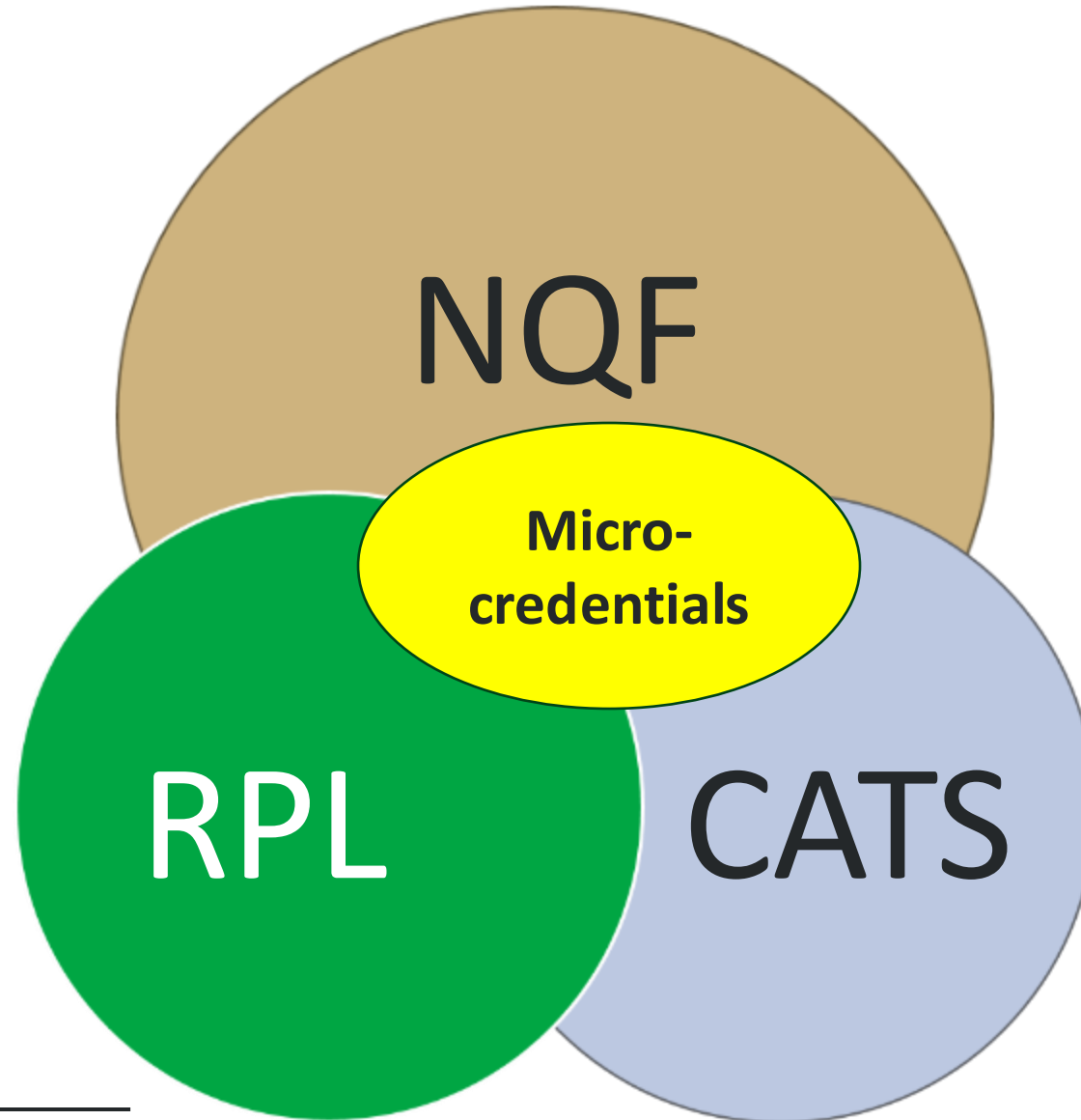
Certification

- QA – equitable, no discrepancy or delay in the issuing of certificates to RPL learners.

4.4

Micro-credentials

NQF-RPL-CATS-Microcredentials

Micro-credentials...Quick overview

- National governments, and regional and international organisations have intensified debate and research with the aim to define the role and place of Micro-credentials in national education systems and qualifications frameworks, enhancing their benefits for lifelong learning and employability.

- In 2022 UNESCO proposed a common definition of micro-credentials, based on a process of experts' consultation of global scope.
  - UNESCO (2022). Towards a common definition of micro-credentials. https://unesdoc.unesco.org/ark:/48223/pf0000381668

- In June 2022 the European Union approved the Council Recommendation on a European Approach to Micro-credentials for lifelong learning and employability. All definitions emphasise: assessment, quality assurance and focused learning achievement.
  - Council Recommendation of 16 June 2022 on a European approach to micro-credentials for lifelong learning and employability 2022/C 243/02 ST/9790/2022/INIT https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=uriserv:OJ.C_.2022.243.01.0010.01.ENG

Context of development of micro-credentials

The number and diversity of micro-credential offerings has expanded substantially in recent years, accelerated by the onset of the COVID-19 pandemic.

A large part of all employees will need reskilling and the urgency of getting people back to work gives new momentum to "micro-credentials", which hold **promises and challenges.**

The **common understanding** on the role and potentialities of micro-credentials in the era of digital learning and economy is central to the debate. Countries, regional communities and international organisations globally are deploying initiatives to clarify the state-of-play and develop policies and measures to better contextualise micro-credentials. Ex.: UNESCO, EU, Australia, African countries (Erasmus+ project, ACQF)

Micro-credentials: elements of a definition

- Existing definitions (from OECD, European Commission, UNESCO, Australian Government) point to key characteristics of micro-credentials:

    - ✓ **Referring to learning over a limited time and/or in a specific area**
    - ✓ **May form part of or add to formal qualifications**
    - ✓ **Potentially 'stackable' over time, adding to individual learning careers**
    - ✓ **Given their limited size and focus, more flexible than traditional qualifications**
    - ✓ **Based on assessed learning**
    - ✓ **Frequently delivered in a digital form**.
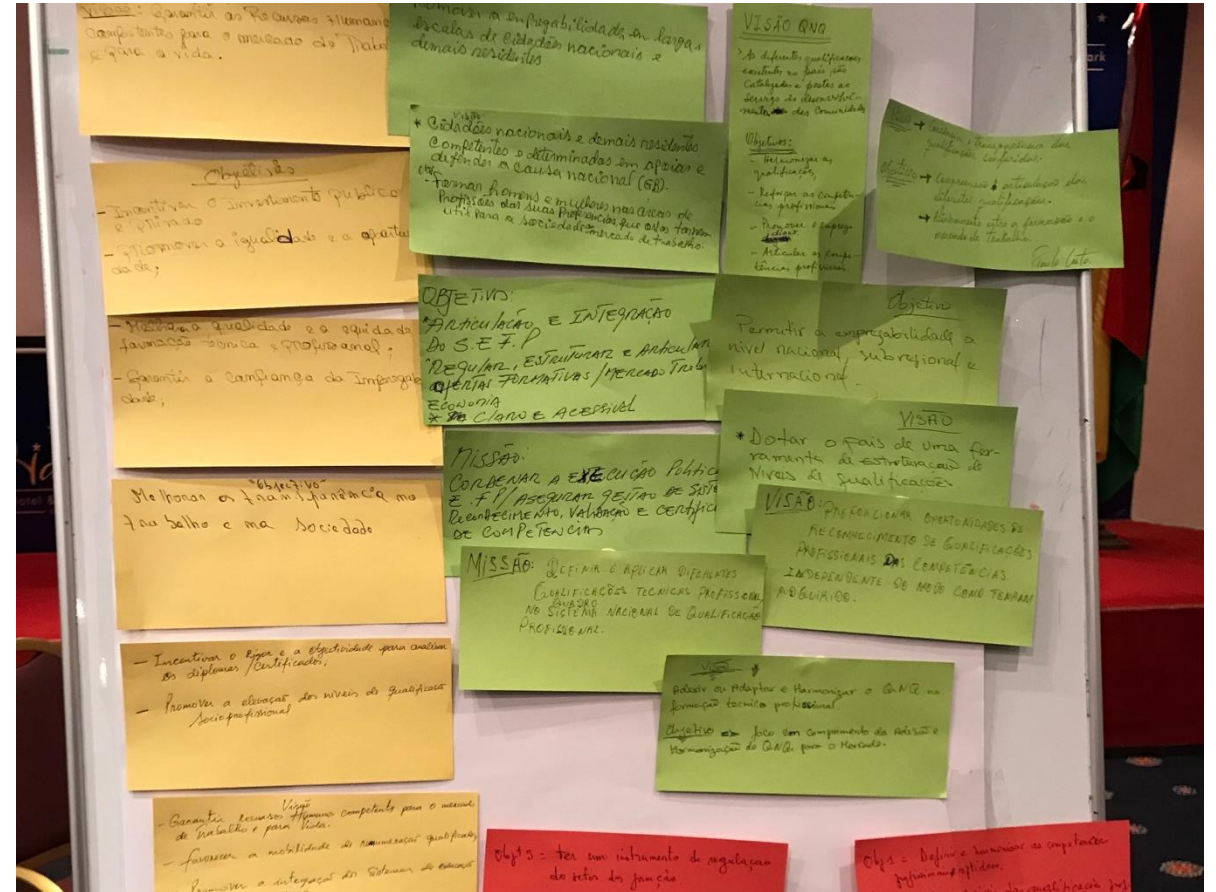
Micro-credentials: UNESCO proposed definition

A large **subset of credentials** can be referred to as **micro-credentials**: **focused on a specific set of learning outcomes in a narrow field of learning and achieved over a shorter period of time.**

Micro-credentials are offered by commercial entities, private providers and professional bodies, traditional education and training providers, community organisations and other organisations.

While many micro-credentials represent the outcomes of more traditional learning experiences, others verify demonstration of achievements acquired elsewhere, such as in the workplace, through volunteering, or through personal interest learning. Micro-credentials are often promoted as an efficient way to upskill workers across the lifespan.

The proposed definition (Oliver, 2021) states that a micro-credential:

1. **Is a record of focused learning achievement verifying what the learner knows, understands or can do;**

2. **Includes assessment based on clearly defined standards and is awarded by a trusted provider;**

3. **Has stand-alone value and may also contribute to or complement other micro-credentials or macro-credentials, including through recognition of prior learning; and**

4. **Meets the standards required by relevant quality assurance.**

EU: Recommendation on European approach to micro-credentials for LLL and employability: definition

- "Micro-credential' means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes will have been assessed against transparent and clearly defined criteria. Learning experiences leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be stand-alone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity."

Adopted 16/06/2022: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022H0627%2802%29

Potentialities of micro-credentials

Micro-credentials are one of the **big movements** in education and training.

The should be at **service of Big Ideas**, rather than being considered the Big Idea...
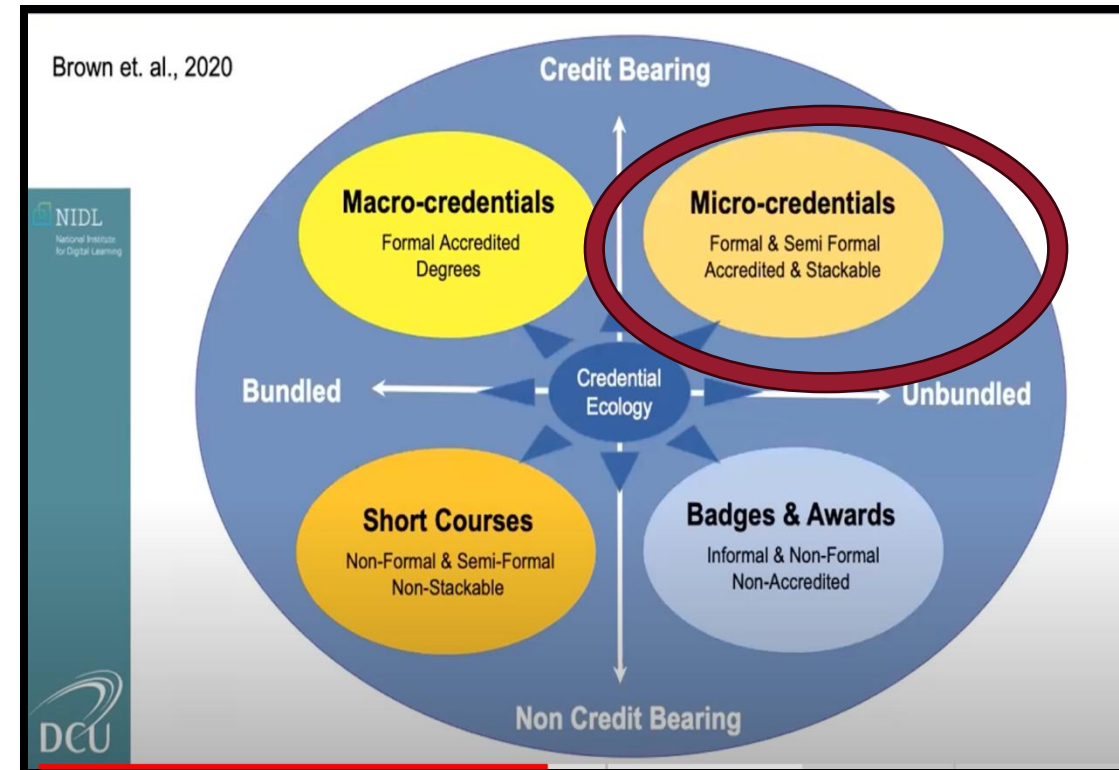
Micro-credentials can help **certify the outcomes of small, tailored learning experiences**.

They make possible the **targeted, flexible acquisition of knowledge, skills and competences** to meet new and emerging needs in society and the labour market and make it possible for individuals to fill the skill gaps they need to succeed in a fast-changing environment, while not replacing traditional qualifications.

They can, where appropriate, complement existing qualifications, providing added value while not undermining the core principle of full degree programmes in initial education and training.

Micro-credentials could be designed and issued by a variety of providers in different **learning settings** (formal, non-formal and informal learning settings)

Credential ecology: quadrants

Brown et. al., 2020

NIDL
National Institute
for Digital Learning

Credit Bearing

Macro-credentials
Formal Accredited
Degrees

Micro-credentials
Formal & Semi Formal
Accredited & Stackable

Bundled   Credential
Ecology   **Unbundled**

Short Courses
Non-Formal & Semi-Formal
Non-Stackable

Badges & Awards
Informal & Non-Formal
Non-Accredited

DCU

Non Credit Bearing

Access the video

Mike Brown, MC Observatory

Micro-credentials

Stylized version: how different micro-credential regimes aim to incorporate varying sub-sets of the **seven qualities.**

- **Note: <u>Stackability</u> is a common feature for US, NZ, A, EU, IBM**

Approaches to Stackability of Micro-credentials Options for Ontario, Prepared for Ontario Council on Articulation and Transfer, March 2023
https://www.oncat.ca/sites/default/files/media-files/r2246_micro-credentials_final_report_21-3-23.pdf

The Seven Qualities of Microcredentials
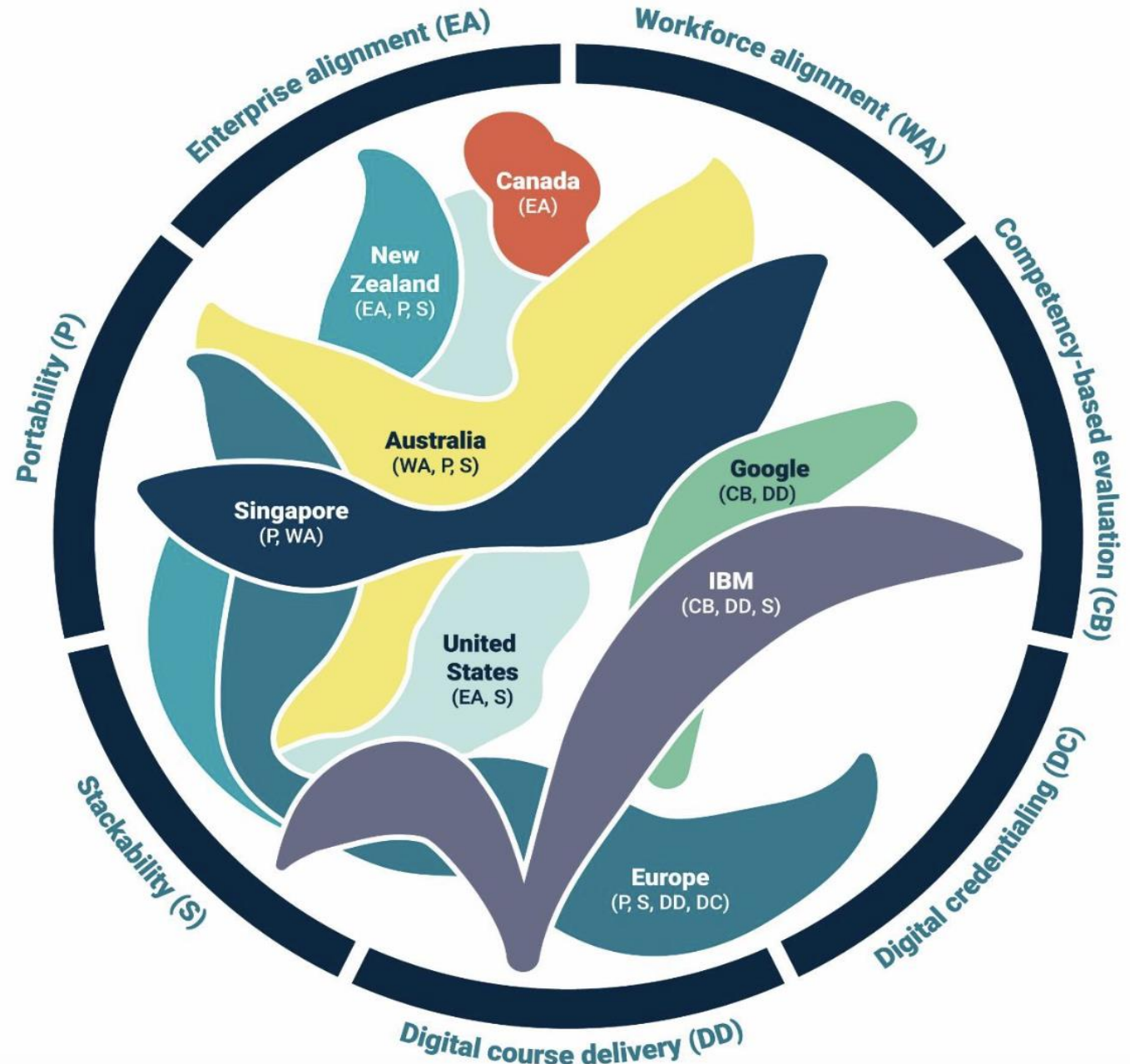
OECD: Contexts in which Micro-credentials are expected to play a role

- Upskilling and reskilling
- Employability
- Lifelong Learning
- More flexible, learner-centred education
- Access to and completion of education and training
- Student international mobility
- Social inclusion
- Active citizenship and well-being

OECD, 2023. Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities: https://www.oecd-ilibrary.org/docserver/9c4b7b68-en.pdf?expires=1683402111&id=id&accname=guest&checksum=EC532C674B9D2AB9D69D7DB18202E488

Way forward for governments

- Micro-credentials do not deliver on their potential automatically.
- For micro-credentials to play a role in enhancing learners' employability, facilitating access to higher education, improving degree completion, and promoting social inclusion, **policymakers need to make interventions to steer and support learners and providers.**

1	Micro-credential initiatives need clarity about their purpose and target population if they are to be effective in achieving their goals
2	Funding support for micro-credential learners and providers should be sustainable and ensure micro-credentials remain accessible to all
3	Achieving the full potential of micro-credentials will require changes to quality assurance and academic recognition policies
4	Information provision for learners needs to go beyond the development of an online information portal to reach a wider population
5	Public policies can encourage collaborations between education and training providers and industries in micro-credential development and delivery

OECD, 2023. Micro-credentials for Lifelong Learning and Employability: Uses and Possibilities: https://www.oecd-ilibrary.org/docserver/9c4b7b68-en.pdf?expires=1683402111&id=id&accname=guest&checksum=EC532C674B9D2AB9D69D7DB18202E488

3 clusters of micro-credentials

Skill Credential	Learning Unit	Short Learning Programmes
1-25 hours of learning	25-150 hours of learning	150-1500 hours of learning Typically consists of more than one learning unit
Awarded within the context of non-formal learning	Awarded within the context of formal learning and include options for assessment	Awarded within the context of formal learning and include options for assessment
Not explicitly quality assured by external QA	Often explicitly quality assured by external QA	Always explicitly quality assured by external QA
Linked to the acquisition of a specific competence	Linked to the acquisition of a set of learning outcomes	Linked to specific career progression goals
		Can be mapped to qualification frameworks, either as 'partial qualifications' or as a special category of micro-qualifications

Integrate micro-credentials into national and regional qualifications frameworks.

> **[The NQFs aim to]** *make qualifications easier to understand and compare. The NQFs classify qualifications by level, based on learning outcomes - that is, what the holder of a certificate or diploma is expected to know, understand, and be able to do. This classification reflects the content and profile of qualifications.*
>
> Source: Cedefop (2022).

==Two approaches for mapping micro-credentials to existing NQFs==:

- A **new micro-credential qualification type** may be established under the NQF.
- A micro-credential may be **outlined as a subunit** of an existing qualification on the NQF.

Quality Assurance

✓Incorporate micro-credentials into your **institutional quality assurance** system.

> ❑Delivery of courses, assessment and certification.
> ❑Feedback from learners and external stakeholders (such as employers and professional bodies)

✓**Externally review** the quality of your institution.

✓**Publish** methods and results of internal and external quality assurance.

Transparency

✓**Publish the learning outcomes**, notional **workload** and **credit** points of micro-credentials.

  ❑Document link with teaching, learning and assessment criteria and methods.

  ❑Document link with formal taxonomies such as skill or competence frameworks (e.g. ESCO).

  ❑Publish information on micro-credentials using the standard model.

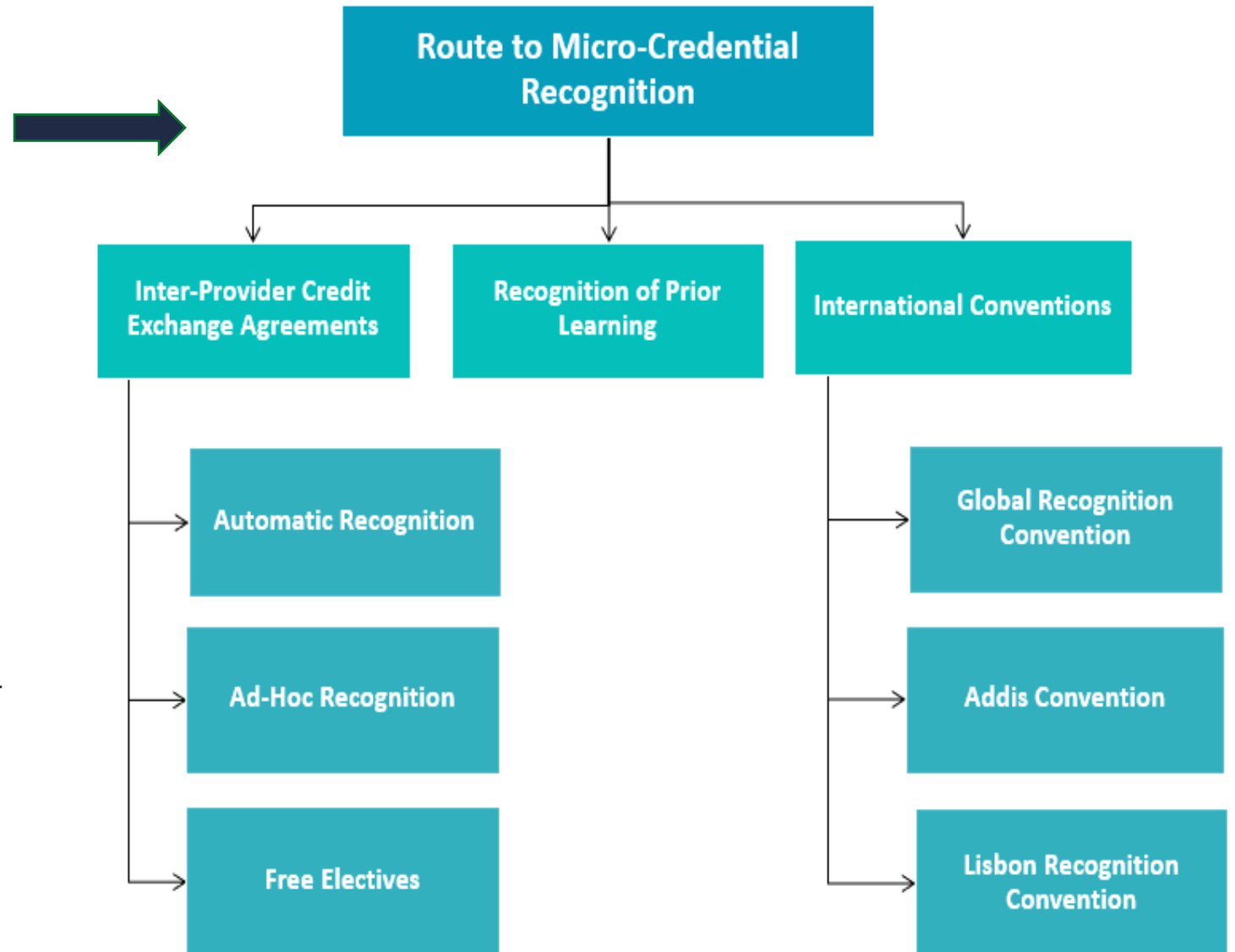✓**Integrate micro-credentials into national and regional qualifications frameworks.**

For education or training purposes:

✓ **Enable multiple, feasible routes** for micro-credential recognition

✓ **Seek collaboration** with private or public sector entities (which may include professional bodies, companies and other enterprises) to co-design and offer micro-credentials which may be automatically recognised for employment and education purposes.

For employment purposes:

✓ Non-formal or informal learning providers should tailor recommendations in the Micro-Credentials Guide to design and offer fit for purpose interoperable micro-credentials (e.g. as part of **Continuous Professional Development** schemes).

Route to Micro-Credential Recognition

- **Inter-Provider Credit Exchange Agreements**
  - Automatic Recognition
  - Ad-Hoc Recognition
  - Free Electives
- **Recognition of Prior Learning**
- **International Conventions**
  - Global Recognition Convention
  - Addis Convention
  - Lisbon Recognition Convention

ACQF

In the context of European Qualifications Framework (EQF)

EU: Recommendation on European approach to micro-credentials for LLL and employability: 10 principles

"Use micro-credentials, where appropriate, as a tool to <u>strengthen and complement</u> existing learning opportunities, increase participation in lifelong learning"

1. Quality
2. Transparency
3. Relevance
4. Valid assessment
5. Learning pathways

6. Recognition
7. Portability
8. Learner-centred
9. Authentic
10. Information and guidance

Adopted 16/06/2022: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32022H0627%2802%29

ANNEX I

Union standard elements to describe a micro-credential

This annex includes a list of common Union standard elements to describe micro-credentials that can be used as a resource to support implementation.

Mandatory elements:	Identification of the learner
	Title of the micro-credential
	Country/Region of the issuer
	Awarding body
	Date of issuing
	Learning outcomes
	Notional workload needed to achieve the learning outcomes (in ECTS credits, wherever possible)
	Level (and cycle, if applicable) of the learning experience leading to the micro-credential (EQF, QF-EHEA), if applicable
	Type of assessment
	Form of participation in the learning activity
	Type of quality assurance used to underpin the micro-credential
Optional elements, where relevant (non-exhaustive list)	Prerequisites needed to enrol in the learning activity
	Supervision and identity verification during assessment (unsupervised with no identity verification, supervised with no identity verification, supervised online, or onsite with identity verification)
	Grade achieved
	Integration/stackability options (standalone, independent micro-credential/integrated, stackable towards another credential)
	Further information

These standard elements will be included in a Union data model[1] that specifies a common format for describing micro-credentials. The data model will be available as an open standard

Elements to structure and design a Micro-credential (EU Recommendation on a commin approach to micro-credentials)
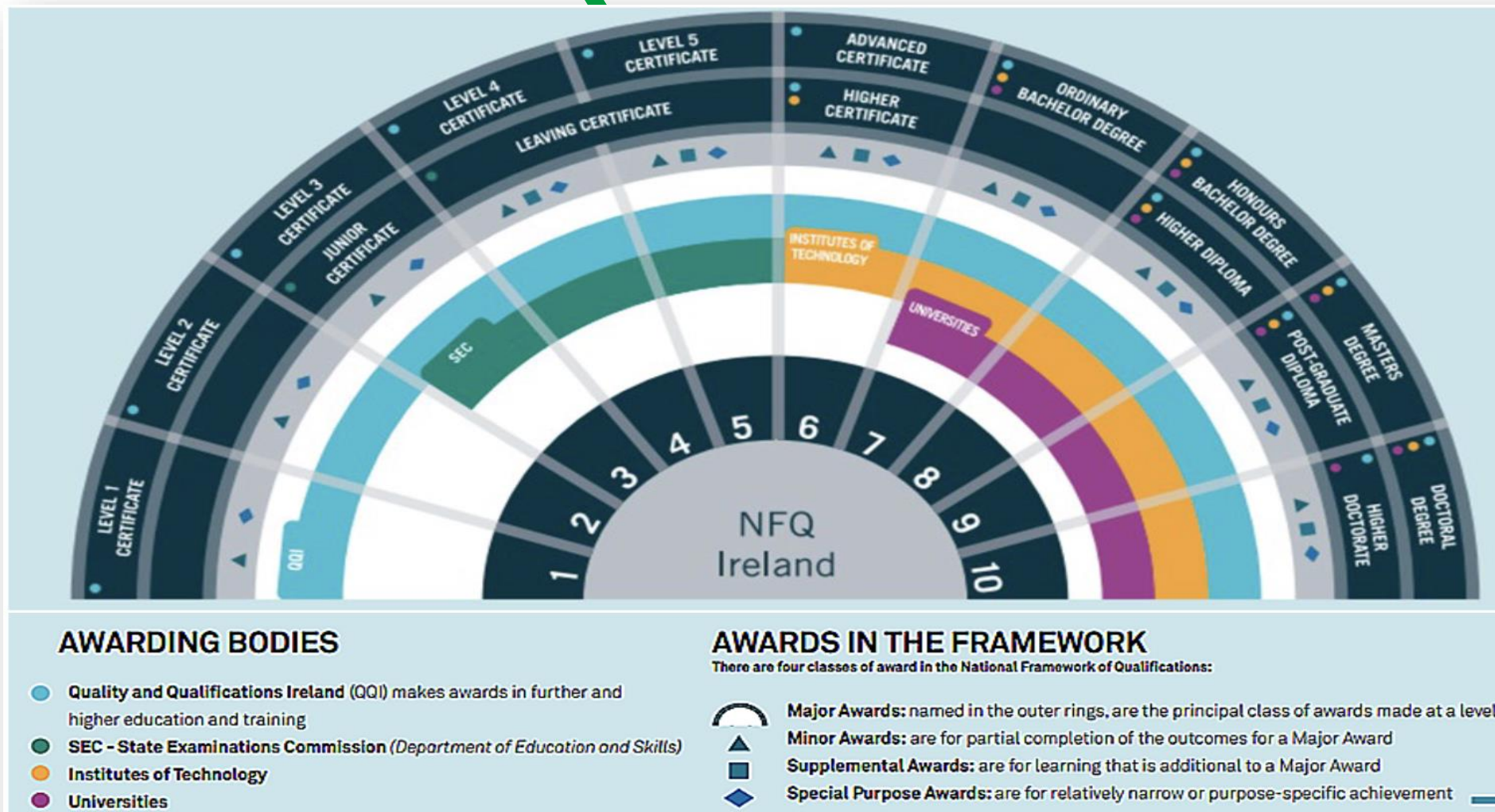
In the NFQ of Ireland

Ireland: NFQ

Figure 3: The Irish NFQ. Source: Quality and Qualifications Ireland (2021).

Micro-credentials are awarded by universities, institutes of technologies, other awarding bodies, the State Examinations Commission and Quality and Qualifications Ireland (QQI)[11].

Ireland: micro-credentials in the NFQ

Micro-credentials are incorporated at every level of the Irish National Framework of Qualifications

They are represented in three different forms:

"Minor Awards" (at any level, outcomes of partially completed "Major Awards" can be awarded).

"Supplemental Awards" (from Level 4 onwards, learning in addition to "Major Awards" can be awarded).

"Special Purpose Awards" (specific achievements can be awarded at any level)

In the National Qualifications Catalogue (register) - Portugal

Portugal: National Catalogue Qualifications - ANQEP (UFCD)

https://catalogo.anqep.gov.pt/

- UFCD: proxy of micro-credentials
- Access: National Catalogue of Qualifications – ANQEP.
- Can be combined into a full qualification.
- UFCD: Volume of learning: 2.25 – 4.5 credit points
- Separate UFCD: does not give a <u>level of qualification</u>.

UFCD: Unidade de Formação de Curta Duração; Unit of Training of Short Duration

In the National Micro-credentials Framework Australia

Australia National Micro-Credential framework

The Australian Government (2021) adopted the National Micro-Credentials Framework, which uses the following definition:

- A micro-credential is a certification of assessed learning or competency, with a minimum volume of learning of one hour and less than an Australian Qualifications Framework (AQF) award qualification, that is additional, alternate, complementary to or a component part of an AQF award qualification.

What can constitute a micro-credential?

- TVET skill sets or units of competency.
- Modularised, assessed components of existing higher education curriculum or subjects.
- Industry learning that is assessed (such as vendor certifications, professional learning).
- Other forms of assessed learning or competencies (e.g. Vocational Education/Higher Education /Industry courses not currently accredited by a regulatory authority, and those by other providers).

What does not constitute a micro-credential?

- Unassessed learning or courses, including work-integrated learning without an assessment.
- Badges which are obtained through participation only (i.e. without an assessment).
- Formal qualifications within the AQF and macro-credentials, including diplomas, certificates and master's degrees.

Australia: National Micro-credentials Marketplace

- https://www.microcredseeker.edu.au/
  - **Microcred Seeker: "The new way to get ahead"**
  - Goal: Seek, explore and compare courses (tertiary education and training providers)

- Course levels – according to Dreyfus model:
  - ✓Novice
  - ✓Advanced beginner
  - ✓Competent
  - ✓Proficient
  - ✓Expert

In the NQF of New Zealand

New Zealand Qualifications Framework

Micro-credentials can be listed at any level (from 1 to 10) of the New Zealand Qualifications and Credentials Framework (NZQCF).

They must:

- Have at least one credit (10 learning hours) and are typically more than 5 credits and less than 40 credits.

- State the learning outcomes, demonstrate that they meet an industry or community need and include an assessment component.

- Vocational micro-credentials must include any relevant skills standards

New Zealand Qualifications Authority

Final version for signatures for the purposes of section 452 of the Education and Training Act 2020

NZQA Board:	....	Date:	28 Nov 2022
Minister of Education:	*CA*	Date:	15/12/22

Micro-credential Approval and Accreditation Rules 2022

1. **Authority**
1.1 These Rules are made under section 452 of the Education and Training Act 2020.

2. **Commencement**
2.1 These Rules commence on the 28th day after the date of approval by the Minister under section 452(5) of the Education and Training Act 2020.

Register of NZQA-approved Micro-credentials

Keyword

Developer name or Education Organisation number

Search

421 results found. Displaying page 1 of 3.
Please refine your search, if required.

Next Page >>

Title	Level	Credits	Developer	Approval Date	Review Date	
Core Construction of Forestry Roads (Micro-Credential)	3	40	Muka Tangata - People, Food and Fibre Workforce Development Council	01/2024	30/12/2026	<
ADAS (Trainee) Offshore ROV Pilot (Micro-credential)	5	20	Omne Marine Training Centre Limited	08/2022	02/08/2024	<
ADAS Diver Medical Technician (Offshore) (Micro-credential)	5	10	Omne Marine Training Centre Limited	07/2022	02/08/2024	<
ADAS Diver Medical Technician (Onshore) (Micro-credential)	5	10	Omne Marine Training Centre Limited	07/2022	30/10/2025	<
ADAS Diver Medical Technician (Refresher) (Micro-credential)	5	5	Omne Marine Training Centre Limited	08/2022	02/08/2024	<
ADAS Offshore Supervisor Trainee (Air) (Micro-credential)	6	6	Omne Marine Training Centre Limited	08/2022	02/08/2024	<
ADAS Onshore ROV Pilot (Micro-credential)	4	29	Omne Marine Training Centre Limited	08/2022	02/08/2024	<

421 micro-credentials in online register. With NQF level (3 to 8). Credits: 5-40...

Excavator Operator (Micro-credential)	3	29	Besafe Training Limited	22/09/2023

Aim

The aim of this micro-credential is to train skilled operators to operate and manage hydraulic excavators on construction sites, so that they are able to place materials with minimal spillage, stock-pile and other related activities in accordance with company and industry standards including health and safety legislation.

This micro-credential targets excavators' operators who are employed with no formal training or qualification. It will also enable learners to meet the Construct Safe Tier 2 Health and Safety Competency Test for excavators.

Learners will be assessed against unit standard 17310 and must complete an "WTR" endorsement training (unit standards 16701, 16702, 16703) that is pre-requisite for operating excavator to successfully graduate from this micro-credential.

Outcome

Operate a special-type vehicle safely and legally by obtaining an W, T or R Licence endorsement

Apply excavation health and safety regulations in accordance with company and job requirements

Perform site and excavator checks

Operate excavator to load, unload, stock-pile, strip, and trim materials

Perform special lifting and post-operational procedures

Education Organisations that can deliver this Micro-credential

Besafe Training Limited

Example 2: Cybersecurity for risk and security management

Cybersecurity for Risk and Security Management (Micro-credential)	7	30	New Zealand School of Education Limited	10/2023	29/09/2025	⌄

Aim

This micro-credential provides graduates within New Zealand and overseas with expertise in information security and risk management. Its relevance spans various stakeholders, enhancing career prospects for learners, empowering Māori communities in digital safety, aiding industries and employers with data protection, meeting the demand for specialists in professions, and bolstering security awareness in communities. Graduates will be able to demonstrate skills in governance, risk management, compliance, and security program development, preparing them to identify and mitigate risks while aligning security with organisational goals. This micro-credential serves as a gateway to advanced internationally recognised certifications such as ISACA CISM and CRISC. Culturally, it promotes diversity, opening cybersecurity roles for Māori learners, while contributing to community well-being and New Zealand's cybersecurity objectives.

Outcome

Graduates of this micro-credentials will be able to:

- Analyse information security governance as it applies to the business environment.
- Apply information security risk management techniques to identify, assess, and mitigate potential threats and vulnerabilities within an organisation's information systems.
- Design and implement an information security program for a business within the context of industry standards and frameworks.
- Evaluate incident management best practice as applicable in a business setting.
- Apply information technology and security principles to strengthen an organisation's security posture.

Education Organisations that can deliver this Micro-credential

New Zealand Skills and Education College

ACQF

NZQA
Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

February 2024

Stacking Micro-credentials

This document guides qualification and programme developers on stacking micro-credentials within a programme.

What is stacking?

Stacking, in the context of this document, means including *one or more* approved standalone micro-credentials within a programme that NZQA formally recognises.

Micro-credentials can form part of a programme that leads to a qualification if:

- the micro-credential aligns with and contributes to the qualification's outcomes and strategic purpose, and
- the overall design of the programme is coherent.

NZQA approval is required to stack micro-credential(s) in a programme.

Why stack micro-credentials in a programme?

A programme that includes micro-credentials can offer learners

- a meaningful learning pathway for accumulating relevant and necessary skills
- the opportunity to gain valuable skills in a shorter time
- the opportunity to check interest and aptitude before committing to a whole programme.

Six considerations

    Rationale

    Structure

    Enrolment

    Alignment to the programme

    Credit Recognition Transfer (CRT)

    Ongoing review

https://www2.nzqa.govt.nz/assets/Tertiary/Resources-for-tertiary-providers/Stacking-micro-credentials.pdf

There are six key areas to consider. Questions and answers follow:

Rationale

What is the rationale for stacking a micro-credential in a programme?	The rationale for including a micro-credential in a programme should be clear to establish meaningful learning pathways for the learners. Stakeholders' support for including a micro-credential in the programme should be evident.

Structure

How will the micro-credential function as a programme component?	The micro-credential must fit precisely into the programme as either <u>a compulsory or elective component.</u> This means the following should remain the same as the approved standalone micro-credential: - Title - Level - Credit - Learning outcomes - Indicative Content – learning materials/resources/activities - Assessment method(s) - Unit or Skill standard(s) - Related Regulations. The learning outcomes of the component (micro-credential) should align with the graduate profile outcomes (GPOs) of the qualification to which the programme leads.
Can the programme consist entirely of stacked micro-credentials?	Programmes at levels 1-6 can be comprised entirely of stacked micro-credentials. For programmes at the degree level, components at the end or in the last year are based on augmentation and scaffolding of the knowledge and skills learned initially in the programme. Therefore, having micro-credentials stacked at the end of the programme will not enable the learner to achieve the analytical rigour and mastery required at high-level qualifications.

Enrolment

Do students have to enrol in both micro-credential(s) and the programme?	If the student is enrolled in a programme that includes micro-credentials as components, the enrollment system should be set up to ensure the student is enrolled on the micro-credentials and the programme simultaneously. As for achievement of the micro-credential and qualification (programme), these must be reported to NZQA and included on the learner's academic record. If the learner has already completed/achieved a micro-credential, which is part of a programme, simulatenous enrolment in the micro-credential and programme is not required.

Alignment to the Programme

What is the impact of stacking micro-credentials in a programme?	The learning outcomes of the component (micro-credential) should align with the graduate profile outcomes (GPOs) of the qualification to which the programme leads. Programme coherence should be checked to ensure alignment with the qualification, its conditions and requirements. Micro-credential entry requirements should be appropriate for the learner to enrol in the programme. The programme regulations should have been reviewed and confirmed to include each micro-credential. There should be no monitoring/moderation issues related to the existing programme in which stacking is proposed.
What more must be considered when stacking micro-credentials in a degree level 7 or above programme?	The intended delivery staff should be research-active if the stackable micro-credential is in a degree programme.

Credit recognition transfer (CRT)

What if the student has already completed the micro-credential before enrolling in the programme?	Clear and robust policies and procedures relating to CRT are essential when considering the stacking of micro-credentials to recognise the learner's achievement of the micro-credential if achieved before enrolling in the programme. Credit recognition transfer (CRT) is where one institution recognises credit gained at another institution towards a qualification or micro-credential. CRT generally describes credit from formal learning provided and credentialed by a tertiary provider.

Ongoing review (after stacking is approved)

How is ongoing alignment between the micro-credentials and the programme ensured?	Changes made to the component (stacked micro-credentials) in the programme (via a change application) do not mean an automatic change to the standalone micro-credential will be applied by NZQA and vice versa. If a micro-credential is discontinued or set to an expiring status, this will have an impact on the programme in which the micro-credential is stacked. The programme must be updated before the standalone micro-credential is discontinued. Education organisations should note: • changing a micro-credential included in a programme requires confirming the alignment of the changes within the programme. • the programme change application (if reviewed) should be submitted at the same time as the micro-credential change application.

Microcredencial Observatory

Micro-credential Observatory: a great source

The Research Observatory on Micro-credentials (ROM) is a NIDL initiative in partnership with the ECIU University. The aim is to provide a curated and regularly updated collection of major reports, policy initiatives and research-related publications on the growth of micro-credentials in higher education and lifelong learning more generally.

- NIDL Activities

- NIDL Research

- Major Policy Initiatives

- National & International Reports

- Useful Reading: Articles, Books & Papers

- Events, Conferences and Webinars

- Microcredentials *Sans Frontières* Network

- Large number of articles published in 2022-2023: https://www.dcu.ie/nidl/micro-credential-observatory

Websites, resources on micro-credentials: open information

- **In NQF registers:**
  - New Zealand (NZQA): https://www.nzqa.govt.nz/providers-partners/approval-accreditation-and-registration/micro-credentials/
    - Register of micro-credentials NZQA: https://www.nzqa.govt.nz/nzqf/search/microcredentials.do
    - Up to 40 credits – levels 3 to 8 of NQF

  - **Portugal: National Qualifications Catalogue**: https://catalogo.anqep.gov.pt/
    - 8663 courses of short duration (75-350 hours of learning)

- **Toolkits: Ontario Micro-credentials Toolkit:** https://ecampusontario.pressbooks.pub/microcredentialtoolkit/

Websites, resources on micro-credentials: open information (2)

- **ACQF website:** https://acqf.africa/resources/micro-credentials

- **Cedefop**: https://www.cedefop.europa.eu/en/projects/microcredentials-labour-market-education-and-training

- **ETF:** Guideline to design, issue and recognise Micro-Credentials. https://www.etf.europa.eu/sites/default/files/2023-05/Micro-Credential%20Guidelines%20Final%20Delivery.pdf

- EU Recommendation 2022: A European Approach to Micro-Credentials: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2022.243.01.0010.01.ENG

- **New survey**: https://www.holoniq.com/notes/micro-credentials-survey-2023-insights?utm_campaign=Weekly%20Education%20Marketing%20Newsletter&utm_medium=email&_hsmi=257668719&_hsenc=p2ANqtz-9AW9h3XTlKkCALx1MFTX6515BlTWs4V5GeO7EdAbCUYOBGELgA3TN43nQjKY7B30_AxaBgAGsBVj7OKaftMoJ4yi8Dvw&utm_content=257668719&utm_source=hs_email

Annex

For your further reading: ACQF level descriptors

The ACQF descriptors:
- are regional, generic, broad statements of learning outcomes complexity that can accommodate and value all forms of learning (formal, non-formal and informal)
- can be applied across all African Union countries and all education and training sectors

10 levels

Detailed glossary explaining terms in the ACQF descriptors

3 domains

1.
"Knowledge" includes various kinds of knowledge such as facts, principles and theories in various areas

2.
"Skills" refer to the ability to use knowledge to respond to information and address problems. Skills include cognitive, communication, digital, green, innovation, practical and social skills.

3.
"Autonomy and responsibility" refers to the context and extent of the application of autonomy and responsibility

Underpinning principles of ACQF LDs

learning outcomes orientation

transparency

Future orientation

Generic in scope

Developmental and cumulative

Conceptual and technical clarity

ACQF level descriptors: domains of learning - definition

Level	Domains of learning		
	Knowledge	Skills	Autonomy and responsibility
Definition of the domains of learning	In the context of ACQF "Knowledge" includes various kinds of knowledge such as facts, principles, and theories in various areas	In the context of ACQF "Skills" refer to the ability to use knowledge to respond to information and address problems. Skills include cognitive, communication, digital, green, innovation, practical and social skills.	In the context of ACQF "Autonomy and responsibility" refers to the context and extent of the application of autonomy and responsibility

ACQF descriptors (horizontal logic and glossary) Example (simple, L1)

Level	Knowledge	Skills	Autonomy and Responsibility
Level 1: The learning outcomes related to formal, non-formal, and informal learning at this level include:	**Simple** knowledge, literacy, and numeracy	Simple communication, cognitive and practical skills required to follow simple instructions, and use simple, **repetitive** solutions to address simple problems	**Highly structured,** repetitive contexts under **close** supervision and guidance taking **minimal** responsibility for self
Level 2: The learning outcomes related to formal, non-formal and informal learning at this level include:	**Basic** knowledge incorporating comprehension and recall of factual and operational knowledge in some areas	Basic communication, cognitive and practical skills required to use **concrete** information, ideas and **known** solutions to address **straight-forward** problems	**Structured** contexts under limited supervision and guidance taking **limited** responsibility for self and group outcomes

Meta-descriptor glossary

Term	In the ACQF level descriptors the term:	Progression in complexity	Levels
Simple	Means uncomplicated and easy to understand. It can be used without experience and is found at the lowest level of complexity	Simple to straightforward/ basic	L1

ACQF descriptors (horizontal logic and glossary) Example (mastery, L9)

Level	Knowledge	Skills	Autonomy and Responsibility
Level 9: The learning outcomes related to formal, non-formal and informal learning at this level include:	**Mastery** of a complex body of knowledge **at the forefront** of a discipline/area	Skills mastery required to demonstrate originality and new insights in research and/or innovation and **formulate and test** theories to show mastery of highly complex, abstract problems	**Highly specialised** contexts demonstrating mastery in autonomy and responsibility
Level 10: The learning outcomes related to formal, non-formal, and informal learning at this level include:	**Substantial and original** knowledge contribution that extends the forefront of a discipline/area and/or **at the interface** between disciplines/areas	**Expert** skills and techniques that demonstrate innovation, interpretation and creation of new ideas required to critically evaluate, formulate, and test theories to address **emergent, new,** and critical problems	Emergent new contexts demonstrating expertise in management of new ideas

Meta-descriptor glossary

Term	In the ACQF level descriptors the term:	Progression in complexity	Levels
Mastery	Means superiority in knowledge and skills	Mastery to expertise	L9

ACQF Level descriptors 1-5

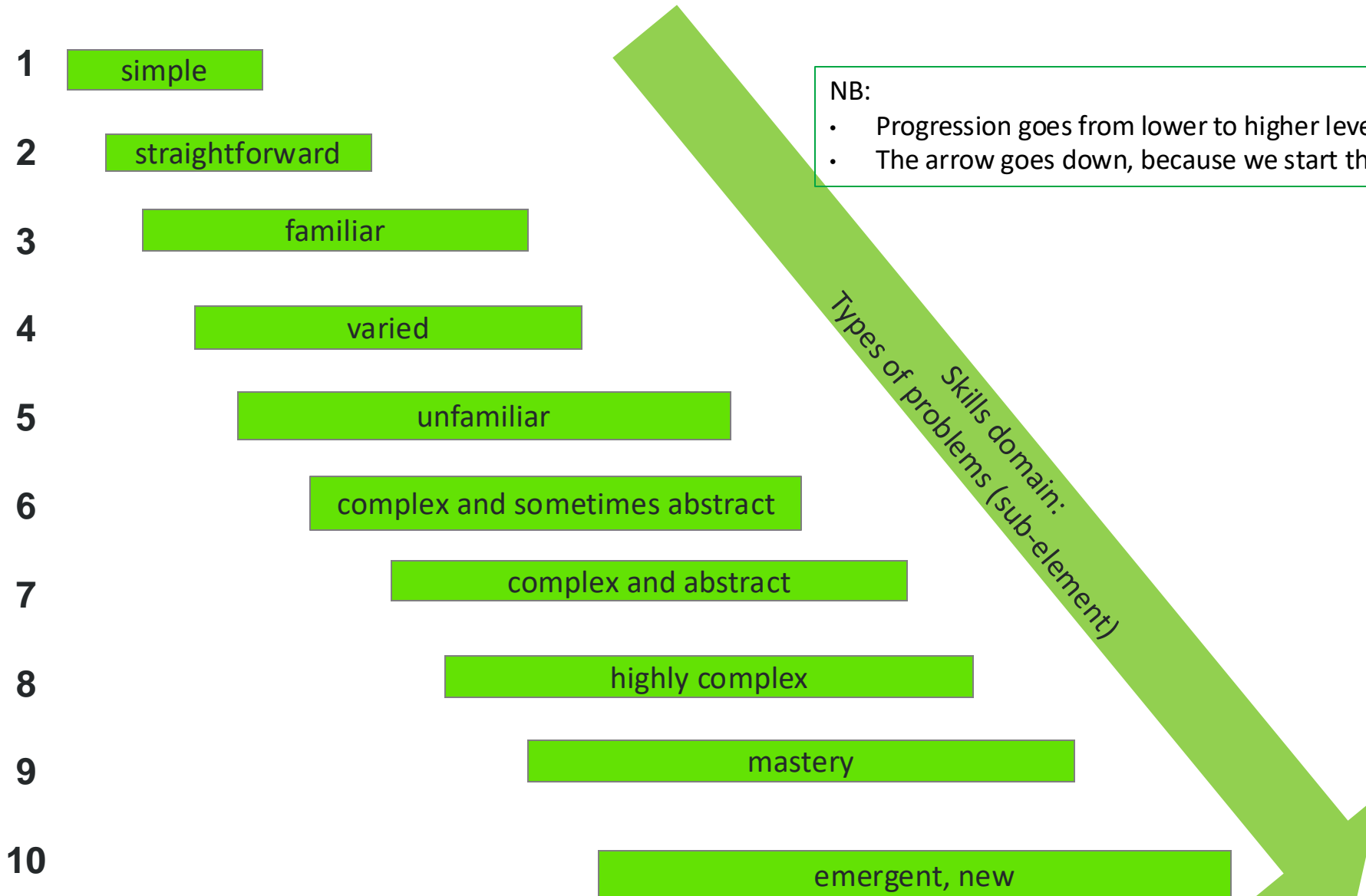| Level	Knowledge	Skills	Autonomy and Responsibility
Level 1: The learning outcomes related to formal, non-formal, and informal learning at this level include:	<u>Simple</u> knowledge, literacy, and numeracy	Simple communication, cognitive and practical skills required to follow simple instructions, and use simple, <u>repetitive</u> solutions to address simple problems	<u>Highly structured,</u> repetitive contexts under <u>close</u> supervision and guidance taking <u>minimal</u> responsibility for self
Level 2: The learning outcomes related to formal, non-formal and informal learning at this level include:	<u>Basic</u> knowledge incorporating comprehension and recall of factual and operational knowledge in some areas	Basic communication, cognitive and practical skills required to use <u>concrete</u> information, ideas and <u>known</u> solutions to address <u>straight-forward</u> problems	<u>Structured</u> contexts under limited supervision and guidance taking <u>limited</u> responsibility for self and group outcomes
Level 3: The learning outcomes related to formal, non-formal, and informal learning at this level include:	<u>Factual and operational</u> knowledge incorporating some theoretical aspects in some areas	A <u>range</u> of communication, cognitive, practical and technical skills required to <u>interpret</u> and communicate ideas and detailed information, and <u>select and use</u> known solutions to address <u>familiar</u> problems	<u>Predictable</u> contexts under <u>routine</u> supervision and guidance, with <u>initiative</u> for self-responsibility and some responsibility for group outcomes
Level 4: The learning outcomes related to formal, non-formal and informal learning at this level include:	Mainly factual, operational or technical knowledge <u>incorporating theoretical</u> aspects in one or more areas	<u>Well-developed technical</u> skills required to analyse information and new ideas, <u>make informed judgements,</u> communicate outcomes and apply <u>varied</u> solutions to varied (familiar and unfamiliar) problems	Varied (predictable and unpredictable) contexts with adaptability and initiative for self-direction under general guidance, taking <u>full responsibility for self,</u> some planning and responsibility for group outcomes and initiative for responsibility for others
Level 5: The learning outcomes related to formal, non-formal, and informal learning at this level include:	Mainly technical or theoretical knowledge with <u>substantial depth</u> in a discipline/area	A <u>range</u> of well-developed technical skills, <u>with some specialisation</u>, required to analyse information and new ideas, construct and communicate a <u>coherent argument</u>, and apply a <u>range of solutions</u>, often in combination, to address <u>unfamilia</u>r problems	<u>Unpredictable</u> contexts with full autonomy and <u>full responsibility for self and group outcomes</u>, and some responsibility for others

To assist the comparison of NQF descriptors with ACQF descriptors:
- It will help to identify key words in each level
- This also assists with checks for horizontal coherence

Level	Knowledge	Skills	Autonomy and Responsibility
Level 6: The learning outcomes related to formal, non-formal and informal learning at this level include:	**Highly technical** or theoretical knowledge, with specialisation in a discipline/area	Highly technical and **specialised** skills required to collate, analyse, synthesise, and communicate a range of information and new ideas, and **formulate or adapt** different solutions to address **complex and sometimes abstract** problems	**Highly variable** contexts with **well-developed autonomy** and **responsibility for self and group outcomes and responsibility for resources and processes**
Level 7: The learning outcomes related to formal, non-formal and informal learning at this level include:	**Advanced analytical and/or specialised** knowledge of a discipline/area	Advanced, specialised skills required to demonstrate advanced analysis and initiative for **new insights** and ideas in research and/or innovation, and formulate **advanced solutions** to address **complex and abstract** problems	**Complex and variable** contexts with **advanced autonomy and responsibility**
Level 8: The learning outcomes related to formal, non-formal and informal learning at this level include:	**Highly advanced,** complex knowledge of a discipline/area	Highly advanced, complex skills required to demonstrate highly advanced analysis, communicate new insights and ideas in research and/or innovation, and formulate highly advanced solutions to address **highly complex and abstract** problems	Highly complex contexts with some specialisation demonstrating highly advanced autonomy and responsibility
Level 9: The learning outcomes related to formal, non-formal and informal learning at this level include:	**Mastery** of a complex body of knowledge **at the forefront** of a discipline/area	Skills mastery required to demonstrate originality and new insights in research and/or innovation and **formulate and test** theories to show mastery of highly complex, abstract problems	**Highly specialised** contexts demonstrating mastery in autonomy and responsibility
Level 10: The learning outcomes related to formal, non-formal, and informal learning at this level include:	**Substantial and original** knowledge contribution that extends the forefront of a discipline/area and/or **at the interface** between disciplines/areas	**Expert** skills and techniques that demonstrate innovation, interpretation and creation of new ideas required to critically evaluate, formulate, and test theories to address **emergent, new,** and critical problems	Emergent new contexts demonstrating expertise in management of new ideas

To assist the comparison of NQF descriptors with ACQF descriptors:
- It will help to identify key words in each level
- This also assists with checks for horizontal coherence

Vertical logic (cumulative, progression in complexity)

1 — simple

2 — straightforward

3 — familiar

4 — varied

5 — unfamiliar

6 — complex and sometimes abstract

7 — complex and abstract

8 — highly complex

9 — mastery

10 — emergent, new

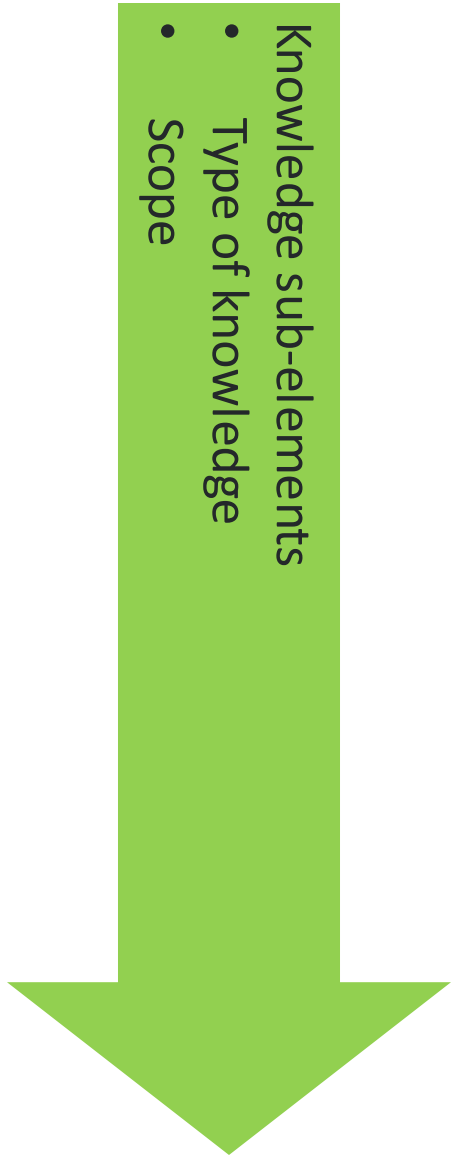Skills domain: Types of problems (sub-element)

NB:
- Progression goes from lower to higher levels of complexity
- The arrow goes down, because we start the levels matrix at level 1

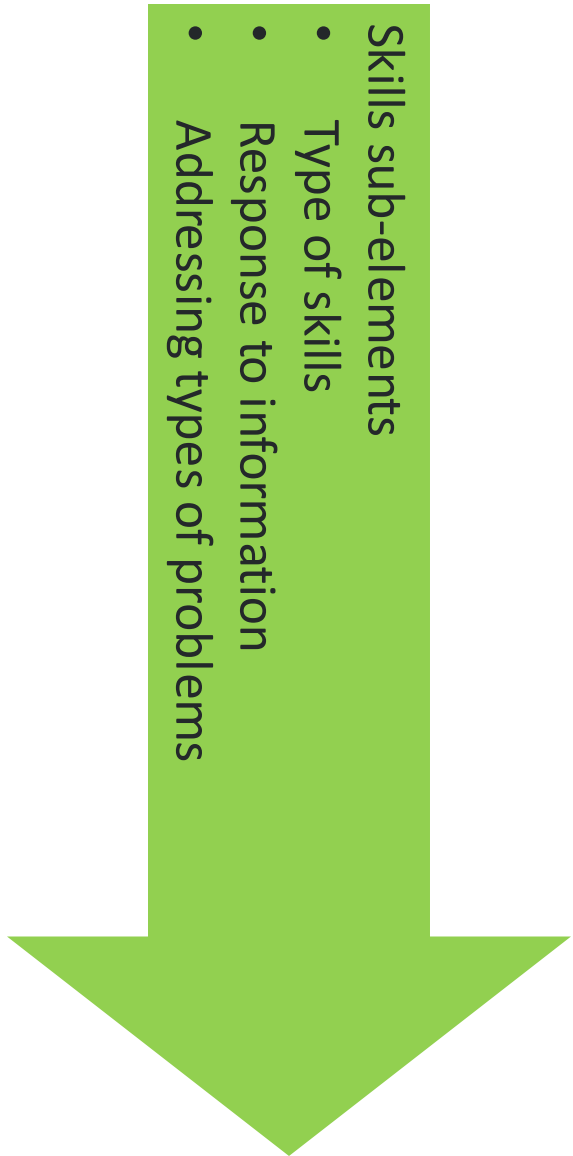To assist the comparison of NQF descriptors with ACQF descriptors:
- It will help to identify the progression in complexity
- This also assists with checks for vertical coherence

ACQF

Knowledge domain		
Level	**Type of Knowledge**	**Scope**
Level 1	Simple knowledge, literacy and numeracy	
Level 2	Basic knowledge incorporating comprehension and recall of factual and operational knowledge	In some areas
Level 3	Factual and operational knowledge incorporating some theoretical aspects	In some areas
Level 4	Mainly factual, operational or technical knowledge incorporating theoretical aspects	In one or more areas
Level 5	Mainly technical or theoretical knowledge with substantial depth	In a discipline/ area
Level 6	Highly technical or theoretical knowledge, with specialisation	In a discipline/ area
Level 7	Advanced analytical, and/ or specialised knowledge	Of a discipline/ area
Level 8	Highly advanced, complex knowledge	Of a discipline/ area
Level 9	Mastery of a complex body of knowledge	At the forefront of a discipline/ area
Level 10	Substantial and original knowledge contribution	That extends the forefront of a discipline/ area and/ or at the interface between disciplines/ areas

The learning outcomes related to formal, non-formal and informal learning at these levels include:

Knowledge sub-elements
- Type of knowledge
- Scope

	Skills domain		
Level	**Type of skills**	**Response to information**	**Addressing types of problems**
Level 1	Simple communication, cognitive and practical skills	Follow simple instructions	Use simple repetitive solutions to address simple problems
Level 2	Basic communication, cognitive, and practical skills	Use concrete information and ideas	Use known solutions to address straightforward problems
Level 3	A range of communication, cognitive, practical and technical skills	Interpret and communicate ideas and detailed information	Select and use known solutions to address familiar problems
Level 4	Well-developed technical skills	Analyse information and ideas, make informed judgements and communicate outcomes	Apply varied solutions to address varied (familiar and unfamiliar) problems
Level 5	A range of well-developed technical skills with some specialisation	Analyse information and new ideas, and construct and communicate coherent arguments	Apply a range of solutions often in combination to address unfamiliar problems
Level 6	Highly technical and specialised skills	Collate, analyse, synthesise, and communicate a range of information and new ideas	Formulate or adapt different solutions to address complex and sometimes abstract problems
Level 7	Advanced skills	Demonstrate advanced analysis and initiative for new insights and ideas in research and/ or innovation	Formulate advanced solutions to address complex and abstract problems
Level 8	Highly advanced, complex skills	Demonstrate highly advanced analysis and communicate new insights and ideas in research and/or innovation	Formulate highly advanced solutions to address highly complex and abstract problems
Level 9	Mastery	Demonstrate originality and new insights in research and/or innovation	Formulate and test theories to show mastery of highly complex, abstract problems
Level 10	Expert skills and techniques	Demonstrate innovation, interpretation and creation of emergent and new ideas	Critically evaluate, formulate and test theories to address emergent, new and critical problems

Skills sub-elements
- Type of skills
- Response to information
- Addressing types of problems

	Level	Autonomy and responsibility domain		
The learning outcomes related to formal, non-formal and informal learning at these levels include:		Context	Autonomy	Responsibility
	Level 1	Highly structured, repetitive contexts	Close supervision and guidance	Minimal responsibility for self
	Level 2	structured contexts	Limited supervision and guidance	Limited responsibility for self and group outcomes
	Level 3	Predictable contexts	Routine supervision and guidance and initiative for adaptability	Initiative for self-responsibility and some responsibility for group outcomes
	Level 4	Varied (predictable and unpredictable) contexts	Adaptability and initiative for self-direction under general guidance	Full self-responsibility, some planning and responsibility for group outcomes and initiative for responsibility for others
	Level 5	Unpredictable contexts	Full autonomy	Full responsibility for self and group outcomes and some responsibility for others
	Level 6	Highly variable contexts	Well-developed autonomy	Well-developed responsibility for self and group outcomes; responsibility for resources and processes
	Level 7	Complex and variable contexts	Advanced autonomy	Advanced
	Level 8	Highly complex contexts with some specialisation	Highly advanced autonomy	Highly advanced
	Level 9	Highly specialised contexts	Mastery of autonomy	Mastery
	Level 10	Emergent, new contexts	Expertise	Expertise in management of new ideas

Autonomy and responsibility sub-elements
- Context
- Autonomy
- Responsibility