2025

Hierarchies of Qualification Classification Systems in the South African Education System and Labour Market

Classification of Qualifications in Terms of High, Medium, and Low Skill Levels

higher education & training
Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

NSF
National Skills Fund
FUNDING TO SKILL OUR NATION

LMI
LABOUR MARKET INTELLIGENCE

University of Cape Town · Universiteit van Kaapstad · iYunivesithi yaseKapa

DPRU
DEVELOPMENT POLICY RESEARCH UNIT

© Published in 2025 by:

Department of Higher Education and Training
Private Bag X174
Pretoria 0001
www.dhet.gov.za

2025

Hierarchies of Qualification Classification Systems in the South African Education System and Labour Market

Classification of Qualifications in Terms of High, Medium, and Low Skill Levels

Centre for Researching Education and Labour, University of the Witwatersrand

Acknowledgements

The Development Policy Research Unit would like to thank everyone who assisted with and contributed to this publication. We extend our gratitude to the Department of Higher Education and Training for their guidance and input throughout the process.

Author

Centre for Researching Education and Labour, University of the Witwatersrand

Citation

Development Policy Research Unit (2024). *Hierarchies of Qualification Classification Systems in the South African Education System and Labour Market: Classification of Qualifications in Terms of High, Medium, and Low Skill Levels.* Labour Market Intelligence research programme, Department of Higher Education and Training.

Table of Contents

List of Figures 5
List of Tables 5
Acronyms and Abbreviations 6

PART 1

INTRODUCTION AND METHODOLOGY 8

1.1 Introduction 9
1.2 Methodology 9

PART 2

THE CLASSIFICATION OF QUALIFICATIONS IN TERMS OF HIGH, MEDIUM, AND LOW SKILLS 11

2.1 The National Qualifications Framework 12
2.2 The Higher Education Qualifications Sub-Framework 15
2.3 The Occupational Qualifications Sub-Framework 17
2.4 The General and Further Education and Training Qualifications Sub-Framework 20

PART 3

INTERNATIONAL APPROACHES TO CLASSIFYING QUALIFICATIONS 23

3.1 The Use of Level Descriptors 24
3.2 Case Study: India's Vocational Education System 26
3.3 Case Study: The United Kingdom's Qualifications Frameworks 30
3.4 Case Study: The United States of America's Qualifications System 35
3.5 Overarching Comments Emerging from the Case Studies 37

PART 4

LINKS BETWEEN QUALIFICATION FRAMEWORKS AND THE OCCUPATIONAL CLASSIFICATION SYSTEM 39

4.1 The Logic and Challenges of the Hierarchy Structure 40
4.2 The Implications of Qualification Classifications on Skills Anticipation 41

PART 5

CONCLUSION 42

PART 6

REFERENCES 44

6.1 Overarching References 45

6.2 References for India 46

6.3 References for the UK 47

6.4 References for the US 47

PART 7

ANNEXURES 48

Annexure A: Countries by Occupational Qualification Systems 49

Group 1: Australia, Bangladesh, Botswana, Germany, Hong Kong Special Administrative Region (HKSAR), and India 49

Group 2: Japan, Mexico, South Korea, Uganda, United Kingdom (UK), and United States of America (USA) 56

Annexure B: Job Zone Descriptions 63

List of Figures

Figure 1:	Some extracts from different countries' level descriptors	24
Figure 2:	The US education system	36

List of Tables

Table 1:	NQF level descriptors for scope of knowledge applied competence	14
Table 2:	Summary of the OQSF LARF tool	18
Table 3:	GFETQSF qualifications and corresponding NQF levels	21
Table 4:	India's NVEQF levels	26
Table 5:	India's NSQF levels	27
Table 6:	The UK's qualifications frameworks	31
Table 7:	England and Northern Ireland's RQF levels	33
Table 8:	The US's postsecondary qualifications	36

Acronyms and Abbreviations

ACRONYM/ABBREVIATION	TERM/DEFINITION
ANZSCO	Australian and New Zealand Standard Classification of Occupations
AQF	Australian Qualifications Framework
BTEB	Bangladesh Technical Education Board
BOSCO	Botswana Standard Classification of Occupations
BSCO	Bangladesh Standard Classification of Occupations
CHE	Council on Higher Education
CITAC	Cross-Industry Training Advisory Committee
CONALEP	Colegio Nacional de Educación Profesional Técnica
CQFW	Credit and Qualifications Framework for Wales
DHET	Department of Higher Education and Training
DIT	Directorate of Industrial Training
DQR	Deutsche Qualifikationsrahmen für lebenslanges Lernen
EQF	European Qualifications Framework
FHEQ	Frameworks for Higher Education Qualifications of Degree-Awarding Bodies in England, Wales and Northern Ireland
GFETQSF	General and Further Education and Training Qualifications Sub-Framework
HEQF	Higher Education Qualifications Framework
HKQF	Hong Kong Qualifications Framework
HEQSF	Higher Education Qualifications Sub-Framework
HRDC	Human Resource Development Council
ITAC	Industry Training Advisory Committee
ISCO-08	International Standard Classification of Occupations 2008
JSOC	Japan Standard Occupational Classification
KECO	Korean Employment Classification of Occupations
KldB-2010	German Classification of Occupations 2010
KSCO	Korean Standard Classification of Occupations
LARF	Levels, activities, roles, and focus
LMO	Labour Market Observatory
MEXT	Ministry of Education, Culture, Sports, Science, and Technology
MHLW	Ministry of Health, Labour and Welfare
NCO-2015	National Classification of Occupations-2015
NCS	National Competency Standards
NSCS	National System of Competency Standards

ACRONYM/ABBREVIATION	TERM/DEFINITION
NSDC	National Skill Development Corporation
NSQF	National Skills Qualifications Framework
NTVQF	National Training and Vocational Qualifications Framework
NQF	National Qualifications Framework
NVEQF	National Vocational Education Qualifications Framework
OQSF	Occupational Qualifications Sub-Framework
RQF	Regulated Qualifications Framework
SAQA	South African Qualifications Authority
SCQF	Scottish Credit and Qualifications Framework
SINCO	Sistema Nacional de Clasificación de Ocupacione
SOC	Standard Occupational Classification
SSC	Sector Skills Council
QCTO	Quality Council for Trades and Occupations
TVET	Technical and vocational education and training

PART 1

Introduction and Methodology

1.1 Introduction

This document provides an analysis of the hierarchies present within qualification classification systems and uses local and international cases to examine how these hierarchies are constructed. The document is premised on the assertion that at a policy level, skills development requires the ability to analyse the relationships between the South African education system and the country's labour market in order to understand the dynamics of skills supply and demand. One aspect of this process is developing frameworks to classify educational qualifications in terms of the skills they develop, with hierarchies forming from low to high skills. However, it is not always clear how successfully a qualification hierarchy functions in terms of the labour market, nor how it relates to the occupational system hierarchy and the extent to which these two structures interact with each other. Thus, to deepen the analysis provided in this document, it would be valuable to read this report in conjunction with a similar report titled *Hierarchies in Occupational Classification Systems in South Africa*, which focuses on occupations.

This report discusses the internal logic of qualifications frameworks and their associated hierarchies, and seeks to answer the following questions:

- Firstly, how are qualifications currently classified into high/advanced, medium/intermediate, and low/elementary skill levels, nationally and internationally?
  - What is the logic and rationale that frames the construction of the hierarchies?
  - How are high, medium, and low skills defined within each hierarchy?
- Secondly, what are the implications of the hierarchical classification of qualifications in terms of skills for skills anticipation systems?

1.2 Methodology

This report draws on extensive background work that enabled an investigation of both national and international understandings of hierarchies and how they are used. To devise an international perspective on qualification systems, 12 countries were identified to provide insights into different qualifications frameworks and how qualifications are developed in each country. The range of countries was selected to try to gain a representative sample from various socio-economic contexts. However, it is important to note that language constraints meant that only countries with literature available in English were included. Thus, although attempts were made to include Latin American countries, there was insufficient literature available in the English language to enable the inclusion of these countries, except for Mexico.

The countries selected are:

- Australia
- Bangladesh
- Botswana
- Germany
- Hong Kong (SAR China)[1]
- India
- Japan
- Mexico
- South Korea
- Uganda
- United Kingdom
- United States of America

1 The Communist Party of China considers Hong Kong to be a special administrative region (SAR) of China, resulting in the term 'Hong Kong (SAR China)'.

A desktop analysis was conducted based on documents available in electronic formats, with searches for publicly available literature on the 12 identified countries. Literature on the countries' qualifications frameworks included grey literature drawn from government reports and websites, as well as reports from institutions such as the International Labour Organization and the UNESCO–UNEVOC International Centre for Technical and Vocational Education and Training. Where possible, academic literature was included but this varied from country to country as more research and reviews were carried out in certain countries than in others. This analysis is presented in Annexure A.

To understand the hierarchy of qualifications in South Africa, we reviewed four of the country's frameworks. First, the National Qualifications Framework, then its three sub-frameworks: the Higher Education Qualifications Sub-Framework, the Occupational Qualifications Sub-Framework, and the General and Further Education and Training Qualifications Sub-Framework. Within each framework, we examined:

- The nature of the hierarchy and how the term 'hierarchy' was understood and used
- The number of levels used to depict the hierarchy
- How the levels in the hierarchy are described and what logic informs these levels
- The consistencies and differences in the representation of high, medium, and low qualification levels
- How terms such as 'scope of knowledge', 'knowledge descriptor', and 'skills descriptor' are used

An analysis was then conducted across these different background studies that enabled us to systematically assess the coherence of the construction and use of hierarchies within these systems. This report presents a synthesis of this analysis.

PART 2

The Classification of Qualifications in Terms of High, Medium, and Low Skills

2.1 The National Qualifications Framework

South Africa introduced the National Qualifications Framework (NQF) in 1995 to create a more egalitarian education system (Allais, 2011). The NQF was designed as a single integrated system for the "classification, registration, publication and articulation of quality-assured national qualifications" (South African Government, 2010). The original NQF was conceived of as a hierarchy of eight levels against which new qualifications would be registered. Policymakers hoped that this framework would create some degree of equivalence between different qualifications at the same level.

Inherent in the idea of a qualifications framework is a hierarchy of levels of learning, and inherent in any educational process is a notion of progression from simple to more complex. However, creating a coherent hierarchy across different disciplines and fields of learning is far from straightforward. The way in which the framework attempted to form a coherent hierarchy was by developing a series of levels that marked learning achievement as described by learning outcome statements (Allais, 2011). The idea was that descriptors for each level would provide a broad indication of the outcomes appropriate for a qualification at that level (South African Government, 2010). These level descriptors would ensure coherence across the allocation of qualifications to particular levels, and they would facilitate the comparability of qualifications nationally and internationally (South African Qualifications Authority (SAQA), 2015).

There were many problems with the original design of the NQF (Allais, 2007, 2011). Allais (2011) notes that while the original objectives of the framework were too ambitious, the root of many of the challenges in its implementation lay in power struggles between the national departments of education and the Department of Labour at the time. Combined with a lack of political and financial support from the departments, these power struggles significantly hampered the NQF's initial implementation process. At a practical level, the NQF's unwieldy qualifications and unit standards and the dysfunctional quality assurance models that emerged also impeded on the framework's implementation (Allais, 2011).

In 2008, the original NQF was changed to have ten levels instead of eight and a set of three sub-frameworks that cover basic education (the General and Further Education and Training Sub-Framework), higher education (the Higher Education Qualifications Sub-Framework), and technical education (the Occupational Qualifications Sub-Framework) (SAQA, 2015). A quality council was created for each sub-framework, and the power to set standards was moved from the South African Qualifications Authority (SAQA) to the three new councils (Allais, 2011). In 2009, the responsibility for skills development, along with the related Quality Council for Trades and Occupations, was moved from the Department of Labour to the newly created Department of Higher Education and Training (DHET) (Allais, 2011).

The rationale behind the construction of the hierarchical structure of the NQF is the use of level descriptors that identify predictable levels of complexity and knowledge for programmes developed at each NQF level (Council on Higher Education, 2013). Each of the 10 NQF levels of learning has associated level descriptors that are underpinned by the notion of 'applied competence'. The intention is that the statement of learning achievement and its associated level descriptors provide a broad indication of the outcomes that are appropriate for a qualification at that level (South African Government, 2010).

These level descriptors aim to ensure coherence in the allocation of qualifications to particular levels and to facilitate the comparability of qualifications nationally and internationally (SAQA, 2015). To achieve these aims of coherence and comparability, the level descriptors are intended to provide a basis from

which more specific descriptors can be developed for certain fields or disciplines, and they are designed to meet the needs of both academic and occupational qualifications (SAQA, 2015). The level descriptors are therefore intended to be applicable to learning in a variety of contexts, across all three of the NQF's sub-frameworks (SAQA, 2015). SAQA documents indicate that the descriptors are not meant to be prescriptive but rather that they aim to describe the requisite levels of learning achievement relevant to qualifications at particular levels of the NQF (SAQA, 2015).

10 categories are used within each level descriptor to outline specific areas of applied competence (SAQA, 2015):

1. Scope of knowledge
2. Knowledge literacy
3. Method and procedure
4. Problem-solving
5. Ethics and professional practice
6. Accessing, processing, and managing information
7. Producing and communicating information
8. Context and systems
9. Management of learning
10. Accountability

Lotz-Sisitka and Raven (2009) discuss the concept of applied competence that was developed by the then-National Training Board in 1997 as a core aspect of designing the NQF; they describe it as "the demonstrated ability to perform a set of tasks with understanding and reflexivity". This definition involves three interconnected types of competence: practical, foundational, and reflexive (Lotz-Sisitka & Raven, 2009).

- **Practical competence** is the ability to review a range of possible actions in an authentic context, to decide on an appropriate action to follow, and to perform the chosen action (Lotz-Sisitka & Raven, 2009; SAQA, 2012).
- **Foundational competence** refers to the ability to understand the knowledge and thinking that underpins the action that is taken.
- **Reflexive competence** is the ability to connect decision-making to an underlying understanding in order to be able to adapt to change or unforeseen circumstances (Lotz-Sisitka & Raven, 2009).

SAQA simplifies reflexive competence as a means of incorporating learner autonomy into the assessment of applied competence.

The inclusion of reflexive competence in the NQF differentiates it from many other qualifications frameworks and suggests the need for a process of 'conscientisation' among learners—to enable them to apply the knowledge and skills they have gained from engaging in education to the contexts of social change in post-apartheid South Africa (Raven, 2005). Similarly, Schudel et al. (2008) note that applied competence involves "the combination and integration of practical (skills), and foundational (content knowledge) and reflexive (ability to reflect *and change*) competence".

As an example, the descriptors for applied competence in terms of the scope of knowledge category are shown in Table 1 below.

TABLE 1: NQF level descriptors for scope of knowledge applied competence

NQF LEVEL	THE SCOPE OF KNOWLEDGE IN WHICH A LEARNER IS ABLE TO DEMONSTRATE
NQF Level 1	A general knowledge of one or more areas or fields of study, in addition to the fundamental areas of study.
NQF Level 2	A basic operational knowledge of one or more areas or fields of study, in addition to the fundamental areas of study.
NQF Level 3	A basic understanding of the key concepts and knowledge of one or more fields or disciplines, in addition to the fundamental areas of study.
NQF Level 4	A fundamental knowledge base of the most important areas of one or more fields or disciplines, in addition to the fundamental areas of study; and a fundamental understanding of the key terms, rules, concepts, established principles, and theories in one or more fields or disciplines.
NQF Level 5	An informed understanding of the core areas of one or more fields, disciplines, or practices; and an informed understanding of the key terms, concepts, facts, general principles, rules, and theories of that field, discipline, or practice.
NQF Level 6	Detailed knowledge of the main areas of one or more fields, disciplines, or practices, including an understanding of and the ability to apply the key terms, concepts, facts, principles, rules, and theories of that field, discipline, or practice to unfamiliar but relevant contexts; and knowledge of one or more areas of specialisation and how that knowledge relates to other fields, disciplines, or practices.
NQF Level 7	Integrated knowledge of the central areas of one or more fields, disciplines, or practices, including an understanding of and the ability to apply and evaluate the key terms, concepts, facts, principles, rules, and theories of that field, discipline, or practice; and detailed knowledge of one or more areas of specialisation and how that knowledge relates to other fields, disciplines, or practices.
NQF Level 8	Knowledge of and engagement in an area at the forefront of a field, discipline, or practice; an understanding of the theories, research methodologies, methods, and techniques relevant to that field, discipline, or practice; and an understanding of how to apply such knowledge in a particular context.
NQF Level 9	Specialist knowledge to enable engagement with and critique of current research or practices; and advanced scholarship or research in a particular field, discipline, or practice.
NQF Level 10	Expertise and critical knowledge in an area at the forefront of a field, discipline, or practice; and the ability to conceptualise new research initiatives and to create new knowledge or practice.

The relationship between applied competence and skill is not clearly articulated in the NQF. Broadly, each of the applied competencies included at each level of the NQF requires a different mix of knowledge and skills. Some interpretations of applied competence make this explicit, stating that applied competence is a learner's ability to move beyond simply knowing about an issue to applying their knowledge and skills to different issues in varying contexts (Schudel et al., 2008).

Occupational frameworks in South Africa are founded on the 2008 version of the International Labour Organization's International Standard Classification of Occupations (ISCO-08). In contrast to the political

economy perspective on skill underlying these ISCO-08-based occupational frameworks, the NQF conception of skill aligns with Bryson's (2017) framing of a learning theory perspective, underpinned by the disciplines of psychology and education. This perspective views skill as an individual attribute or competency, as the product or output of a learning process, as an independent variable, and as being located within a person rather than a job or occupation (Bryson, 2017). A learning theory perspective on skill makes sense in the context of a qualifications framework that maps progression from elementary to advanced qualifications.

The basis of the NQF in the concept of applied competence, which includes but transcends notions of skills and skill levels, means that mapping NQF levels into categories of low, medium, and high skill is not necessarily simple. However, an increasing degree of applied competence does imply an increase in skill level, and there appears to be some agreement around classifying skill levels in this hierarchy based on the three NQF bands—general education and training, further education and training, and higher education and training.

Kraak (2008), for example, suggests that general education and training, which comprises Grades 1–9 of compulsory education and equates to NQF Level 1, should be considered as entry-level skills. They propose that university education (from a bachelor's degree to a doctorate) or its equivalent, which equated to NQF Levels 6–8 at the time, should be considered as high-level skills. The remaining NQF Levels 2–5 in between would then be considered as intermediate-level skills, corresponding to the further education and training band and to the first level of the higher education and training band (Kraak, 2008).

Reddy et al. (2016) suggest a different classification, with no formal schooling equating NQF Levels 1–3 and being classified as low skills, NQF Levels 4–5 as intermediate skills, and NQF Levels 6–10 as high skills. The DHET uses the latter classification in its 2019 report on skills supply and demand in South Africa (DHET, 2019). However, the 2022 DHET report classifies skill levels in terms of occupations rather than qualifications (DHET, 2022).

2.2 The Higher Education Qualifications Sub-Framework

The Higher Education Qualifications Sub-Framework (HEQSF) falls under the Council on Higher Education (CHE) and provides the basis for integrating all higher education qualifications into the NQF. The HEQSF aims to support standard development, quality assurance, and improved coherence within the higher education system (South African Government, 2014). Higher education qualifications occupy levels 5 to 10 of the NQF.

The HEQSF was created with the notion of 'nested' qualifications: a set of 11 qualification 'types', each defined according to levels, credits, and pathways to and from the qualification type compared to other qualification types. The nesting notion is that qualifications can be specified within these broad types, at increasing levels of specificity. These types of qualifications are the substantive basis for the hierarchical arrangement of qualifications.

The HEQSF includes the following qualification types:

Undergraduate

- Higher certificate: NQF Level 5
- Advanced certificate: NQF Level 6
- Diploma: NQF Level 6 (240 or 360)
- Advanced diploma: NQF Level 7
- Bachelor's degree (general and education): NQF Level 7
- Bachelor's degree (professional): NQF Level 8

Postgraduate

- Postgraduate diploma: NQF Level 8
- Bachelor honours degree: NQF Level 8
- Master's degree: NQF Level 9
- Professional master's degree: NQF Level 9
- Doctoral degree: NQF Level 10
- Professional doctorate: NQF Level 10

The most basic differentiation between these qualification types is the volume and complexity of learning involved in achieving them.

The South African Government (2014) specifies that the volume of learning required for a specific qualification is quantified in terms of the number of credits, which are defined as notional hours of full-time study required for achieving that qualification. The credit system is based on an estimation of ten notional study hours as equivalent to one credit. Notional study hours include all learning activities engaged in by a student, including in-person classes, self-study, work-integrated learning, assignments, projects, and examinations. Generally, qualifications at the levels of certificates, diplomas, bachelor's degrees, and bachelor honours degrees require a minimum credit load of 120 credits per academic year, while master's and doctoral degrees require 180 credits per academic year (South African Government, 2014).

The complexity of learning is seen as a function of the increasing relative cognitive difficulty of credits as progress is made towards higher levels of qualification (South African Government, 2014). The increasing complexity is also described within the NQF level descriptors, which attempt to capture progressively challenging requirements for each of the 10 applied competencies in the framework as the level of qualification advances (SAQA, 2015).

The HEQSF provides a descriptive outline of each qualification type but does not go into extensive detail about the specific capabilities or competencies—as suggested in the NQF level descriptors—that are required to attain particular qualifications.

Marock (2011) interviewed several experts in higher education who made it clear that it is the types of qualifications outlined in the Higher Education Qualifications Framework (HEQF), such as a Bachelor of Arts degree, a Bachelor of Science degree, a postgraduate diploma, an honours degree, and a master's degree, that signal to the public and specifically to the labour market what to expect.

As a sub-framework of the NQF, the HEQSF is also underpinned by a learning theory perspective on skill (Bryson, 2017). The increasing capability of individuals to demonstrate their knowledge and skills

in specific fields of study is assumed as the basis for the hierarchical structure of the framework. In contrast to the NQF, the HEQSF uses the idea of applied competence as a separate concept to skills and knowledge. In the HEQSF, knowledge, skills, and applied competence are used to describe the spectrum between the contextual (workplace) and the conceptual (learning institution) bases of specific qualifications (CHE, 2013). The HEQF identifies three broad qualification 'pathways' that reflect the contextual–conceptual spectrum: vocational, professional, and general.

The CHE (2013) suggests that the proportional emphasis on knowledge, skills, and applied competence in each of these qualification pathways provides a useful way of mapping qualifications at NQF Levels 5–10. In practice, vocationally oriented qualifications, primarily at NQF Levels 5–7, appear to have a greater emphasis on applied competence than the higher levels of the framework. Based on the CHE's guidance on qualification standards, it seems that an increasing emphasis on skill and knowledge underpin the higher levels of the HEQSF, meaning that the *conceptual* elements of particular fields of study become more important than the *contextual* elements at NQF Levels 8–10 (CHE, 2013).

It is somewhat unclear how the use of applied competence as a guide for distinguishing between qualifications pathways in the HEQSF relates to the various categories of applied competence and their associated elements (foundational, practical, and reflexive) in the NQF. A clear definitional distinction or clarification needs to be developed in terms of the various ways that the term 'applied competence' is used across the NQF and its sub-frameworks.

2.3 The Occupational Qualifications Sub-Framework

The Occupational Qualifications Sub-Framework (OQSF) was created to organise occupationally focused qualifications and to consolidate the South African vocational education and training system within the context of the NQF. The quality council responsible for the OQSF is the Quality Council for Trades and Occupations (QCTO). The OQSF was designed with a different logic to the HEQF—instead of qualification types, it simply took the levels on the framework. The idea was that different qualifications would be allocated to different levels, but they are all referred to as occupational certificates. The past tense is used here, as the system is somewhat in flux, both concerning the notion of 'qualifications' and the number of levels that the sub-framework includes.

'Qualification types' have now been introduced to the OQSF to create better alignment with the HEQF and to improve clarity for users (learners, education institutions, and employers), since simply referring to all qualifications as 'occupational qualifications' proved confusing. Also, allocating qualifications to a level on the NQF did not provide a meaningful basis of communicating with users. In other words, each NQF level now has a differently named qualification.

The OQSF officially operates between NQF Levels 1–8, although the demand for occupational qualifications is greatest at NQF Levels 1–6. The revised Occupational Qualification Skills Framework Policy of 2020 has introduced the following qualifications types:

- General Occupational Certificate: NQF Level 1
- Elementary Occupational Certificate: NQF Level 2
- Intermediate Occupational Certificate: NQF Level 3
- National Occupational Certificate: NQF Level 4

- Higher Occupational Certificate: NQF Level 5
- Occupational Diploma: NQF Level 6
- Advanced Occupational Diploma: NQF Level 7
- Specialised Occupational Diploma: NQF Level 8

Occupational qualifications and part-qualifications are described as 'competency based'. They are intended to prepare learners for specific occupations, trades, and professions (South African Government, 2020). An occupational qualification is a registered national qualification with a minimum of 120 credits required for its completion. Occupational qualifications originally consisted of three components, namely a knowledge component, a practical component, and a workplace-based component. This structure has recently been changed to a knowledge component and an application component. Additionally, these qualifications are required to include a focus on soft skills, comprising at least 5% of the total training required (South African Government, 2020).

The QCTO is also responsible for four kinds of qualifications on the OQSF that were registered pre-2009. The quality council has begun the process of fast-tracking the realignment of these four qualifications into occupational qualifications. The legacy qualification types are:

1. Unit standard-based qualifications
2. Non-unit standard-based qualifications that are outcomes-based
3. Provider-based qualifications linked to specific providers
4. A national certificate (N4–N6 on the National Accredited Technical Education Diploma (NATED) programme) and a national diploma offered by technical and vocational education and training (TVET) colleges and private colleges

The OQSF is intended to provide a structure for designing, assessing, and delivering learning that is responsive to the demands of the workplace. It attempts to operationalise the level descriptors from a world-of-work perspective that refers to 'field, discipline, or practice'. 'Practice' in this sense is linked to what individuals do when they perform in an occupational or professional context.

When developing new occupational qualifications, the OQSF uses a levels, activities, roles, and focus (LARF) tool to identify the appropriate NQF level of the qualification (OQSF, 2014). This tool is intended to provide a contextual interpretation of the NQF level descriptors. A core element of the LARF tool is the concept of "time span of discretion" based on the work of Elliot Jaque (1964). Essentially, the time span of discretion is an estimation of the level of complexity of each role within an organisation, based on the length of time it takes to achieve competence in performing a particular function. The OQSF adapts this concept alongside descriptors of tasks, roles, and workplace focuses to assign a qualification to a particular NQF level (OQSF, 2014).

TABLE 2: Summary of the OQSF LARF tool

LEVEL	TYPICAL ACTIVITIES	ROLE	WORKPLACE FOCUS	Time span of discretion
10	Envision future scenarios: Conceptualise and introduce new practices and knowledge	Visionary leadership	The future shape of organisation, industry, profession	10–15 years
9	Set and implement strategies: Plan and secure capital—financial, intellectual, social, human	Leadership and direction	The business landscape or profession	5–10 years

LEVEL	TYPICAL ACTIVITIES	ROLE	WORKPLACE FOCUS	Time span of discretion
8	Manage or design systems: Manage stakeholder expectations and roles, advocacy, corporate citizenship, synergy	Resource management	Policy, resource allocation	3–5 years
7	Manage or design processes: Negotiate contractual terms and conditions, HR, procurement, finance	Changed practices	New technology, system	1–3 years
6	Develop and implement changes: Collect, evaluate, and build a case based on a variety of types of data or information, legal and ethical considerations	Optimisation: Respond to changing external and internal needs	Improvements: Operational performance and risks	6–12 months
5	Maintain efficiencies: Plan and implement project processes and operations	Stability and consistency: Coordinate the supply of resources	Systems	3–6 months
4	Set up processes and solve process problems: Interpret work instruction, schedule, organise resources for the team, perform a technical task, install, assemble, repair, provide services, attend to clients' needs, ensure progress and completion	Process management: Ensure smooth workflow according to schedule, quality standards, and safety	Process data: Work or service-related data, cost	1–3 months
3	Adjust, maintain, and oversee: Plan work process, allocate tasks, monitor progress or work, use equipment and instrument, contribute to team efforts and objectives	Procedures: Complete the task within the required time	Productivity	1 week
2	Monitor, support: Perform repetitive work where some discretion is required	Operations: Maintain operations through minor adjustments	Equipment, machinery (semi- automatic, single purpose), instruments, materials)	1 day
1	Perform elementary tasks, identify and remove waste, sequence task components, and provide feedback to supervisor	Task: Comply with rules	Machines, tools: Basic tools, materials, waste	Less than a day

The OQSF policy includes an understanding of skill in the context of the development of occupational standards. These standards are "statements of work performance that reflect the ability to successfully execute the functions and apply the required knowledge, skills and understanding in an occupation" (South African Government, 2021).

The OQSF does not appear to have a specific definition or understanding of skill as a concept, and the framework's qualification levels only explicitly discuss skills at levels 6 and 7, with lower-level qualifications discussing knowledge, knowledge/theory, application, and competence (South African Government, 2021). At levels 6 and 7 of the OQSF, skill is understood as something within a person, in line with the 'learning theory' perspective on skills outlined by Bryson (2017), and the qualifications at these levels discuss developing learners who can apply their knowledge and skills in the workplace (South African Government, 2021). This understanding of knowledge and skill aligns with Schudel et al.'s (2008) discussion of applied competence, as enabling students "to move beyond purely knowing *about* and issue, to having the competence to apply their knowledge and skills to different issues in different contexts".

Since the OQSF levels are designed to be equivalent to NQF levels, it is possible to assume that an NQF approach to skill also informs the OQSF. However, as noted previously, the NQF also does not clearly define skill (SAQA, 2012), and there is no clear construction of the OQSF in terms of skill levels per se. Generally, the logic informing the hierarchy of levels in the OQSF is based on the increasing complexity and degree of conceptual knowledge required to perform the functions and tasks in a specific occupation (South African Government, 2021).

2.4 The General and Further Education and Training Qualifications Sub-Framework

The General and Further Education and Training Qualifications Sub-Framework (GFETQSF) consists of qualifications at NQF Levels 1–4. 'General education' includes all educational programmes leading to a qualification at level 1 of the NQF, while 'further education and training' includes programmes leading to qualifications at levels 2–4. This sub-framework is overseen by the Umalusi Council for Quality Assurance in General and Further Education and Training (Umalusi), which was constituted by the NQF Act 67 of 2008, as amended in the General and Further Education and Training Quality Assurance Act of 2008.

The framework includes four qualification types, within which more specific variants of qualifications are nested (see Table 3 below for more details) (South African Government, 2013):

- General Certificate: NQF Level 1
- Elementary Certificate: NQF Level 2
- Intermediate Certificate: NQF Level 3
- National Certificate: NQF Level 4

These four qualification types are expected to be sufficient to accommodate a diverse range of educational needs at the lower levels of the NQF (South African Government, 2013). Instead of a large number of actual and potential variants, the GFETQSF consists of a small number of qualifications that are designed differently for learners of different age groups. Level 1 consists of general education up to Grade 9, or a minimum of 120 credits for adult basic education and training (Umalusi, 2014). The goal of general education is the development of literacy and numeracy, along with a general understanding of important knowledge areas, including languages, mathematics, natural and social sciences, arts and culture, life orientation, economic and management sciences, and technology (Umalusi, 2014).

Following the completion of a General Certificate, learners may continue with either a general or vocational educational pathway at higher levels of the framework. There are general academic qualifications for schooling, vocational qualifications for TVET colleges, and adult qualifications addressing the basic literacy and general education needs of adult learners. The Department of Basic Education is responsible for the provision of all *academic* qualifications offered in schools and technical schools, while the DHET takes responsibility for the provision of all *vocational* qualifications offered in TVET colleges as well as qualifications offered for adults in community education and training colleges. The GFETQSF's qualifications are either general or vocational in nature but are not occupational. The vocational qualifications included in the framework provide access to occupational qualifications from level 5 of the NQF, but they are not classified as occupational in themselves (Umalusi, 2014).

Vocational subjects fall under the National Certificate (Vocational). The qualifications have discipline-(subject-) based curricula. Umalusi uses the notion of 'foundational' learning, which entails proficiency in one or more languages and some form of mathematics or quantitative literacy; this is compulsory for all vocational qualifications. The GFETQSF does not allow for part-qualifications, with the exception of certain inherited N1–N3 certificates from the apartheid-era NATED programme. An N3 certificate is regarded as a part-qualification at NQF Level 4. Table 3 shows the range of qualification types on the GFETQSF.

TABLE 3: GFETQSF qualifications and corresponding NQF levels

NQF LEVEL	QUALIFICATION TYPES AND VARIANTS				
	Academic		**Vocational**	**Adult learning**	
Level 4	**National Certificate**				
Designated variants	National Senior Certificate (NSC)	Amended Senior Certificate (ASC)	National Certificate (Vocational) (NC(V)) Level 4	National Senior Certificate for Adults (NASCA)	National Certificate (Vocational) for Adults (NAC(V)A)[2]
Level 3	**Intermediate Certificate**				
Designated variants	NSC Grade 11		NC(V) Level 3	Intermediate Certificate of Education	
Level 2	**Elementary Certificate**				
Designated variants	NSC Grade 10		NC(V) Level 2	Elementary Certificate of Education	
Level 1	**General Certificate**				
Designated variants	General Certificate of Education (GCE) (Grade 9)			General Education and Training Certificate: Adult Basic Education and Training (GETC: ABET)	General Education and Training Certificate for Adults (GETCA)

2 There are currently no existing NAC(V)A qualifications, but this qualification type is included in the framework in anticipation of the future development of a level 4 vocational qualification for adults (South African Government, 2014).

The NQF Act (67/2008) indicates that these four qualification types operate as a broad framework to regulate teaching, learning, and assessment at various levels (South African Government, 2013).

The generic competencies outlined within the NQF level descriptors are used to provide a generic specification of the type of qualification in the GFETQSF as well as the hierarchical nature of these qualifications. Individual qualifications are required to meet these generic competencies in order to be approved at a specific level (South African Government, 2013).

As with the other two sub-frameworks, in addition to the increasing complexity of knowledge required, the volume of learning that is needed to achieve qualifications at these levels is also measured using the credit system. Despite this requirement regarding notional study hours, policy documents indicate that attaining the expected learning is established by assessing learning outcomes, and that the credit rating is independent of the mode of delivery of learning (South African Government, 2013).

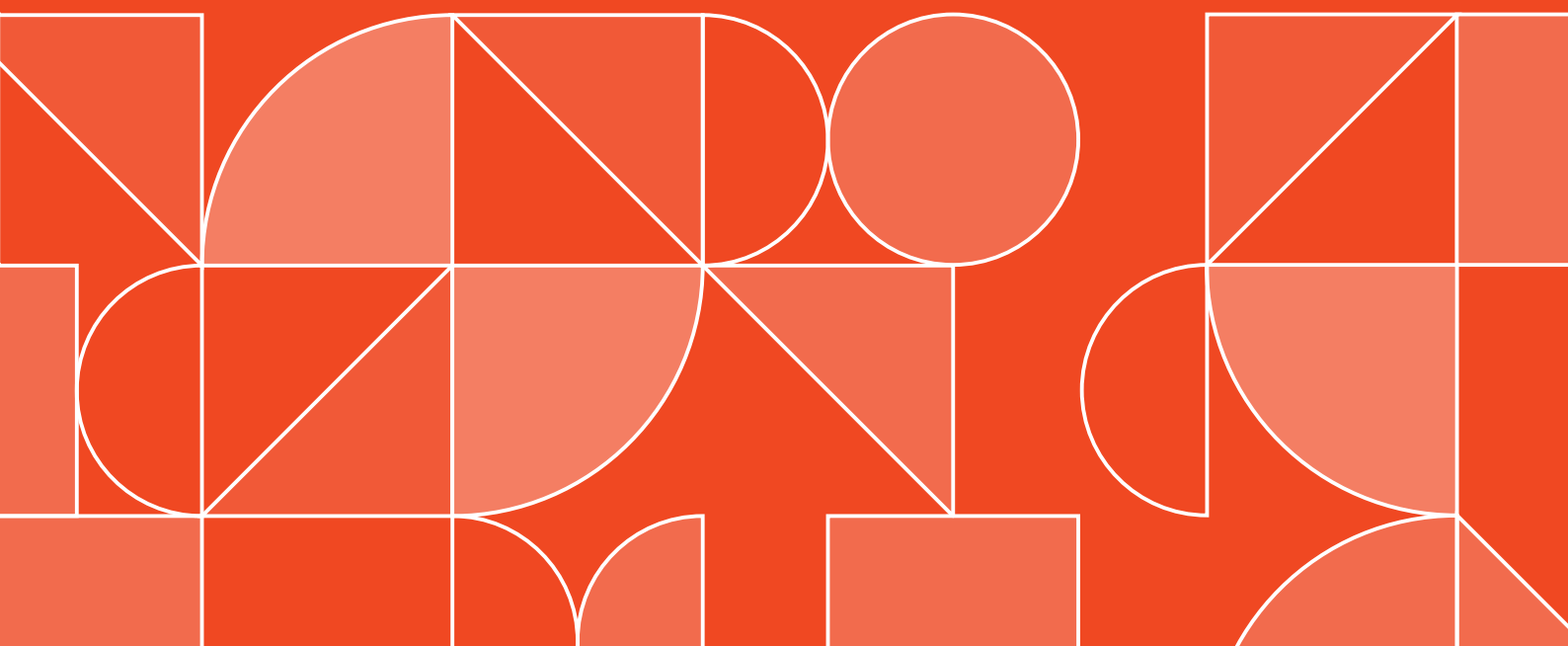
Skill is not explicitly defined in the GFETSQF, and it is used in different ways in the descriptions of various levels and types of qualifications. Overall, the framework appears to use a similar notion of skill as the HEQSF—with knowledge, skills, and applied competence understood as separate concepts. In the description of general education qualifications, completion of the National Senior Certificate aims to provide an opportunity for learners to focus on "specific skills and knowledge in a smaller number of academically oriented subjects" (Umalusi, 2014).

In contrast, the description of the National Certificate (Vocational) at NQF Level 4 enables "students to acquire the necessary knowledge, practical skills, and applied competence and understanding required for employment in a particular occupation" (Umalusi, 2014). There is an implicit difference in the way that skills are discussed between the general and vocational qualifications. The qualifier 'practical' prefaces the word 'skills' in the description of the *vocational certificate* as a means of differentiating between the types of skills that are learnt in the different qualifications. This addition suggests that skills in the *general certificate* may be considered to be more conceptual or cognitive. It is also interesting that the concept of applied competence is only included in the description of the vocational qualification, when the NQF levels themselves are defined on the basis of various applied competencies (South African Government, 2021). This suggests that there is a need for a coherent definition and usage of applied competence/competencies, skills, and knowledge across the three sub-frameworks.

Given the unclear definition and use of the concept of skills in the GFETQSF, it is equally unclear whether or not the hierarchical logic of the framework is skills-based. Broadly, the framework progresses from a general level of knowledge at the lower levels to more specifically focused subject areas at the higher levels. The logic underlying the hierarchy therefore appears to be based on both a progression from a general to a specific focus of study, and on an increasing complexity of knowledge, skills, (and in the vocational qualifications) applied competence.

PART 3

International Approaches to Classifying Qualifications



3.1 The Use of Level Descriptors

While levels are introduced to facilitate comparison and to justify the allocation of qualifications to varying points in hierarchical systems, there are many different categories of descriptors across different countries. We have already seen 10 level descriptors in the South African system. In Tunisia, there are six types. The European Qualifications Framework (EQF) contains three types of specification: knowledge, skill, and competence. In Scotland, there are five 'characteristic generic outcomes', which must be elaborated for each level (except level 1), while Malaysia has eight 'domains' of descriptors. Figure 1 below provides a selection of examples from different countries.

FIGURE 1: Some extracts from different countries' level descriptors

Source: Allais, 2014

In some countries, disciplinary specialisation is seen as crucial for the classification of a qualification at higher levels in the relevant frameworks, while other countries specify a greater need for inter-disciplinary knowledge at higher levels. Furthermore, high levels of responsibility or autonomy do

not necessarily require or imply high levels of knowledge, and vice versa. Leadership and team skills or communication skills may not be required at all for some people working at extremely high levels of knowledge specialisation. Even if some degree of these skills may be required, it does not follow that each type of skill, competence, and ability must be developed to the same level. For example, a theoretical physicist working at the most advanced levels of their discipline may not need level 10 communication or team working skills, even though some communication ability will be very handy for them.

This seems to confirm the argument by Markowitsch and Luomi-Messerer (2008) that there is simply no coherent theory that enables the development of such descriptors. Even within Europe, where years of bureaucratic processes have attempted to align qualifications, Méhaut and Winch (2011) discuss substantial differences across countries in the understanding of words such as 'knowledge', 'skill', and 'competence', which are the three categories that are defined for each of the levels of the EQF. In other words, simply saying in order to be placed at a particular level on a framework, a qualification must ensure that a learner has "[k]nowledge of facts, principles, processes and general concepts in a field of work or study", or that they have "a range of cognitive and practical skills required to accomplish tasks and to solve problems by applying basic tools, methods, materials and information" (Brockmann et al., 2011, p. 7) does not make allocating qualifications to levels a straightforward decision.

Reaching agreement on what the level descriptors should look like is challenging. It is more difficult still to ensure that everyone interprets these descriptors in the same way. Analyses of the development of these descriptors (for example, Hart, 2009; Markowitsch & Luomi-Messerer, 2008) show that there are huge differences in interpretation. This could explain why the Lithuanian descriptors have both 'concise' and 'detailed' versions. What is particularly notable in this case is that the Lithuanian descriptors are highly complex yet they are supposed to be generically applied across fields and knowledge areas.

There are many countries that have similar-looking level descriptors because they have been designed using the EQF as a basis. Türkiye, for example, has adopted European descriptors. Bangladeshi level descriptors also drew on the EQF, but with some changes—they are based on 'knowledge, skill, and responsibility', and are linked to very broad 'classes' of jobs. In short, the existence of the EQF may lead to level descriptors looking more similar internationally. Another reason for some commonalities across countries is that level descriptors are frequently designed by consultants who base them on the level descriptors of another country (Allais (2014) finds that Scotland was cited as a common source). But this still does not escape the problems identified above: What will they mean? How will people interpret them?

Even if we consider a hierarchy of only *cognitive* processes, making judgements about levels is not uncomplicated. A statement of a learning outcome does not contain intrinsic criteria as to how it should be interpreted (Allais, 2012). A range of factors needs to be considered, and expert judgements need to be made. As Brockmann, Clarke, and Winch (2011) argue, outcomes or standards only make sense in the context of the curriculum of which they are a part.

Ultimately, it seems highly unlikely that level descriptors can play the roles that are claimed for them. This may explain why there is very little evidence that level descriptors are being used in South African qualification development. There is even less evidence about *how* they are being used, or how useful they are in making decisions about the location of qualifications on the framework, or in credit transfer matters, or at comparing foreign qualifications.

A further complexity emerges through a review of the international case studies; these highlight the ways in which these hierarchies are also mediated by the relationship between the qualifications frameworks and the occupational classification systems. The case studies are provided below.

3.2 Case Study: India's Vocational Education System

This case study presents an overview of India's vocational education system.[3] India introduced the National Vocational Education Qualifications Framework (NVEQF) as a way of structuring vocational qualifications. The NVEQF originally consisted of ten levels, with seven certificate levels, as per the table below.

TABLE 4: India's NVEQF levels

ARCHITECTURE OF THE NVEQF				
		CASE 1	CASE 2	
LEVEL	CERTIFICATE	EQUIVALENCE	EQUIVALENCE	CERTIFYING BODY
10	NCC 8	Degree	Doctorate	University and SSC
9	NCC 7	PG Diploma	Master's Degree	University and SSC
8	NCC 6			University and SSC
7	NCC 5	Advanced Diploma	Bachelor's Degree	Board of Technical Education and SSC University and SSC
6	NCC 4			
5	NCC 3	Diploma		Board of Technical Education and SSC School Board and SSC
4	NCC 2		Grade XII	
3	NCC 1		Grade XI	
2	NCWP 2	Grade X	Grade X	School Board and SSC
1	NCWP 1	Grade IX	Grade IX	School Board and SSC
RPL	RPL 2	Grade VIII	Grade VIII	NIOS / State Open Schools and SSC
	RPL 1	Grade V	Grade V	NIOS / State Open Schools and SSC

RPL: Recognition of Prior Learning
NCWP: National Certificate for Work Preparation
NCC: National Copetency Certificate

Source: Ministry of Human Resource Development (2012)

The NVEQF level descriptors were based on the learning outcomes in India's National Occupational Standards (NOS). The standards were developed by Sector Skills Councils (SSC) for the various occupations and are broader versions of the learning outcomes relevant to a qualification at that level.

3 At the time of writing, India did not have a qualifications framework for other parts of its education system, but a higher education qualifications framework was introduced in March 2023.

The NOS "defines the measurable performances outcomes required from an individual engaged in a particular task and indicates what an individual should know and do while performing a particular task" (Ministry of Labour and Employment, 2015, p. 17).

The NVEQF has since been subsumed into the National Skills Qualifications Framework (NSQF), which was brought about by the National Skill Development Agency. Each NQSF level has a corresponding level descriptor related to competency levels determined in consultation with the SSCs.

> Each level of the NSQF is described by a statement of learning outcomes in five domains, known as level descriptors. These five domains are (i) Process, (ii) Professional knowledge, (iii) Professional skills, (iv) Core skills and (v) Responsibility. The descriptors give broad, general, but meaningful indicators of the learning outcomes at each level.
>
> (Mehrotra, 2016, p. 291)

All five domains are addressed in the NSQF level descriptors, as shown in Table 5 below.

TABLE 5: India's NSQF levels

NSQF LEVEL DESCRIPTORS					
LEVEL	**PROCESS REQUIRED**	**PROFESSIONAL KNOWLEDGE**	**PROFESSIONAL SKILL**	**CORE SKILL**	**RESPONSIBILITY**
1	Prepares person to carry out processes that are repetitive on regular basis, requires no previous practice.	Familiar with common trade terminology, instructional words, meanings and understanding.	Routine and repetitive, takes safety and security measures.	Reading and writing, addition, subtraction, personal financing, familiarity with social and religious diversity, hygiene and environment.	No responsibility, always works under continuous instruction and close supervision.
2	Prepares person to carry out processes that are repetitive, on a regular basis, with little application of understanding, more of practice.	Material, tools and applications in a limited context, understands context of work and quality.	Limited service skills used in limited context, select and apply tools, assist in professional work with no variables, differentiate good and bad quality.	Receive and transmit written and oral messages, basic arithmetic, personal financing, understanding of social, political, and religious diversity, hygiene and environment.	No responsibility, always works under continuous instruction and close supervision.

NSQF LEVEL DESCRIPTORS					
LEVEL	PROCESS REQUIRED	PROFESSIONAL KNOWLEDGE	PROFESSIONAL SKILL	CORE SKILL	RESPONSIBILITY
3	Person may carry out a job which may require limited range of activities, routine and predictable.	Basic facts, process and principle applied in trade of employment.	Recall and demonstrate practical skill, routine and repetitive in narrow range of application.	Communication written and oral, with minimum required clarity, skill of basic arithmetic and algebraic principles, personal banking, basic understanding of social and natural environment.	Under close supervision. Some responsibility for own work within defined limit.
4	Work in familiar, predictable routine, situation of clear choice.	Factual knowledge of field of knowledge or study.	Recall and demonstrate practical skill, routine and repetitve in narrow range of application, using appropriate rule and tool, using quality concepts.	Language to communicate written or oral, with required clarity, skill of basic arithmetic and algebraic principles, basic understanding of social, political and natural environment.	Responsibility for own work and learning.
5	Job that requires well-developed skill, with clear choice of procedures in familiar context.	Knowledge of facts, principles, processes and general concepts, in a field of work or study.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying basic methods, tools, materials and information.	Desired mathematical skill, understanding socio-politics, some skill of collecting and organising information, communication.	Responsibility for own work and learning and some responsibility for others' work and learning.
6	Demands a wide range of specialised technical skill, clarity of knowledge and broad range of activity involving standard and non-standard practices.	Factual and theoretical knowledge in broad context within a field of work or study.	A range of cognitive and practical skills required to generate solutions to specific problems in a field of work or study.	Reasonably good in mathematical calculation, understanding socio-politics, data collecting, organising information, and logical communication.	Responsibility for own work and learning and full responsibility for others' work and learning.

NSQF LEVEL DESCRIPTORS					
LEVEL	PROCESS REQUIRED	PROFESSIONAL KNOWLEDGE	PROFESSIONAL SKILL	CORE SKILL	RESPONSIBILITY
7	Requires a command of wide-ranging specialised theoretical and practical skills, involving variable routine and non-routine contexts.	Wide-ranging factual and theoretical knowledge in broad contexts within a field of work or study.	Wide range of cognitive and practical skills required to generate solutions to specific problems in a field of work of study.	Good logical and mathematical skill, understanding of social, political and natural, environment and organising information, communication and presentation skill.	Full responsibility for output of group and development.
8	Comprehensive, cognitive, theoretical knowledge and practical skills to develop creative solutions to abstract problems. Undertakes self-study, demonstrates intellectual independence, analytical rigour and good communication.			Exercise management and supervision in the context of work/study having unpredictable changes, responsible for the work of others.	
9	Advanced knowledge and skill. Critical understanding of subject, demonstrating mastery and innovation, completion of substantial research and dissertation.			Responsible for decision-making in complex technical activities involving unpredictable work/study situations.	
10	Highly specialised knowledge and problem-solving skill to provide original contribution to knowledge through research and scholarship.			Responsible for strategic decisions in unpredictable complex situations of work/study.	

Source: Logistics Sector Skill Council

The focus of the system is not on credit values, as these are determined by accrediting bodies and relate to the number of hours to be spent on a qualification. Time spent is also not used as an indication of the level of qualification.

The NSQF level descriptors use a broader range of concepts than just skill and knowledge to determine the hierarchy of the levels, as is evident in the use of the five domains. There are clear differences between the levels, particularly in terms of the responsibility domain and the process required. Although the framework itself does not specify between elementary, intermediate, and advanced skill, levels 1 to 4 appear to be at the elementary skill level based on the descriptions of skill, knowledge, and responsibility. There is a clear distinction between levels 4 and 5, with a shift to intermediate skill as the level descriptors begin referring to "well-developed skill" and a "range of cognitive and practical skills" as well as taking some responsibility for others.

This develops further in levels 6 and 7, which are similar at the intermediate level. There is a further clear distinction between levels 7 and 8, where the descriptors change again as level 8 moves to high skill. Levels 8 to 10 have much broader descriptions that use terms such as "comprehensive", "advanced", "complex", and "unpredictable situations". The lower levels are more specific in their descriptions than the higher levels, although the terms are not always clearly quantifiable in terms of what the specific requirements are that would be considered "narrow" or "wide-ranging" skill in a particular field, for example.

The Indian NSQF differs from the South African OQSF in that it includes five domains that are unique to it as a specific qualifications framework. The equivalent in the OQSF are the ten applied competencies that relate to all three sub-frameworks of the NQF. This means that the level descriptors in the OQSF do not include specific areas of knowledge and/or skill, as these are presumably covered by the NQF level descriptors and the descriptions of specific qualifications for particular occupations.

3.3 Case Study: The United Kingdom's Qualifications Frameworks

Due to the design of a central government with devolved structures in Northern Ireland, Wales, and Scotland, there are four qualifications frameworks in use in the United Kingdom (UK):

1. Regulated Qualifications Framework (RQF) for England and Northern Ireland
2. Scottish Credit and Qualifications Framework (SCQF)
3. Credit and Qualifications Framework for Wales (CQFW)
4. Frameworks for Higher Education Qualifications of Degree-Awarding Bodies in England, Wales and Northern Ireland (FHEQ)

These frameworks include both general and vocational qualifications, and make use of different levels that do not necessarily directly align with each other. The 'Qualifications and Credit Framework for England, Northern Ireland and Wales' indicated in the table below was replaced in 2014 with the RQF for England and Northern Ireland. However, the level structure appears to remain the same. The qualifications frameworks for England, Wales, and Northern Ireland are similar, while Scotland maintains a "separate and distinct credit and qualifications framework" (Office of Qualifications and Examinations Regulation (Ofqual), 2019, p. 11).

TABLE 6: The UK's qualifications frameworks

MAIN STAGES OF EDUCATION / EMPLOYMENT	QUALIFICATIONS AND CREDIT FRAMEWORK / NATIONAL QUALIFICATIONS FRAMEWORK FOR ENGLAND, WALES AND NORTHERN IRELAND www.ofqual.gov.uk	CREDIT AND QUALIFICATION FRAMEWORK FOR WALES www.cqfw.net	NATIONAL FRAMEWORK OF QUALIFICATIONS FOR IRELAND www.nfq.ie	THE SCOTTISH CREDIT AND QUALIFICATIONS FRAMEWORK www.scqf.org.uk	FRAMEWORK FOR HIGHER EDUCATION QUALIFICATIONS IN ENGLAND, WALES AND NORTHERN IRELAND: FHEQ www.qaa.ac.uk
PROFESSIONAL OR POSTGRADUATE EDUCATION OR EMPLOYMENT	Level 8	Level 8	Level 10	Level 12	Level 8
	Vocational Qualifications Level 8	Doctoral degrees	Doctoral Degree, Higher Doctorate	Professional Development Awards, Doctoral Degrees	Doctoral degrees
	Level 7	Level 7	Level 9	Level 11	Level 7
	Fellowships, NVQ Level 5, Vocational Qualifications Level 7	Master's Degrees, Intergrated Master's Degrees, Postgraduate Diplomas, Postgraduate Certificate in Education (PGCE), Postgraduate Certificates	Master's Degree, Post-graduate Diploma	SVQ Level 5, Professional Development Awards, Postgradutes Diplomas, Master's Degrees, Intergrated Master's Degrees, Postgraduate Certificates	Master's Degree, Integrated Master's Degrees, Postgraduate Diplomas, Postgraduate Certificate in Education (PGCE), Postgraduate Certificates
HIGHER EDUCATION ADVANCED SKILLS TRAINING	Level 6	Level 6	Level 8	Level 10	Level 6
	Vocational Qualifications Level 6	Bachelor's Degrees with Honours, Bachelor's Degrees, Professional Graduate Certificate in Education (PGCE), Graduate Diplomas, Graduate Certificates	Honours Bachelor Degree, Higher Diploma	Bachelor's Degrees with Honours, Professional Development Awards, Graduate Diplomas, Graduate Certificates	Bachelor's Degrees with Honours, Bachelor's Degrees, Professional Graduate Certificate in Education (PGCE), Graduate Certificates, Graduate Diplomas
				Level 9	
			Level 7	Bachelor's Ordinary Degrees, Professional Development Awards, SVQ Level 4, Graduate Diplomas, Graduate Certificates	
ENTRY TO PROFESSIONAL GRADUATE EMPLOYMENT	Level 5	Level 5	Ordinary Bachelor Degree x		Level 5
	NVQ Level 4, Higher National Diplomas (HND), Higher National Certificates (HNC), Vocational Qualifications Level 5	Foundation Degrees, Diplomas of Higher Education (DipHE), Higher National Diplomas (HND)			Foundation Degrees, Diplomas of Higher Education (DipHE), Higher National Diplomas (HND)
				Level 8	
				Higher National Diplomas, SVQ Level 4, Professional Development Awards, Diplomas of Higher Education (DipHE)	
SPECIALISED EDUCATION AND TRAINING	Level 4	Level 4	Level 6		Level 4
	Vocational Qualifications Level 4	Certificates of Higher Education, Higher National Certificates (HNC), NVQ level 4, Essential Skills Wales (ESW), Wider Key Skills (WKS), Higher Apprenticeship Framework	Advanced Certificate, Higher Certificate	Level 7	Certificates of Higher Education (CertHE), Higher National Certificates (HNC)
				Scottish Baccalaureate, Advanced Highers, Professional Development Awards, SVQ Level 3, Higher National Certificates (HNC), Certificates of Higher Education (CertHE)	

MAIN STAGES OF EDUCATION / EMPLOYMENT	QUALIFICATIONS AND CREDIT FRAMEWORK / NATIONAL QUALIFICATIONS FRAMEWORK FOR ENGLAND, WALES AND NORTHERN IRELAND www.ofqual.gov.uk	CREDIT AND QUALIFICATION FRAMEWORK FOR WALES www.cqfw.net	NATIONAL FRAMEWORK OF QUALIFICATIONS FOR IRELAND www.nfq.ie	THE SCOTTISH CREDIT AND QUALIFICATIONS FRAMEWORK www.scqf.org.uk	FRAMEWORK FOR HIGHER EDUCATION QUALIFICATIONS IN ENGLAND, WALES AND NORTHERN IRELAND: FHEQ www.qaa.ac.uk
QUALIFIED/SKILLED WORKER ENTRY TO HIGHER EDUCATION COMPLETION OF SECONDARY EDUCATION	Level 3	Level 3	Level 5	Level 6	Level 4
	NVQ level 3, Vocational Qualifications Level 3, GCE AS and A Level, Advanced Diplomas	NVQ level 3, Vocational Qualification level 3, AS and A Level, Welsh Baccalaureate Qualification Advanced, ESW, WKS, Apprenticeship Framework	Level 5 Certificate, Leaving Certificate	Highers, SVQ Level 3, Professional Development Awards, National Progression Awards, National Certificates	Certificates of Higher Education (CertHE), Higher National Certificates (HNC)
			Level 4		
PROGRESSION TO SKILLED EMPLOYMENT CONTINUATION OF SECONDARY EDUCATION	Level 2	Level 2	Level 4 Certificate, Leaving Certificate	Level 5	
	NVQ level 2, Vocational Qualification Level 2, GCSEs at grade A–C, ESOL skills for life, Higher Diplomas, functional skills Level 2 (English, maths & ICT)	NVQ level 2, Vocational Qualification level 2, Welsh Baccalaureate Qualification Intermediate, GCSEs grade A–C, ESW, WKS, Foundation Apprenticeship Framework		Intermediate 2, Credit Standard Grade, SVQ 2, National Progression Awards, National Certificates	
SECONDARY EDUCATION INITIAL ENTRY INTO EMPLOYMENT OR FURTHER EDUCATION	Level 1	Level 1	Level 3	Level 4	
	NVQ level 1, Vocational Qualification level 1, GCSEs at grade D–G, ESOL skills for life, Foundation Diplomas, functional skills Level 1 (English, maths & ICT)	NVQ level 1, Vocational Qualification level 1, GCSEs at grade D–G, Welsh Baccalaureate Qualification Foundation	Level 3 Certificate, Junior Certificate	Intermediate 1, General Standard Grade, Scottish Vocational Qualifications (SVQ) 1, National Progression Awards, National Certificates	
				Level 3	
			Level 2	Access 3, Foundation Standard Grade, National Progression Award, National Certificates	
			Level 2 Certificate		
				Level 2	
QUALIFICATIONS CAN BE TAKEN AT ANY AGE IN ORDER TO CONTINUE OR RETURN TO EDUCATION OR TRAINING				Access 2, National Progression Awards, National Certificates	
	Entry level	Entry level	Level 1	Level 1	
	Entry Level Certificate (sub-levels 1–3), ESOL skills for life, functional skills Entry Level (English, maths & ICT)	Entry Level Certificate (sub-levels 1–3), ESW	Level 1 Certificate	Access 1	

Source: Warwick Institute for Employment Research (2012)

The RQF for England and Northern Ireland, and the CQFW for Wales are similarly structured, each using eight levels. National vocational qualifications (NVQs) are included in the frameworks and there tends to be alignment between the NVQ level and the RQF level, particularly at the lower ends. In contrast, Scotland's SCQF has 12 levels, and the vocational qualifications do not directly align to the framework levels. For example, level 1 of the Scottish vocational qualifications (SVQ) is at SCQF Level 4, and SVQ Level 5 is at SCQF Level 11.

For the RQF, the qualification level "indicates the difficulty and complexity of the knowledge and skills associated with any qualification" (Ofqual, 2019, p. 27). Each qualification level has a set of level descriptors linked to it, which "are simple to interpret and present a clear hierarchy of demand. The RQF level descriptors are expressed in terms of knowledge and skills categories only" (Ofqual, 2019, p. 28). Hierarchy is not based on the credit value of the qualification, as credit value is merely an indication of total qualification time—i.e., the amount of time required for learning, including both teaching and assessment as well as non-supervised learning. The underpinning principles for the SCQF are similar: "Qualifications in the SCQF are compared using two measures: level and credit. The level of a qualification shows how difficult the learning is. The credit points show the size of the qualification and how much work is involved in achieving that qualification" (Warwick Institute for Employment Research, 2010).

For both the RQF and the SCQF, the level is supposed to indicate the difficulty of the qualification, while the level descriptor provides the justification for the classification in terms of knowledge and skill. The table below provides an example of the RQF's level descriptors.

TABLE 7: England and Northern Ireland's RQF levels

LEVEL	KNOWLEDGE DESCRIPTOR (THE HOLDER…)	SKILLS DESCRIPTOR (THE HOLDER CAN…)
Entry 1	Progresses along a continuum that ranges from the most elementary of achievements to beginning to make use of knowledge and/or understanding that relate to the subject or immediate environment.	Progress along a continuum that ranges from the most elementary of achievements to beginning to make use of skills that relate to the subject or the immediate environment.
Entry 2	Has basic knowledge or understanding of a subject and/or can carry out simple, familiar tasks; and Knows the steps needed to complete simple activities.	Carry out simple, familiar tasks and activities. Follow instructions or use rehearsed steps to complete tasks and activities.
Entry 3	Has basic knowledge and understanding to carry out structured tasks and activities in familiar contexts; and Knows and understands the steps needed to complete structured tasks and activities in familiar contexts.	Carry out structured tasks and activities in familiar contexts. Be aware of the consequences of actions for self and others.
L1	Has basic factual knowledge of a subject and/or knowledge of facts, procedures, and ideas to complete well-defined routine tasks and address simple problems; and Is aware of aspects of information relevant to the area of study or work.	Use basic cognitive and practical skills to complete well-defined routine tasks and procedures. Select and use relevant information. Identify whether actions have been effective.
L2	Has knowledge and understanding of facts, procedures, and ideas in an area of study or field of work to complete well-defined tasks and address straightforward problems. Can interpret relevant information and ideas. Is aware of a range of information that is relevant to the area of study or work.	Select and use relevant cognitive and practical skills to complete well-defined, generally routine tasks and address straightforward problems. Identify, gather, and use relevant information to inform actions. Identify how effective actions have been.
L3	Has factual, procedural, and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that while well-defined, may be complex and non-routine. Can interpret and evaluate relevant information and ideas. Is aware of the nature of the area of study or work. Is aware of different perspectives or approaches within the area of study or work.	Identify, select, and use appropriate cognitive and practical skills, methods and procedures to address problems that while well-defined, may be complex and non-routine. Use appropriate investigation to inform actions. Review how effective methods and actions have been.

LEVEL	KNOWLEDGE DESCRIPTOR (THE HOLDER…)	SKILLS DESCRIPTOR (THE HOLDER CAN…)
L4	Has practical, theoretical, or technical knowledge and understanding of a subject or field of work to address problems that are well defined but complex and non-routine. Can analyse, interpret and evaluate relevant information and ideas. Is aware of the nature of approximate scope of the area of study or work. Has an informed awareness of different perspectives or approaches within the area of study or work.	Identify, adapt, and use appropriate cognitive and practical skills to inform actions and address problems that are complex and non-routine while normally fairly well-defined. Review the effectiveness and appropriateness of methods, actions and results.
L5	Has practical, theoretical, or technological knowledge and understanding of a subject or field of work to find ways forward in broadly defined, complex contexts. Can analyse, interpret and evaluate relevant information, concepts and ideas. Is aware of the nature and scope of the area of study or work. Understands different perspectives, approaches or schools of thought and the reasoning behind them.	Determine, adapt, and use appropriate methods, cognitive and practical skills to address broadly defined, complex problems. Use relevant research or development to inform actions. Evaluate actions, methods and results.
L6	Has advanced practical, conceptual, or technological knowledge and understanding of a subject or field of work to create ways forward in contexts where there are many interacting factors. Understands different perspectives, approaches or schools of thought and the theories that underpin them. Can critically analyse, interpret and evaluate complex information, concepts and ideas.	Determine, refine, adapt, and use appropriate methods and advanced cognitive and practical skills to address problems that have limited definition and involve many interacting factors. Use and, where appropriate, design relevant research and development to inform actions. Evaluate actions, methods and results and their implications.
L7	Reformulates and uses practical, conceptual, or technological knowledge and understanding of a subject or field of work to create ways forward in contexts where there are many interacting factors. Critically analyses, interprets and evaluates complex information, concepts and theories to produce modified conceptions. Understands the wider contexts in which the area of study or work is located. Understands current developments in the area of study or work. Understands different theoretical and methodological perspectives and how they affect the area of study or work.	Use specialised skills to conceptualise and address problematic situations that involve many interacting factors. Determine and use appropriate methodologies and approaches. Design and undertake research, development or strategic activities to inform or produce change in the area of work or study. Critically evaluate actions, methods and results and their short- and long-term implications.
L8	Develops original practical, conceptual, or technological understanding to create ways forward in contexts that lack definition and where there are many complex, interacting factors. Critically analyses, interprets and evaluates complex information, concepts and theories to produce new knowledge and theories. Understands and reconceptualises the wider contexts in which the field of knowledge or work is located. Extends a field of knowledge or work by contributing original knowledge and thinking. Exercises critical understanding of different theoretical and methodological perspectives and how they affect the field of knowledge or work.	Use advanced and specialised skills and techniques to conceptualise and address problematic situations that involve many complex, interacting factors. Formulate and use appropriate methodologies and approaches. Initiate, design and undertake research, development or strategic activities that extend or produce significant change in the field of work or study. Critically evaluate actions, methods and results and their short- and long-term implications for the field of work or knowledge and its wider context.

Source: Ofqual (2020)

The RQF also does not explicitly structure the hierarchy in terms of elementary, intermediate, and advanced skill. However, considering the descriptions of the three lowest levels (entry levels 1–3), levels 1 and 2 of the RQF appear to be at the elementary skill level, based on their indicated use for access to initial employment or further education, and on their alignment with secondary education levels. The descriptors for these levels refer to "basic" knowledge and routinised tasks. Levels 3 to 5 seem to be at the intermediate level, as there is reference to their use for qualified or skilled workers and "specialised" education and training. Level 3 begins to reference knowledge and skills required for "complex and non-routine" problem-solving. High skill enters at levels 6 to 8 as they begin to refer to "advanced" knowledge and "advanced" and/or "specialised" skills in their level descriptors. These levels are also linked to higher education and "advanced skills training" as well as professionals in terms of employment.

The progression in difficulty and complexity through the levels is evident in the descriptions of knowledge and skills that the qualification holder is required to demonstrate. However, these descriptions are not in easily quantifiable terms and are subject to the user's interpretation. The levels are also linked to employment levels, although considering that the UK's Standard Occupational Classification uses educational levels to define its skill levels, it is not clear how this would assist in clarifying the hierarchy.

An interesting difference between the English and Northern Irish RQF and the South African NQF and its sub-frameworks is the explicit distinction that is made between knowledge and skill descriptors at each level of the RQF. This is in contrast to the use of level descriptors based on applied competencies in the NQF, which imply an increasing level of both knowledge and skills, but do not explicitly outline the expected outcomes of each level in terms of either category.

3.4 Case Study: The United States of America's Qualifications System

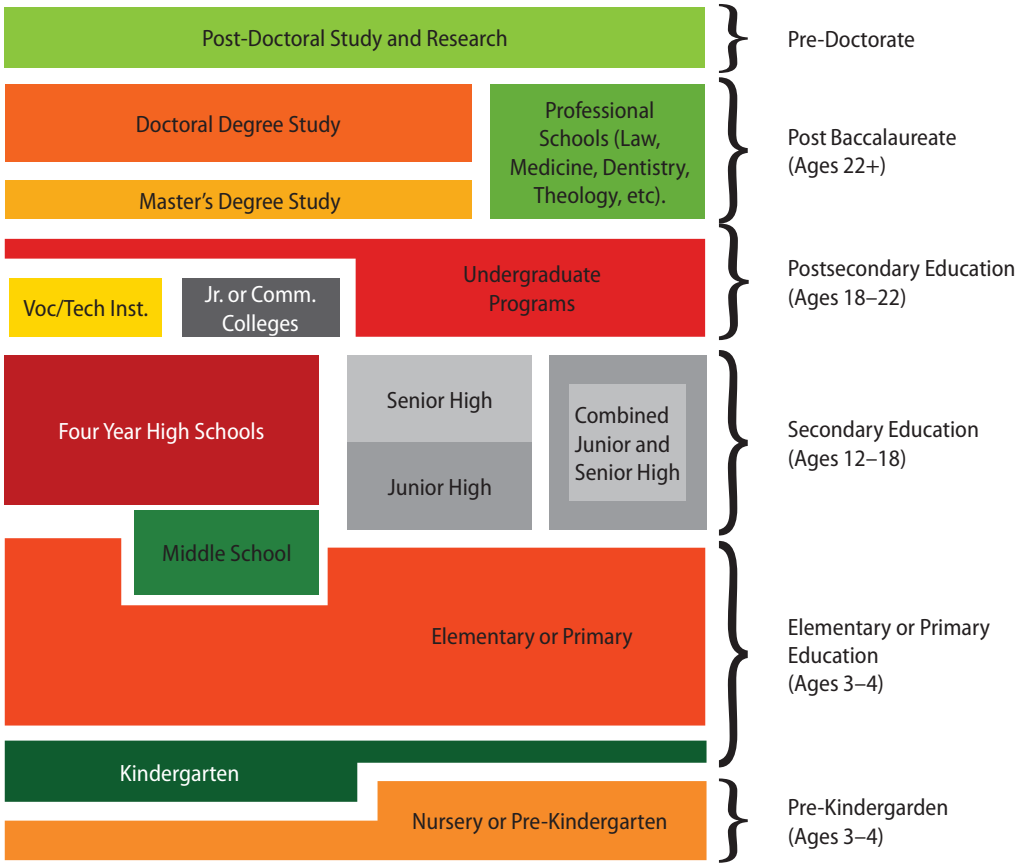
School-leaving and higher education qualifications in the United States of America (US) consist of the following (European Education Directory, n.d.):

- High school diploma
- Certificate (sub-bachelor or vocational)
- Diploma (sub-bachelor or vocational)
- Associate degree
- Bachelor's degree
- First professional degree
- Post-bachelor's diploma or certificate
- Master's degree
- Certificate of advanced study
- Education specialist degree
- Doctorate

The overall structure is indicated in the following figure.

FIGURE 2: The US education system

The following is a map of the US education system combining all patterns at the primary and secondary education levels and including the postsecondary education system



Source: Adapted from the National Centre for Education Statistics (United States Department of Education)

Certificates tend to be vocational and are offered by community colleges and private trade schools, while diplomas and associate degrees are offered by community colleges. Bachelor's degrees and graduate degrees are offered by universities. Vocational qualifications appear to mirror the same levels as the general education system, as shown below:

TABLE 8: The US's postsecondary qualifications

PROGRAMME	DURATION	QUALIFICATION
Postsecondary (Associate's degree level)	1–2 years	Postsecondary award, certificate, diploma
Postsecondary (Bachelor's degree level)	2–4 years	Postsecondary award, certificate, diploma

It appears that the hierarchy of the US higher education system is based on the duration of the qualification or programme. Credits are used to indicate course hours, which are then combined to indicate the total credits (hours) required for a particular programme. For example, a bachelor's degree is:

> [A]warded after completing a specified number of credits in a major field of study. Think about credit hours as the number of hours spent per week in a classroom. Every course earns a certain number of credits, and each institution has its own requirement for the number of credits needed to graduate.
>
> The bachelor's degree is usually completed in four years of full-time study. U.S. colleges and universities have student advisers who guide students in their choice of courses to reach the credit hours needed for graduation. (Education USA, n.d.)

This concept applies to most qualifications. Certificates are between six months and one year in duration, followed by associate degrees, which take two years. From a hierarchical perspective, both qualifications appear to be at the elementary level and prepare students for entry into the labour market. Intermediate level qualifications would be the bachelor's degree and, potentially, some of the first professional degrees, which take four years to obtain.

High-level qualifications are given a duration with the coda 'beyond the bachelor's degree', which implies that the four years of study should be added to the total duration. Thus, a master's degree is listed as two years of study beyond the bachelor's degree, while a doctorate is three to four years of study beyond the bachelor's degree. Professional degrees such as those in the medical field are also in this category as they require three or more years of study beyond the bachelor's degree.

3.5 Overarching Comments Emerging from the Case Studies

India and the UK have both implemented some form of national qualifications framework that provides structure and hierarchy to their qualifications (including their vocational qualifications). Both countries make use of level descriptors to differentiate between levels and to indicate increasing points of difficulty. However, the descriptions of knowledge and skill (and for India, responsibility as well) are not always easy to quantify as the adjectives used tend to be quite vague. For example, the distinction between 'narrow' and 'wide-ranging', or between 'basic' and 'advanced' is not spelled out in the descriptions. Nevertheless, these frameworks do provide a degree of guidance in terms of distinguishing between knowledge and skills in ways that may be useful in developing specific qualifications.

In contrast, the South African NQF uses the concept of applied competence to describe each of its levels. Applied competencies aim to provide a well-rounded basis for the development of qualifications in the framework, focusing on three types of competence: foundational, practical, and reflexive (Lotz-Sisitka & Raven, 2009). However, in practice, the use of applied competence is not consistent across the three sub-frameworks of the NQF, and there is no real evidence that the three types of competence have been referenced in developing any of the sub-frameworks.

On the other hand, the US's education system does not make use of any form of qualification framework, and the hierarchical structure of its qualifications is based on the duration of study. While this is more easily quantifiable, it may not take into consideration the differences between qualifications that may have the same duration but are not necessarily at the same level of difficulty.

The South African qualifications frameworks and sub-frameworks are not classified in terms of elementary, intermediate, and advanced skills. Rather, these classifications arise from other policy and planning processes, particularly the National Skills Development Strategy III, the National Skills Development Plan, and Statistics South Africa. The use of the categories elementary/low, intermediate/medium, and advanced/high skills provides a valuable shorthand for targeting support for particular types of skill development programmes, and it is necessary to identify a consistently used definition for the three categories.

Kraak (2008), for example, suggests that general education and training, which comprises Grades 1–9 of compulsory education and equates to NQF Level 1, should be considered as entry-level skills. They propose that university education (from a bachelor's degree to a doctorate) or its equivalent, which equated to NQF Levels 6–8 at the time, should be considered as high-level skills. The remaining NQF Levels 2–5 in between would then be considered as intermediate-level skills, corresponding to the further education and training band and to the first level of the higher education and training band (Kraak, 2008).

Reddy et al. (2016) suggest a different classification, with no formal schooling equating NQF Levels 1–3 and being classified as low skills, NQF Levels 4–5 as intermediate skills, and NQF Levels 6–10 as high skills. The DHET uses the latter classification in its 2019 report on skills supply and demand in South Africa (DHET, 2019). However, the 2022 DHET report classifies skill levels in terms of occupations rather than qualifications (DHET, 2022).

The international case studies from India, the UK, and the US discussed in this report also do not contain explicit categorisations of skills in terms of elementary, intermediate, and advanced levels, which reinforces the point that these classifications are useful from a policy development perspective, but they are not built into the qualifications frameworks themselves.

PART 4

Links between Qualification Frameworks and the Occupational Classification System

4.1 The Logic and Challenges of the Hierarchy Structure

South Africa's NQF is intended to provide a broad hierarchical logic that is translated into more focused applications in the three sub-frameworks. In other words, a qualification at the same level on each sub-framework is supposed to have something that is substantively the same in terms of its 'level'. But what this means in practice is far from straightforward. The principle behind the hierarchy is of increasing complexity in the level descriptors as progress is made across NQF levels. The overall level descriptors are then intended to be adapted to the specific requirements of the sub-frameworks, theoretically meaning that qualifications at the same NQF level should be comparable in terms of the capacities and capabilities required to achieve them.

In practice, multiple challenges arise when determining the point of difficulty between qualifications at particular levels within qualifications frameworks. This difficulty is in part due to the nature of the level descriptors, which are meant to function as indicators of competency that capture the qualities and abilities that should be achieved by all learners who qualify at a particular level within the framework (Allais, 2014), but in reality, they are applied in quite distinct ways in each of the sub-frameworks. There is very little evidence available of level descriptors being used in practice, either in the design of qualifications or in their allocation to specific levels (Allais, 2014).

The second hierarchical logic underlying the sub-frameworks is based on the volume of learning required to attain a qualification at a particular NQF level. Learning volumes are measured using credits, with each credit equivalent to 10 notional hours of study. A fairly clear hierarchy of qualifications manifests—with the accumulation of credits progressively resulting in achievements of higher levels in the structure. However, how this simple policy vision of an educational hierarchy translates into actual qualifications and curricula, and what this means about the differences of breadth, depth, and complexity of learning, is much more complex, and meaningful notions of 'equivalence' are highly problematic.

But what is even more complicated is how these points of comparison or notions of 'levels' and 'sub-framework-mediated learning volumes' translate into hierarchies in the labour market. For example, the 360 credits of a bachelor's degree do not have the same 'real world' value in terms of potential remuneration as the 360 credits of a diploma might. This relationship adds a further dimension of complexity to the ways that the education system interacts with the labour market and the occupation classifications used in labour and economic policy.

It is also unclear what the categories of level descriptors mean even when they are applied only to educational qualifications. How much is entailed in 'a basic understanding', and how much in a 'fundamental understanding'? Extensive research demonstrates that these generic terms add little value (Allais et al., 2007; Allais, 2012). This then begs the question of how these categories are applicable in the context of labour markets. In reality, what is evident is that widely understood qualifications in particular societies tend to function as implicit benchmarks themselves, rather than as actual applications of level descriptors (Allais, 2014). Furthermore, the circular relationship between learning time and the hierarchical classification of qualifications extends into the relationship between qualifications frameworks and occupational classification systems, where learning time is frequently invoked as a fundamental means of ranking occupations (Allais, 2014).

Even accepting the complexity of arriving at a shared understanding of intermediate/medium skills, there is a need to explore the emphasis that is placed on the demand for medium-level skills to determine whether this is evidenced by the reality of the labour market—assuming that medium-level skills broadly equate to qualifications.

4.2 The Implications of Qualification Classifications on Skills Anticipation

The use of three broad categories of qualification in terms of skill levels provides a widespread means of targeting skills development funding towards qualifications that can feed into specific sectors of the economy. However, for skills anticipation processes, it is arguably more important to identify the economic sectors in which skills are required and to support the educational programmes and processes that feed into these sectors. For this purpose, the NQF and its sub-frameworks provide a means of identifying the qualification types and levels that are likely to be needed as the South African economy develops.

Skills anticipation therefore requires an articulation between qualifications frameworks and occupational classifications frameworks. However, in reality there are fairly superficial points of comparison between qualifications based on NQF-mediated learning complexities and sub-framework-mediated learning volumes that do not translate into similar hierarchical outcomes in labour markets. Essentially, while there is a theoretical relationship between NQF levels, such that qualifications at the same level should be comparable in terms of the hierarchy of skills and competencies required to achieve them, there is a de facto hierarchical difference between the general and technical qualifications listed on the NQF in the labour market. Ultimately, a general qualification is perceived to be of higher value than a technical or vocational qualification. However, the sets of qualification types, which are arranged hierarchically, seem to have more direct labour market applicability.

Thus, in reality, we find that there is still a fuzzy articulation between the qualifications frameworks and occupational classifications in South Africa, and there is not yet an understanding as to how these skills are developed through education systems and work experience. Yet, despite these challenges, this section highlights that both qualifications frameworks and occupational classification systems continue to try to categorise existing realities into sets of rules despite what is already evident, which is that practices in the real world do not fit neatly into these rules. The following section therefore considers the reality of the labour market and the nature of provision in more depth as a way of deepening our ability to address the question of how, and whether, the qualification systems support skills anticipation.

PART 5

Conclusion

Conclusion

This report highlights a number of key findings. Critically, we found that at present, while there is a theoretical relationship between NQF levels, such that qualifications at the same level should be comparable in terms of the hierarchy of skills and the competencies required to achieve them, there is a de facto hierarchical difference between the general and technical or vocational qualifications on the NQF in the labour market. To put it crudely, the perception of the value of a general qualification is higher than that of a technical or vocational qualification.

The three sub-frameworks were created to address the inability of different systems of provision to agree on the categorisation and design of qualifications, among other reasons. This is an inevitable tension. Despite the policy aspiration of ensuring that the NQF level descriptors can be applied across all three sub-frameworks, in reality, systems that incorporate hierarchicalisation in very distinct contexts will typically have conflicting principles, which in some cases may work against the rules on which the hierarchies are based. In other words, level descriptors do not work in practice nearly as simply as they are described in policy documents.

The development and use of 'levels' and level descriptors in the NQF and across qualifications frameworks globally illustrates the complexity in this regard. At the broadest level, the differences between qualifications within particular hierarchical classification systems are clear: for example, a PhD will be 'higher' than a bachelor's degree. However, it is more challenging to make judgements about more specific comparisons of 'difficulty' between qualifications at particular levels within qualifications frameworks (Allais, 2014).

The way these level descriptors are applied in practice within each sub-framework, in terms of defining levels and the concomitant hierarchies, are outlined in this report. They seem to suggest a reality that is static and unchanging, and understandings and uses of skills that are not affected by technical and social changes. This observation assumes that hierarchies are based on reliable conceptual foundations and justifications, which in the first subsection we argued are questionable or at the very least not unclear.

PART 6

References

6.1 Overarching References

Allais, S. (2007). Why the South African NQF failed: Lessons for countries wanting to introduce national qualifications frameworks. *European Journal of Education* 42(4), pp. 523–547.

Allais, S. (2011). The changing faces of the South African National Qualifications Framework. *Journal of Education and Work* 24(3–4), pp. 343–358.

Allais, S. (2012). Claims versus practicalities: Lessons about using learning outcomes. *Journal of Education and Work* 25(3), pp. 331–334.

Allais, S. (2014). *Selling Out Education: National Qualifications Frameworks and the Neglect of Knowledge*. Sense Publishers, Rotterdam.

Allais, S. (2017). Towards measuring the economic value of higher education: Lessons from South Africa. *Comparative Education* 53(1), pp. 147–163. Available at: https://doi.org/10.1080/03050068.2017.1254985.

Allais, S., King, M., Bowie, L., & Marock, C. (2007). *The 'F' Word: The Quality of the 'Fundamental' Component of Qualifications in General and Further Education and Training*. Umalusi Council for Quality Assurance, Pretoria.

Brockmann, M., Clarke, L., & Winch, C. (2011). *Knowledge, Skills and Competence in the European Labour Market. What's in a Vocational Qualification?* Routledge.

Brockmann, M., Clarke, L., Winch, C., Hanf, G., Méhaut, P., & Westerhuis, A. (2011). Introduction: Cross-national equivalence of skills and qualifications accross Europe? In Brockmann, M., Clarke, L., & Winch, C. (eds.), *Knowledge, Skills and Competence in the European Labour Market. What's in a Vocational Qualification?* Routledge, pp. 1–21.

Bryson, J. (2017). Disciplinary perspectives on skill. In Warhurst, C., Mayhew, K., Finegold, D. & Buchanan, J. (eds.), *The Oxford Handbook of Skills and Training*. Oxford University Press, Oxford, pp. 17–35.

Council on Higher Education (CHE) (2013). *A Framework for Qualification Standards in Higher Education*. Brummeria, pp. 1–41.

Department of Higher Education and Training (DHET) (2019). *Skills Supply and Demand in South Africa*. Labour Market Intelligence research programme, Pretoria.

Department of Higher Education and Training (DHET) (2022). *Skills Supply and Demand in South Africa*. Labour Market Intelligence research programme, Pretoria.

Hart, J. (2009). Cross-referencing qualifications frameworks (CES Briefing No. 49). Centre for Educational Sociology.

Jaque, E. (1964). *Time-Span Handbook*. Heinemann.

Kraak, A. (2008). A critical review of the national skills development strategy in South Africa. *Journal of Vocational Education and Training* 60(1), pp. 1–18.

Lotz-Sisitka, H., & Raven, G. (2009). South Africa: Applied competence as the guiding framework for environmental and sustainability education. In Fien, J., Maclean, R., & Park, M. (eds.), *Work, Learning and Sustainable Development: Opportunities and Challenges*. Springer Nature, Dordrecht, pp. 309–318.

Markowitsch, J., & Luomi-Messerer, K. (2008). Development and interpretation of descriptors of the European Qualifications Framework. *European Journal of Vocational Training* 42/43, pp. 33–58.

Marock, C. (2011). Considering key themes relating to the objectives of the NQF and the post-school objectives. Centre for Education Policy Development.

Méhaut, P., & Winch, C. (2011). EU initiatives in cross-national recognition of skills and qualifications. In M. Brockmann, L. Clarke, & C. Winch (eds.), *Knowledge, Skills and Competence in the European Labour Market: What's in a Vocational Qualification?* Routledge, pp. 22–35.

Raven, G. C. (2005). Enabling reflexivity and the development of reflexive competence within course processes: A case study of an environmental education professional development course. Doctoral dissertation, Rhodes University.

Reddy, V., Bhorat, H., Powell, M., Visser, M., & Arends, A. (2016). *Skills Supply and Demand in South Africa*. Labour Market Intelligence research programme, Human Sciences Research Council, Pretoria.

Schudel, I., Le Roux, C., Lotz-Sisitka, H., Loubser, C., O'Donoghue, R., & Shallcross, T. (2008). Contextualising learning in advanced certificate in education (environmental education) courses: Synthesising contexts and experiences. *South African Journal of Education* 28(4), pp. 543–559.

Singh, M., & Duvekot, R. (2013). *Linking Recognition Practices and National Qualifications Frameworks: International Benchmarking of Experiences and Strategies on the Recognition, Validation and Accreditation (RVA) of Non-Formal and Informal Learning*. UNESCO Institute for Lifelong Learning, Hamburg.

South African Government (2010). *National Qualifications Framework Act 67 of 2008*. Own publication, Pretoria.

South African Government (2013). *National Qualifications Framework Act (67/2008): Publication of the General and Further Education and Training Qualifications Sub-framework and Higher Education Qualifications Sub-Framework of the National Qualifications Framework*. Own publication, Pretoria, pp. 1–80.

South African Government (2014). *National Qualifications Act, 2008 (Act No 67 of 2008): Higher Education Qualifications Sub-frameswork (HEQSF)*. Own publication, Pretoria.

South African Government (2020). *National Qualifications Act: Revised Occupational Qualifications Sub-Framework*. Own publication, Pretoria.

South African Government (2021). *Occupational Qualifications Sub-Framework (OQSF) Policy, 2021*. Government Gazette no. 45401. Own publication, Pretoria.

South African Qualifications Authority (SAQA) (2012). *Policy and Criteria for the Registration of Qualifications and Part-Qualifications on the National Qualifications Framework*. Own publication, Pretoria.

South African Qualifications Authority (SAQA) (2015). *Level Descriptors for the South African National Qualification Framework*. Own publication, Pretoria.

Umalusi Council for Quality Assurance in General and Further Education and Training (2014). *Policy for the National Senior Certificate for Adults: A Qualification at Level 4 on the General and Further Education and Training Qualifications Sub-framework of the National Qualifications Framework*. Government Gazette no. 37965, South African Government, Pretoria.

6.2 References for India

International Labour Organization (n.d.). *International Standard Classification of Occupations (ISCO-08)*.

Logistics Sector Skill Council. NSQF level descriptors. Available at: https://education.lsc-india.com/nsqf_level.

Mehrotra, V. (2016). NVEQF: Skill development under the National Skills Qualifications Framework in India: Imperatives and challenges. In Pilz M. (ed.), *India: Preparation for the World of Work*. Springer VS, Wiesbaden, pp. 281–310. Available at: https://doi.org/10.1007/978-3-658-08502-5_14.

Ministry of Human Resource Development (2012). *National Vocational Education Qualifications Framework*.

Ministry of Labour and Employment (2015a). *National Classification of Occupations—2015*. Volume I. Available at: https://www.ncs.gov.in/Documents/National%20Classification%20of%20Occupations%20_Vol%20I-%202015.pdf.

Ministry of Labour and Employment (2015b). *National Classification of Occupations—2015*. Volume II - A. Available at: https://www.ncs.gov.in/Documents/National%20Classification%20of%20Occupations%20_Vol%20II-A-%202015.pdf.

National Skills Development Agency (n.d.). NQSF FAQ. Available at: https://www.nsda.gov.in/nsqf.html.

National Skills Development Agency (n.d.). NSQF Level Descriptors. Available at: https://www.nsda.gov.in/nsqf.html.

6.3 References for the UK

International Labour Organization (n.d.). *International Standard Classification of Occupations (ISCO-08)*.

Office of Qualifications and Examinations Regulation (Ofqual) (2019). *Referencing the Qualifications Frameworks of England and Northern Ireland to the European Qualifications Framework*. Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/840837/.

Ofqual (2020). *Ofqual Handbook: General Conditions of Recognition*. Available at: https://www.gov.uk/guidance/ofqual-handbook/section-e-design-and-development-ofqualifications#level-descriptors.

Warwick Institute for Employment Research (2010). *Qualifications Developments in Scotland*. Available at: https://warwick.ac.uk/fac/soc/ier/glacier/qual/scotland/.

Warwick Institute for Employment Research (2012). *Comparing Qualifications across Countries*. Available at: https://warwick.ac.uk/fac/soc/ier/glacier/qual/compare/.

6.4 References for the US

International Labour Organization (n.d.). *International Standard Classification of Occupations (ISCO-08)*.

Education USA (n.d). Step 1: Overview. Research your options. Available at: https://educationusa.state.gov/your-5-steps-us-study/research-your-options.

The European Education Directory (n.d.). United States of America. Available at: https://www.euroeducation.net/prof/usa.htm.

PART 7

Annexures

Annexure A: Countries by occupational qualification systems

Group 1: Australia, Bangladesh, Botswana, Germany, Hong Kong (SAR China), and India

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
OCCUPATIONAL CLASSIFICATION SYSTEM						
NAME	Australian and New Zealand Standard Classification of Occupations (ANZSCO)	Bangladesh Standard Classification of Occupations (BSCO)	Botswana Standard Classification of Occupations (BOSCO), 2008	German Classification of Occupations 2010 (KldB-2010)	International Labour Organization's International Standard Classification of Occupations 2008 (ISCO-08)	National Classification of Occupations-2015 (NCO-2015)
STATED PURPOSE	Labour market intelligence: Comparability of data between Australia and New Zealand.	Labour market intelligence: Classifying and aggregating occupational information and identifying priority occupations.	No clear purpose indicated, but appears to have been designed as purely statistical and for international comparability.	Labour market intelligence utilised for a wide range of purposes.	National labour market intelligence tool.	Functions as a repository for labour market intelligence including maintaining standards in occupations, international comparability, and statistics.
ENACTED PURPOSE	Labour market intelligence	Occupational classification during the Labour Force Surveys, but also informed the development of the National Training and Vocational Qualifications Framework (NTVQF).	Does not appear to be widely used as there is also another tool, the Labour Market Observatory (LMO), which was intended to play a critical role in monitoring changes in labour market trends and to produce information on occupations in demand.	The Federal Employment Agency uses the Dokumentations-kennziffer, derived from the KldB-2010, for job placements. However, it is only a considered a supplementary tool.	Labour market intelligence	Labour market intelligence

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
INTERNATIONAL BASIS	None indicated	Based on the ISCO-08	Based on the ISCO-08	Not directly linked to ISCO-08 although provision is made for comparative analysis.	Adopted the ISCO-08 without any modification for its own context.	Based on the ISCO-08
IDENTIFICATION OF PRIORITY OCCUPATIONS	The Australian Government Department of Education, Skills and Employment consults with industry skills councils to develop occupational qualifications, which are then recorded on the Australian Qualifications Framework (AQF). The Australian Bureau of Statistics uses the information from the qualifications listed on the AQF to update the ANZSCO occupation classifications.	The BSCO is used to categorise priority occupations, which are identified by the industry skills councils and reflected in each specific council's report for its sector.	Priority occupations are identified in line with the priorities outlined in the government's Vision 2036, the National Development Plan, and long-term strategies of different economic sectors. The Human Resource Development Council (HRDC) publishes the top occupations in high demand, together with a sectoral breakdown on the criteria for prioritisation. The LMO was intended to produce information on priority occupations, based on changing labour market trends. It was not clear, however, if this was actually happening.	The term 'priority occupations' does not appear to be used. Despite this, it seems that they are identified through a negotiated and continuous process with all social partners. The Institute for Employment Research conducts a yearly Job Vacancy Survey that provides information to the Federal Employment Agency on all vacant positions, and this gives an indication of demand for occupations.	The ISCO-08 is not used to identify priority qualifications. It appears that the Industry Training Advisory Committees (ITACs) or Cross-Industry Training Advisory Committees (CITACs) may be involved in the identification of priority occupations through their engagement with the development of Specification of Competency Standards (SCS) for their sectors.	The NOC-2015 is not used to identify priority occupations. The Ministry of Labour and Employment, through the National Skill Development Corporation (NSDC), works with industry, represented by the Sector Skills Councils (SSCs), to determine skills gaps and shortages in each sector.

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
OCCUPATIONAL QUALIFICATIONS						
QUALIFICATION FRAMEWORK	Australian Qualifications Framework (AQF)	National Training and Vocational Qualifications Framework (NTVQF)	National Credit and Qualifications Framework Botswana National Vocational Qualifications Framework (BNVQF)	Deutsche Qualifikationsrahmen für lebenslanges Lernen (DQR) (although not regulatory—see note below)	Hong Kong Qualifications Framework (HKQF)	National Skills Qualification Framework (NSQF) National Vocational Education Qualification Framework (NVEQF)
IF NONE, HOW ARE OCCUPATIONAL QUALIFICATIONS MANAGED?	N/A	N/A	N/A	Although the DQR is in place, vocational education and training (VET) in Germany is still based on the dual system. There are clearly defined training standards, and training qualifications are recognised throughout the country. The DQR is used for transparency and orientation in the VET system but it is not regulatory.	N/A	N/A
RELATIONSHIP						
IS THERE A RELATIONSHIP BETWEEN THE OCCUPATIONAL CLASSIFICATION SYSTEM AND OCCUPATIONAL QUALIFICATIONS?	No	Yes	No	No	No	Yes but limited—the NOC-2015 is linked to the NVEQF through the National Occupational Standards (NOS) developed for every occupation classified, and which form the basis of occupational qualifications.

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
IF NOT, WHAT ARE THEY USING?	Developing bodies, such as industry skills councils, create training packages that are then used to develop accredited courses. Accredited courses are, however, required to provide the ANZSCO occupational reference on the application form.	N/A	The BNVQF allows industry and training providers to collaborate in the development of qualifications. Priority occupations are drawn from industry and government strategies and policies.	Regional standards are issued by the various chambers according to the requests of the regional labour market. The various chambers' tripartite training committees are responsible for making decisions on these. Employers and trade unions are seen as the main stakeholders of the dual system and are the drivers of the National Occupational Standards (NOS). The federal government is unlikely to proceed with an NOS without agreement from the social partners. NOS are developed and issued by a combination of the federal government (represented by the Ministry of Education and Science), social partners, and the Federal Institute for Vocational Education and Training.	ITACs and CITACs are established by industries with the assistance of the Education Bureau and serve to identify skills gaps as well as develop occupational qualifications.	The SSCs work in partnership with the NSDC to identify skills gaps and develop occupational qualifications.

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
INFORMATION FLOW	Bottom up: ANZSCO is updated to report on developments in the AQF.	Top down: The BSCO informed the development of the NTVQF to match the BSCO and to respond to occupational and industrial skills needs.	The BOSCO-2008 occupation codes are used to indicate occupations that are considered in demand. However, there is no further indication of information flow between the BOSCO and the BNVQF.	Bottom up: Employers and trade unions feed information on occupations to their associations on a federal level.	The HKQF and the ISCO-08 exist independently. The HKQF is more dominant in the Hong Kong education and labour markets. Due to the lack of context-specific modifications of ISCO-08 for the Hong Kong context, it is not possible for the HKQF to even influence the occupations classified by the ISCO-08.	Bottom up: The NOS developed by the SSCs are mapped on all occupations classified by the NOC-2015. The NOC is updated to report developments in the NVEQF.
HOW DOES SIGNALLING TAKE PLACE?	The ANZSCO does not signal demand. Demand is based on industry requirements.	The BSCO signals demand for occupational qualifications by categorising priority occupations. The industry skills councils identify the priority sectors and occupations and produce reports indicating these skills shortages. They then work with the Bangladesh Technical Education Board (BTEB) to develop the standard competencies (skills, sets of knowledge, and attitudes) required to perform tasks in identified occupations.	Signalling is done by the HRDC as it is responsible for publishing the document with the criteria for prioritising occupations, as well as the list of top occupations in demand. The LMO was meant to be a tool that was continually updated with the changing labour market trends in order to provide the latest information on priority occupations, but not all occupations are currently listed on the website and it is not clear whether it is actually being used as intended.	Signalling occurs at industry level through the involvement of state, employer, and labour representatives in an ongoing process of determining which occupations are in demand. Occupations in demand can differ between regional labour markets as there are still distinct differences between the regions.	ISCO-08 is not used to signal demand. The ITACs and CITACs signal demand. They identify the skills gaps in their sectors, using sector or industry surveys, and develop qualifications accordingly.	There is no indication of the NCO-2015 being used for skills planning or determining skills in demand. Signalling is done by the SSCs, which develop a sectoral framework for each sector, used to conduct skills audits and to signal demand for new occupational qualifications.

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
CURRICULUM DESIGN AND DEVELOPMENT DRIVERS	The Australian Government Department of Education, Skills and Employment, in consultation with the states and territories, is responsible for the AQF. Curriculum is developed through a national consultation process involving industry representatives and other VET stakeholders. Industry participates closely in setting the national training agenda for schools and VET/higher education institutions through 'developing bodies' such as industry skills councils, and qualifications are designed to meet the skills needs of industry first.	The Directorate of Technical Education is responsible for upgrading skill standards (with the support of the BTEB), establishing training curricula, and facilitating the implementation of the qualifications framework. The BTEB identifies experts from the industry skills councils and they are linked with curriculum developers who lead the teams. Curriculum is developed and aligned closely to the national competency standards accepted by industry.	The Department of Technical and Vocational Education and Training is responsible for the planning and implementation of all institutional-based vocational programmes. Limited information was available on how curricula are designed and developed.	Curriculum design and development is done in consultation with all social partners. However, the responsibility for curriculum design rests strongly with VET college lecturers and the master artisans/ technicians responsible for workplace teaching and learning.	The Hong Kong Council for Accreditation of Academic and Vocational Qualifications accredits qualifications. ITACs and CITACs play a leading role in the implementation of the HKQF and in the development of Specification of Competency Standards, which are industry- or sector-specific competency standards that can be grouped to form a qualification at a particular level on the HKQF.	One of the functions of the SSCs is to develop skill competency standards and qualifications that form NOS. These are bundled into 'qualification packs' that include all elements of the occupational qualification, which is then registered on the NVEQF.

	AUSTRALIA	BANGLADESH	BOTSWANA	GERMANY	HONG KONG (SAR CHINA)	INDIA
NOTES			Limited information was available electronically on the BOSCO and on the BNVQF. Botswana has attempted to create a system that seems similar to the Occupational Information Network (O*Net) on the LMO website, but it is unclear how this relates to the BOSCO and it has no apparent influence on the BNVQF. It is also incomplete as not all occupations are listed.	Germany is currently implementing the German Qualifications Framework for Lifelong Learning (or the DQR). However, it is a non-regulatory framework and is still in the process of being integrated into the policies of different sectors of the education system.		

Group 2: Japan, Mexico, South Korea, Uganda, United Kingdom, and United States of America

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
OCCUPATIONAL CLASSIFICATION SYSTEM						
NAME	Japan Standard Occupational Classification (JSOC)	Sistema Nacional de Clasificación de Ocupacione (SINCO)	Korean Standard Classification of Occupations (KSCO) Korean Employment Classification of Occupations (KECO)	ISCO-08 A second occupational classification has been designed by the Directorate of Industrial Training (DIT) but only has 70 occupations listed.	Standard Occupational Classification (SOC) system	Standard Occupational Classification (SOC) system
STATED PURPOSE	To classify occupations based on job similarities and to systematically arrange occupations for statistical purposes.	To reflect the occupational structure and for international comparability.	To compile official statistics and classify jobs into occupational categories. The KECO aims to help people access and utilise information on occupations. KECO was revised to reflect labour market dynamics.	ISCO-08 is used as a framework for the Uganda Bureau of Statistics' statistical data and administrative purposes.	To classify workers by their occupations, classification of jobs, career information, and statistical analysis for qualification development and labour market intelligence.	To classify workers and jobs into occupational categories, with the aim of collecting, calculating, analysing, and disseminating data.
ENACTED PURPOSE	Labour market intelligence, particularly the dissemination of statistics.	Used in the development of the National System of Competency Standards (NSCS).	Labour market intelligence. However, the KECO is also used to provide job placement services, and the occupational classification system is used as a basis for the development of National Competency Standards (NCS).	Limited statistical data and administrative purposes.	As per the stated purpose. However, it is also used for locating qualifications available in the UK and by awarding organisations for labour market intelligence.	Federal agencies use the SOC system to collect occupational data. The Occupational Information Network (O*NET) was developed as a primary source of occupational information and is based on the SOC. State and local labour market specialists in public workforce development offices frequently link O*NET data to SOC data.

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
INTERNATIONAL BASIS	Generally aligned with the ISCO. However, the original Japanese system appears to predate the ISCO. The contents of individual jobs in Japan are not as clear as in Europe and the US, which makes implementation of international occupational classifications problematic.	Developed based on the ISCO-08.	The KSCO is based on the ISCO-08. The KECO complements the KSCO, is based on the ISCO, and is modelled after the US's Standard Occupational Classification.	Uganda does not have an occupational classification system that is specific to its labour market. It uses the ISCO-08 as well as a second, smaller classification based on the Ugandan Vocational Qualifications Framework, which was developed based on ISCO-08.	The SOC is based on the ISCO-08.	None indicated, although there are some similarities to the ISCO occupational classification system. The SOC is a task-based classification system.
IDENTIFICATION OF PRIORITY OCCUPATIONS	The JSOC is used to identify priority occupations through the labour force surveys conducted by the Statistics Bureau and the Director-General for Policy Planning (Statistical Standards) of Japan.	The SINCO does not appear to be involved in identifying priority occupations. Priority occupations are identified through market research conducted by Colegio Nacional de Educación Profesional Técnica (CONALEP) and other institutions.	The KECO reflects labour market dynamics, and the occupational classification system is used to identify priority sectors and occupations.	The Uganda Vocational Qualifications Framework (UVQF) was used by the DIT to develop an occupational classification framework with 70 occupations listed. However, although the DIT states that its mandate is to use labour market intelligence to develop qualifications, it is not clear whether the 70 occupations are considered priority occupations.	The SOC is used for identifying priority occupations. The UK has a labour market intelligence gathering process, which includes gathering information and intelligence about future skills demand to inform skills planning.	O*NET, based on the SOC, is used to identify priority occupations. O*NET gathers information using surveys and interviews to pinpoint skills shortages, and rates occupations to find out which jobs are in demand.

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
OCCUPATIONAL QUALIFICATIONS						
QUALIFICATION FRAMEWORK	N/A	Marco Mexicano de Cualificaciones	National Qualifications Framework (NQF) under development Technical Qualifications Framework	UVQF	Regulated Qualifications Framework (RQF) for England and Northern Ireland Scottish Credit and Qualifications Framework (SCQF) Credit and Qualifications Framework for Wales (CQFW)	N/A
IF NOT, HOW ARE OCCUPATIONAL QUALIFICATIONS MANAGED?	There are official national licenses for certain occupations. These are awarded by bodies that are accredited by the government ministries. Most schools for vocational and practical skills education are privately run but the curricula are controlled by the Ministry of Education, Culture, Sports, Science, and Technology (MEXT). The National Institute for Academic Degrees and Quality Enhancement of Higher Education examines candidates for graduation after TVET institutions apply for approval to offer certifications.	N/A	N/A	N/A	N/A	The federal government has no direct governance of state and local education. Responsibility rests with each individual state to create a legislative framework. Local educational agencies have the primary responsibility for governance of TVET.

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
RELATIONSHIP						
IS THERE A RELATIONSHIP BETWEEN THE OCCUPATIONAL CLASSIFICATION SYSTEM AND OCCUPATIONAL QUALIFICATIONS?	No	Yes but limited—NSCS, based on the SINCO, is used for the development of certain occupational qualifications.	Yes	No	Yes	Potentially through O*NET
IF NOT, WHAT ARE THEY USING?	Japan uses an employer-led model whereby decisions on vocational qualifications and skills required are decided by individual employers.	N/A	N/A	It is unclear what is being used for labour market intelligence and to signal demand for new occupational qualifications, although the DIT states that occupational competencies identified in the labour market are used to develop competence-based curricula for the qualifications.	N/A	N/A
INFORMATION FLOW	There is no flow of information between the JSOC and occupational qualifications in either direction.	Top down: Occupational qualifications are developed based on the competencies in the SINCO.	Top down: The occupational classification system is used to identify broad industry areas for the development of the NQF, as well as priority fields in VET for the development of NCS.	Bottom up: Uganda developed the existing 70 occupations based on the UVQF. The DIT occupational classification system, therefore, follows the UVQF, which is then the occupation originator.	Top down: Awarding organisations use labour market intelligence from the SOC to make decisions on new qualifications.	O*NET provides occupational information that includes details of skills and knowledge requirements for occupations. However, it is not immediately evident if this is used in occupational qualification development.

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
HOW DOES SIGNALLING TAKE PLACE?	The Ministry of Health, Labour and Welfare (MHLW) and the MEXT share responsibility for the provision and supervision of skills demand. This system is not well-coordinated however, and most signalling occurs between schools and employers to ensure company-specific skills needs are met.	It is not clear how, or if, the SINCO signals demand for new occupational qualifications. It is reported that VET qualifications are not regularly updated, have limited recognition in the labour market, and that there are only weak links between the VET system and participating employers. Although some VET qualifications have been developed as a result of demand from industry, and the introduction of the dual system was motivated by the development of key sectors of the labour market, most existing VET qualifications are not aligned to the realities of the labour market. CONALEP and the Centres for Industrial Technical Education and for Research and Advanced Studies of the Instituto Politécnico Nacional belong to a group of institutions supported by the federal government and help to gather information on the labour market for use in developing competencies and occupational qualifications.	The occupational classification system signals demand for new qualifications. Qualifications are developed based on labour skills demand. The KECO was specifically revised to meet the future skills demand. Qualifications are developed by first identifying the competencies required by the industry and then using them to develop new qualifications.	It is not clear how signalling takes place between the occupational classification system and the UVQF. The DIT occupational qualification system may have been based on the market analysis conducted for the development on the UVQF. The ISCO-08 also does not appear to signal demand for occupational qualifications in Uganda's labour market as it has not been contextualised.	The SOC includes occupational and skills analyses, which results in an understanding of skills gaps and the aligning of the supply of and demand for occupations and skills in the labour market. Signalling for the changing demand for skills is done by indicating the changing distribution of skills that are being used in employment. Qualifications are developed and delivered to meet government policy requirements and the changing skills requirements in response to labour market demands.	The O*NET model may provide a certain degree of signalling between the SOC and occupational qualifications. One of the aims of O*NET was to gather information on skills shortages and feed that information into related government initiatives. However, as O*NET was not originally designed for research, the validity and accuracy of the data may be questionable. Each state has its own TVET objectives depending on the regional labour needs.

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
CURRICULUM DESIGN AND DEVELOPMENT DRIVERS	The JSOC is not used for curriculum design or development. A vocational ability development measures system was developed by the MHLW. This system is used as a guideline for capacity development and provides a scale for skills acquired nationally. MHLW and the Japan Vocational Ability Development Association have also developed the Vocational Capability Evaluation Standards to organise knowledge and skills that are needed in the labour market and to categorise competencies required for occupational standards. Firms have long-standing relationships with schools to ensure that their skills needs are met.	To respond to skills needs, a dual system based on the German model was implemented. However, this was not widely adopted due to the limited capacity of companies. Content for the dual system occupations was developed by CONALEP, although training institutions can create their own content if it is certified by the Secretariate of Public Education. For other VET qualifications, curricula are designed by CONALEP and certification is awarded by the secretariate. Curricula are designed based on the NSCS, which were developed by the Consejo Nacional de Normalización y Certificación de Competencias Laborales. Curricula are, however, not designed centrally, and decentralised institutions have a high level of independence in setting their curricula.	The occupational classification system is used to design and develop curricula. South Korea has identified broad industry areas to develop into the NQF, while priority fields in the VET system have been identified for the development of NCS. The Human Resource Development of South Korea, part of the Ministry of Employment and Labour, together with industry skills councils, develop the NCS. The NCS are the basis of occupational qualifications. The VET system was modified to align with German dual system and includes industry in the design of competency-based curricula. Institutions can also develop their own curricula, which must be certified by the government. Assessments are conducted against the NCS.	The DIT's occupational classification system is not used for curriculum design and development. The UVQF is used to design and develop curricula for the programmes offered at vocational colleges. However, some programmes, for example some engineering programmes at universities, are allowed to develop their own curricula and are then quality assured by the DIT. For institutions using the older BTVET system, curriculum design and development is coordinated by the Industrial Training Council, which forms part of the DIT, in collaboration with training centres and other industry stakeholders.	Awarding organisations are responsible for the development of new qualifications. They are required to follow the requirements laid down by the Office of Qualifications and Examinations Regulation (Ofqual) and to consult qualifications users to ensure that there is support for the qualification. Awarding organisations make use of NOS linked to an SOC code for the development of a vocational qualification.	There is no indication that O*NET or the SOC are used to design or develop curricula. TVET programmes are aligned according to National Career Clusters. Institutions have the primary responsibility for developing and implementing postsecondary standards. These standards are developed and enforced with reference to policies administered by state agencies, accrediting agencies' requirements, expectations of professional associations and employers, and the practices of other institutions. In-company training is a significant proportion of TVET and is provided by companies without any link to external government agencies or education institutions.

	JAPAN	MEXICO	SOUTH KOREA	UGANDA	UNITED KINGDOM (UK)	UNITED STATES OF AMERICA (US)
NOTES	The Japanese education and training system is characterised by a combination of on-the-job-training and off-the-job-training. Vocational education is not a requirement for new employees. At a later stage as training is required, it is done within the company. An attempt was made to implement a Japanese dual system based on the German model; it does not, however, appear to have been particularly successful. This is suggested to be due to the lack of the historical tradition associated with the dual system, as well as the well-defined occupational categories required as a basis for the system.		South Korea has a career information system called KNOW that provides diverse career information. It is also available online as KNOW On-Line. It includes information on occupational job competencies required for various job categories as well as other occupational information.	According to the UNESCO Institute for Lifelong Learning, Uganda lacks a systematic labour market intelligence system, and this is one of the contributing factors to its TVET system being unresponsive to the needs of industry or skills demand (Singh & Duvekot, 2013).	Within the UK, there are slightly different education and training systems (as evidenced by the multiple qualification frameworks) for England and each of the devolved administrations of Northern Ireland, Scotland, and Wales.	

Annexure B: Job Zone Descriptions

Job Zone One: Little or No Preparation Needed

Overall Experience	No previous work-related skill, knowledge, or experience is needed for these occupations. For example, a person can become a cashier even if he/she has never worked before.
Job Training	Employees in these occupations need anywhere from a few days to a few months of training. Usually, an experienced worker could show you how to do the job.
Job Zone Examples	These occupations involve following instructions and helping others. Examples include taxi drivers, amusement and recreation attendants, counter and rental clerks, cashiers, and waiters/waitresses.
SVP Range	(Below 4.0)
Education	These occupations may require a high school diploma or GED certificate. Some may require a formal training course to obtain a license.

Job Zone Two: Some Preparation Needed

Overall Experience	Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.
Job Training	Employees in these occupations need anywhere from a few months to one year of working with experienced employees.
Job Zone Examples	These occupations often involve using your knowledge and skills to help others. Examples include sheet metal workers, forest fire fighters, customer service representatives, pharmacy technicians, salespersons (retail), and tellers.
SVP Range	(4.0 to < 6.0)
Education	These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Job Zone Three: Medium Preparation Needed

Overall Experience	Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.
Job Training	Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.
Job Zone Examples	These occupations usually involve using communication and organizational skills to coordinate, supervise, manage, or train others to accomplish goals. Examples include funeral directors, electricians, forest and conservation technicians, legal secretaries, interviewers, and insurance sales agents.
SVP Range	(6.0 to < 7.0)
Education	Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Job Zone Four: Considerable Preparation Needed

Overall Experience	A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.
Job Training	Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.
Job Zone Examples	Many of these occupations involve coordinating, supervising, managing, or training others. Examples include accountants, human resource managers, computer programmers, teachers, chemists, and police detectives.
SVP Range	(7.0 to < 8.0)
Education	Most of these occupations require a four-year bachelor's degree, but some do not.

Job Zone Five: Extensive Preparation Needed

Overall Experience	Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.
Job Training	Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.
Job Zone Examples	These occupations often involve coordinating, training, supervising, or managing the activities of others to accomplish goals. Very advanced communication and organizational skills are required. Examples include librarians, lawyers, aerospace engineers, physicists, school psychologists, and surgeons.
SVP Range	(8.0 and above)
Education	A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

Notes

DPRU CONTACTS

Programme leader: Professor Haroon Bhorat – haroon.bhorat@uct.ac.za
Programme manager: Ms Janine Jantjies – janine.jantjies@uct.ac.za

DHET CONTACTS

Programme leader: Ms M. Khuluvhe – khuluvhe.m@dhet.gov.za
Project secretariat: Ms M. Ramasodi – ramasodi.m@dhet.gov.za