



Session 4: main concepts – occupations, skills and competences

Setting the scene

NQFs are policy instruments to classify, develop, articulate qualifications that speak to the world of work and the world of education and training.

Occupations, skills and competences.

Speaker: Eduarda Castel-Branco

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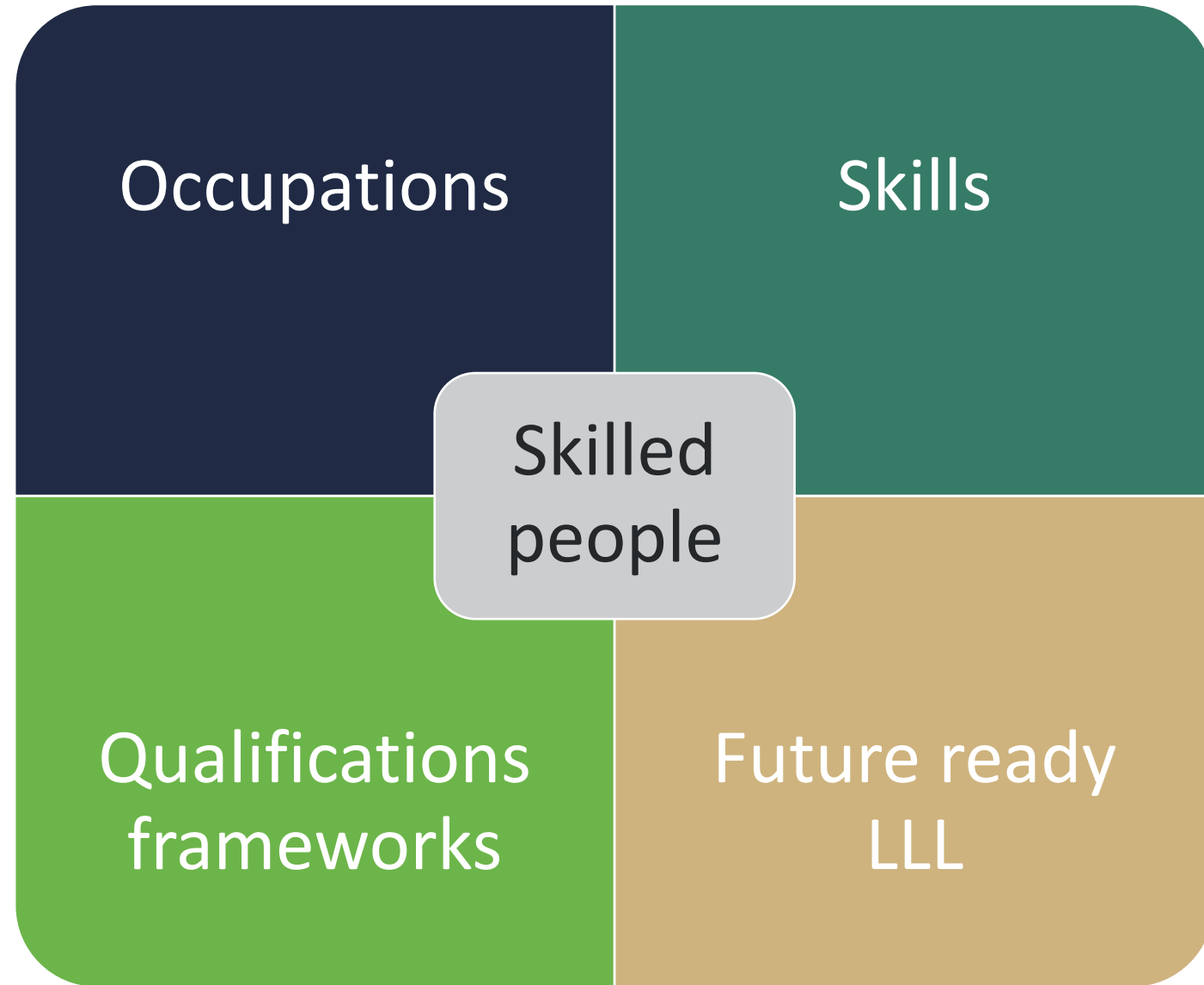


01

Introduction

“Eco-system Work-Learn”

- Effective utilization of skills in society
- Matching employment – skills – qualifications
- In the ongoing period of great transformation: more workers will need to adapt to change – new jobs, changed skill profile of jobs, automation and digitalization, greening
- Skills adjacency!
 - ✓ Where can workers go with current portfolio of skills?
 - ✓ What are the critical skills workers need to develop and adapt to change?
 - ✓ Career progression – link skills to changing occupational requirements.



02

Occupations

Types of skills:
occupational / job
specific; basic;
transversal...



Policy issues: skill
mismatch: skills gaps,
shortage; over- & under-
qualification;



Classifications (taxonomies) of occupations (and skills)

- ISCO-08 (ILO)
- ESCO (EU)
- O*Net (US)
- Others: at national level
 - Interrelations,
correspondence



ISCO 08:

Jobs &

Occupations

❖ Jobs

- A set of tasks or duties performed by a person (for an employer or in self-employment)

❖ Occupations

- The kind of work performed in a job
- A set of jobs whose main tasks and duties are characterized by a high degree of similarity.

Occupations – ISCO 08: 9 groups

1. Managers

2. Professionals

3. Technicians and
associate
professionals

4. Clerical support
workers

5. Service and sales
workers

6. Skilled
agricultural,
forestry and fishery
workers

7. Craft and related
trades workers

8. Plant and
machine operators
and assemblers

9. Elementary
occupations

Classifications, taxonomies

ESCO
(Europe)

O*Net
(United States)

Very brief – we will learn
more in Session 20

European Skills/Competences, Qualifications and Occupations

The ESCO classification identifies and categorises skills, competences, and occupations relevant for the EU labour market and education and training. It systematically shows the relationships between the different concepts.

Available in 28
languages (incl.
Arabic)

The screenshot shows the ESCO portal interface. At the top, there is the European Commission logo and a language selector set to 'English'. Below this is a navigation menu with options: Home, About ESCO, Classification, Use ESCO, News & Events, and Get in touch. A featured article banner reads 'ESCO testimonials: Australia's national research agency uses ESCO to upskill and reskill workers'. Below the banner is a search bar with the text 'Find in the ESCO portal' and a 'Find' button. A dropdown menu is open, listing search categories: ALL ESCO portal, Occupations, Skills & competences, News & events, and Publications. Three main categories are highlighted with icons: OCCUPATIONS (briefcase icon), SKILLS (lightbulb icon), and QUALIFICATIONS (award ribbon icon). At the bottom left, it says 'Session 4: main concepts, overview'.

- New ESCO portal launched (03/2022): <https://esco.ec.europa.eu/en/home>
- New version ESCO (V1.1) (02/2022): many novelties in skills taxonomy
- All Public Employment Services in the EU adopting ESCO
- Cooperation with other countries: Australia, Canada, Chile, USA
- Cooperation with O*Net and Canadian Skill and Knowledge glossary

European reference language to:

- ESCO works as a **dictionary**, describing, identifying and classifying professional occupations and skills relevant for the EU labour market and education and training.
- Those concepts and the relationships between them can be understood by **electronic systems**, which allows different online platforms to use ESCO for services like matching jobseekers to jobs on the basis of their skills, suggesting trainings to people who want to reskill or upskill etc.
- Communicate between labour market and education/training
- Reduce “noise” in the labour market
- Exchange information supply & demand – Labour market information systems
- Match CVs of candidates with job vacancies
- Cooperate across borders / languages

ESCO V1.1: What does it contain?

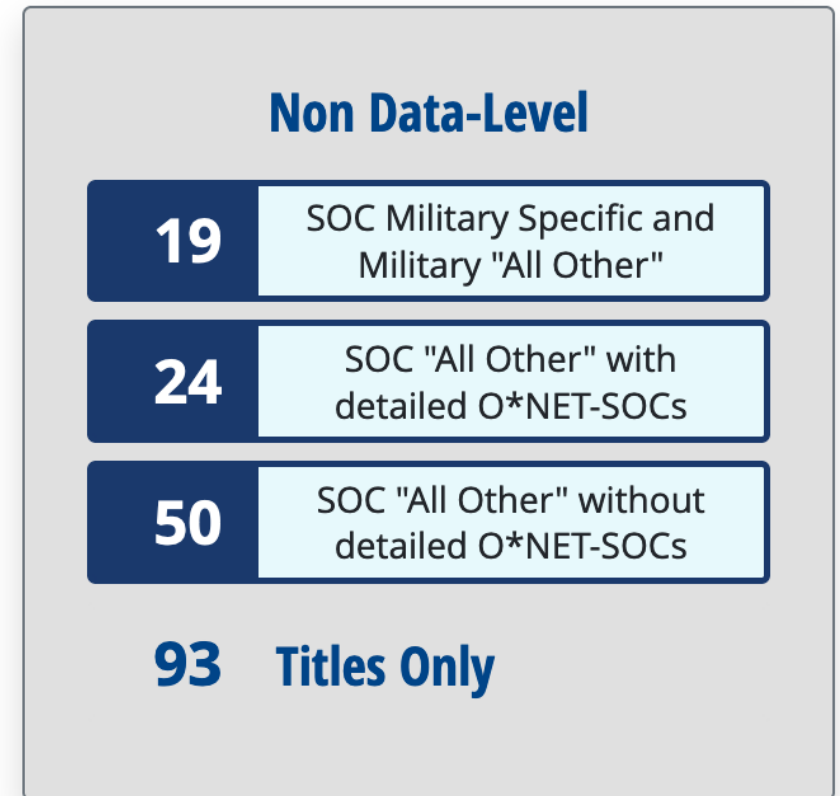
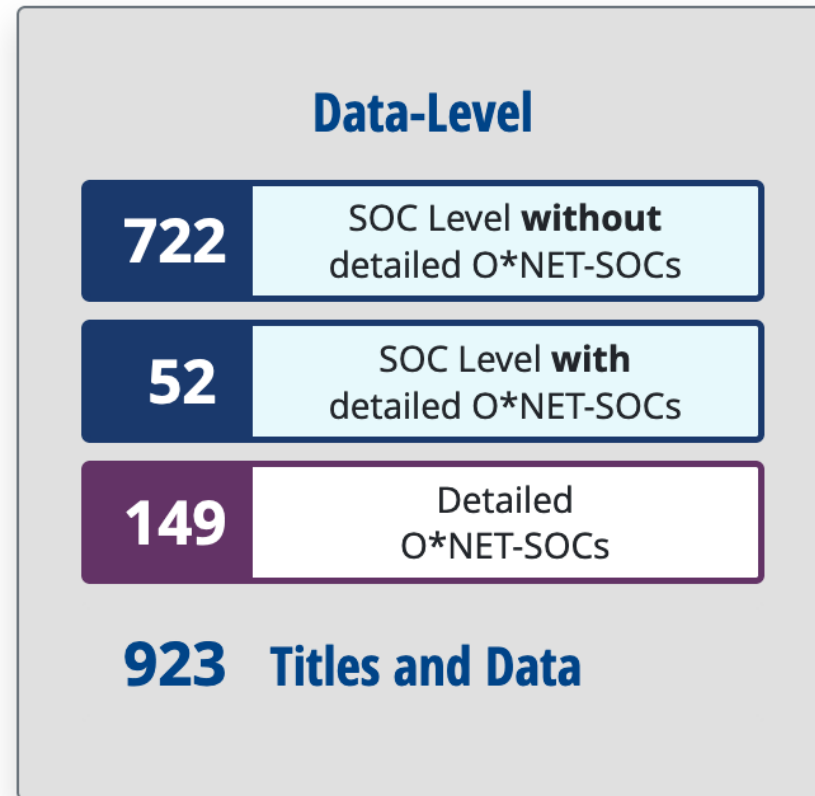
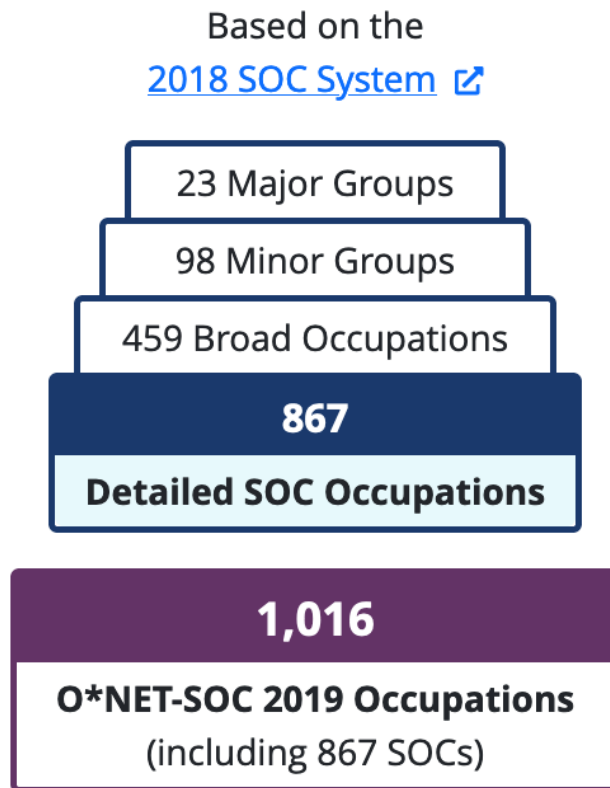


The latest version of the classification can be [downloaded](#) or retrieved through the [ESCO API](#).

- The O*NET Program is the country's **primary source of occupational information.**
- **Valid data** are essential to understanding the rapidly changing nature of work and how it impacts the workforce and U.S. economy.
- From this information, **applications are developed to facilitate the development and maintenance of a skilled workforce.**
- Central to the project is the **O*NET database**, containing hundreds of standardized and occupation-specific descriptors on almost 1,000 occupations covering the entire U.S. economy. The database, which is available to the public at no cost, is continually updated from input by a broad range of workers in each occupation.

Session 4: main concepts, overview

O*NET OnLine has detailed descriptions of the world of work for use by job seekers, workforce development and HR professionals, students, education, developers, researchers.



The new (2019) O*NET-SOC taxonomy includes 1,016 occupational titles, 923 of which represent O*NET data-level occupations.

O*NET



1. Find occupations

🔍 **Occupation Keyword Search** ^

Examples: 25-1011.00, dental assistant

Search O*NET-SOC occupations ➔

☰ **Find Occupations** ^

- [Bright Outlook](#)
- [Career Cluster](#)
- [Hot Technology](#)
- [Industry](#)
- [Job Family](#)
- [Job Zone](#)
- [STEM](#)
- [All Occupations](#)

🔧 **Advanced Searches** ^

- [Job Duties](#)
- [Related Activities](#)
- [Soft Skills](#)
- [Technology Skills](#)

📖 **Browse by O*NET Data** ^

- [Abilities](#)
- [Interests](#)
- [Knowledge](#)
- [Skills \(Basic\)](#)
- [Skills \(Cross-Functional\)](#)
- [Work Activities](#)
- [Work Context](#)
- [Work Styles](#)
- [Work Values](#)

<https://www.onetonline.org/>

Occupational listing

O*NET-SOC and SOC Structure

2. Occupational listings

Occupational Listings

O*NET-SOC and SOC structure [← See more: Occupation Taxonomy](#)

596 occupations [Save table](#)

Major Group	Minor Group	Broad Occupation	Detailed Occupation	Detailed O*NET-SOC	SOC or O*NET-SOC 2019 Title
11-0000					Management Occupations
	11-1000				Top Executives
		11-1010			Chief Executives
			11-1011		Chief Executives
				11-1011.03	Chief Sustainability Officers
		11-1020			General and Operations Managers
			11-1021		General and Operations Managers
		11-1030			Legislators
			11-1031		Legislators
	11-2000				Advertising, Marketing, Promotions, Public Relations, and Sales Managers
		11-2010			Advertising and Promotions Managers
			11-2011		Advertising and Promotions Managers
		11-2020			Marketing and Sales Managers
			11-2021		Marketing Managers
			11-2022		Sales Managers
		11-2030			Public Relations and Fundraising Managers
			11-2032		Public Relations Managers
			11-2033		Fundraising Managers
	11-3000				Operations Specialties Managers
		11-3010			Administrative Services and Facilities Managers

2. O*Net occupations

Occupational Listings

O*NET-SOC 2019 occupations

[← See more: Occupation Taxonomy](#)

1016 occupations

Save table ▾

Hide descriptions

O*NET-SOC 2019 Code	O*NET-SOC 2019 Title
11-1011.00	Chief Executives Determine and formulate policies and provide overall direction of companies or private and public sector organizations within guidelines set up by a board of directors or similar governing body. Plan, direct, or coordinate operational activities at the highest level of management with the help of subordinate executives and staff managers.
11-1011.03	Chief Sustainability Officers Communicate and coordinate with management, shareholders, customers, and employees to address sustainability issues. Enact or oversee a corporate sustainability strategy.
11-1021.00	General and Operations Managers Plan, direct, or coordinate the operations of public or private sector organizations, overseeing multiple departments or locations. Duties and responsibilities include formulating policies, managing daily operations, and planning the use of materials and human resources, but are too diverse and general in nature to be classified in any one functional area of management or administration, such as personnel, purchasing, or administrative services. Usually manage through subordinate supervisors. Excludes First-Line Supervisors.
11-1031.00	Legislators Develop, introduce, or enact laws and statutes at the local, tribal, state, or federal level. Includes only workers in elected positions.
11-2011.00	Advertising and Promotions Managers Plan, direct, or coordinate advertising policies and programs or produce collateral materials, such as posters, contests, coupons, or giveaways, to create extra interest in the purchase of a product or service for a department, an entire organization, or on an account basis.
11-2021.00	Marketing Managers Plan, direct, or coordinate marketing policies and programs, such as determining the demand for products and services offered by a firm and its competitors, and identify potential customers. Develop pricing strategies with the goal of maximizing the firm's profits or share of the market while ensuring the firm's customers are satisfied. Oversee product development or monitor trends that indicate the need for new products and services.
11-2022.00	Sales Managers Plan, direct, or coordinate the actual distribution or movement of a product or service to the customer. Coordinate sales distribution by establishing sales territories, quotas, and goals and establish training programs for sales representatives. Analyze sales statistics gathered by staff to determine sales potential and inventory requirements and monitor the preferences of customers.

O*NET: find all occupations

Occupation keyword search

Help Find Occupations Advanced Searches O*NET Data Crosswalks Share Sites

See All Occupations

Save Table: [XLSX](#) [CSV](#)

Find in list

1,016 occupations shown Show Job Zones: **All** 1 2 3 4 5 Show occupations: **All** Data-level

Job Zone	Code	Occupation
4	13-2011.00	Accountants and Auditors
2	27-2011.00	Actors
4	15-2011.00	Actuaries
5	29-1291.00	Acupuncturists
3	29-1141.01	Acute Care Nurses
5	25-2059.01	Adapted Physical Education Specialists
2	51-9191.00	Adhesive Bonding Machine Operators and Tenders
5	23-1021.00	Administrative Law Judges, Adjudicators, and Hearing Officers
3	11-3012.00	Administrative Services Managers
4	25-3011.00	Adult Basic Education, Adult Secondary Education, and English as a Second Language Instructors
5	29-1141.02	Advanced Practice Psychiatric Nurses
4	11-2011.00	Advertising and Promotions Managers
4	41-3011.00	Advertising Sales Agents
3	17-3021.00	Aerospace Engineering and Operations Technologists and Technicians
4	17-2011.00	Aerospace Engineers
4	13-1011.00	Agents and Business Managers of Artists, Performers, and Athletes
4	17-2021.00	Agricultural Engineers
1	45-2091.00	Agricultural Equipment Operators
2	45-2011.00	Agricultural Inspectors

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<https://www.onetonline.org/find/all>

Occupation keyword search

Help Find Occupations Advanced Searches O*NET Data Crosswalks Share Sites

Accountants and Auditors

13-2011.00 [Bright Outlook](#) [Updated 2022](#)

Examine, analyze, and interpret accounting records to prepare financial statements, give advice, or audit and evaluate statements prepared by others. Install or advise on systems of recording costs or other financial and budgetary data.

Sample of reported job titles: Accountant, Accounting Officer, Audit Partner, Auditor, Certified Public Accountant (CPA), Cost Accountant, Financial Auditor, General Accountant, Internal Auditor, Revenue Tax Specialist

Summary **Details** Custom [Easy Read](#) [Veterans](#) [Español](#)

Contents

Occupation-Specific Information

Tasks

5 of 30 displayed

- Prepare detailed reports on audit findings.
- Report to management about asset utilization and audit results, and recommend changes in operations and financial activities.
- Collect and analyze data to detect deficient controls, duplicated effort, extravagance, fraud, or non-compliance with laws, regulations, and management policies.
- Inspect account books and accounting systems for efficiency, effectiveness, and use of accepted accounting procedures to record transactions.
- Supervise auditing of establishments, and determine scope of investigation required.

Technology Skills

5 of 37 displayed

- Accounting software** — Fund accounting software; Intuit QuickBooks; Sage 50 Accounting; Summit Software Summit Biofuels Accounting
- Enterprise resource planning ERP software** — Microsoft Dynamics GP; NetSuite ERP; Oracle Hyperion; Oracle JD Edwards EnterpriseOne
- Financial analysis software** — Delphi Technology; Oracle E-Business Suite Financials; TopCAATs; Tropics workers' compensation software
- Tax preparation software** — ATX Total Tax Office; CCH ProSystem fx TAX; NewPortWave Year End Solutions; Thomson GoSystem Tax
- Word processing software** — Google Docs; Microsoft OneNote; Microsoft Word

* Hot Technologies are requirements frequently included in employer job postings.

Occupational Requirements

Work Activities

5 of 28 displayed

- Getting Information** — Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates** — Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Working with Computers** — Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Evaluating Information to Determine Compliance with Standards** — Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Documenting/Recording Information** — Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form.

Detailed Work Activities

5 of 26 displayed

- Prepare financial documents, reports, or budgets.
- Advise others on financial matters.
- Report information to managers or other personnel.
- Advise others on business or operational matters.
- Examine financial records.

Work Context

5 of 20 displayed

- Electronic Mail** — How often do you use electronic mail in this job?
- Telephone** — How often do you have telephone conversations in this job?
- Face-to-Face Discussions** — How often do you have to have face-to-face discussions with individuals or teams in this job?
- Importance of Being Exact or Accurate** — How important is being very exact or highly accurate in performing this job?
- Indoors, Environmentally Controlled** — How often does this job require working indoors in environmentally controlled conditions?

Experience Requirements

Job Zone

<https://www.onetonline.org/link/summary/13-2011.00>

03

Skills and Competences frameworks

- **Skills:** A bundle of knowledge, attributes and capacities that can be learnt and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.

[OECD, http://www.oecd.org/education/47769000.pdf](http://www.oecd.org/education/47769000.pdf)

- **'Skills'** means the ability to apply knowledge and use know-how to complete tasks and solve problems. In the context of the EQF, skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

EQF Recommendation 2017

- **Competence** means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development.

EQF Recommendation 2017. [https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32017H0615\(01\)&from=EN#d1e32-20-1](https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32017H0615(01)&from=EN#d1e32-20-1)

Some types of skills

- Basic skills
- Career management skills
- Emerging skills
- Employability skills
- Entrepreneurial skills
- Entry-level skills
- Essential or foundation skills
- Generic skills
- Green skills
- Hard skills
- Hybrid skills
- ICT skills
- Job-relevant skills
- Life skills
- Livelihood skills
- Portable skill
- Soft skills
- Specialised skills
- Transversal skills

Uses

- Low-skilled person
- Multi-skilling
- Occupational skills profile
- Overskilling
- Skills eco-system
- Skills shortage
- Skills analysis
- Skills anticipation
- Skills development
- Skills gap
- Skills matching
- Skills passport
- Skills utilisation rate
- Underskilling
- Upskilling
- Reskilling

Green skills

- Abilities needed to live in, develop and support a society which aims to reduce the negative impact of human activity on the environment.
- Technical skills, knowledge, values and attitudes needed in the workforce to develop and support sustainable social, economic and environmental outcomes in business, industry and the community.

Transversal skills

- Skills that are typically considered as not specifically related to a particular job, task, academic discipline or area of knowledge and that can be used in a wide variety of situations and work settings (for example, organizational skills).

Multi-skilling

- Training of workers in a number of skills which enables them to perform a variety of tasks or functions across traditional boundaries. Multiskilling may be horizontal (broad skilling), vertical (upskilling) or diagonal (contributory skilling).

UNEVOC:

<https://unevoc.unesco.org/home/TVE+Tikipedia+Glossary/lang=en/id=422>

Hybrid skills

- A mixture of the skills and knowledge, possibly from different disciplines, generally required in sectors applying high technology.

Transversal skills and competences

“Towards a structured and consistent terminology on transversal skills and competences”, Cedefop, 2021

In a world facing rapid technological and social change, transversality - and implied transferability - is seen as increasingly important.

“Transversal skills and competences (TSCs) are learned and proven abilities which are commonly seen as necessary or valuable for effective action in virtually any kind of work, learning or life activity. They are “transversal” because they are not exclusively related to any particular context (job, occupation, academic discipline, civic or community engagement, occupational sector, group of occupational sectors, etc.).”

TSC Model:

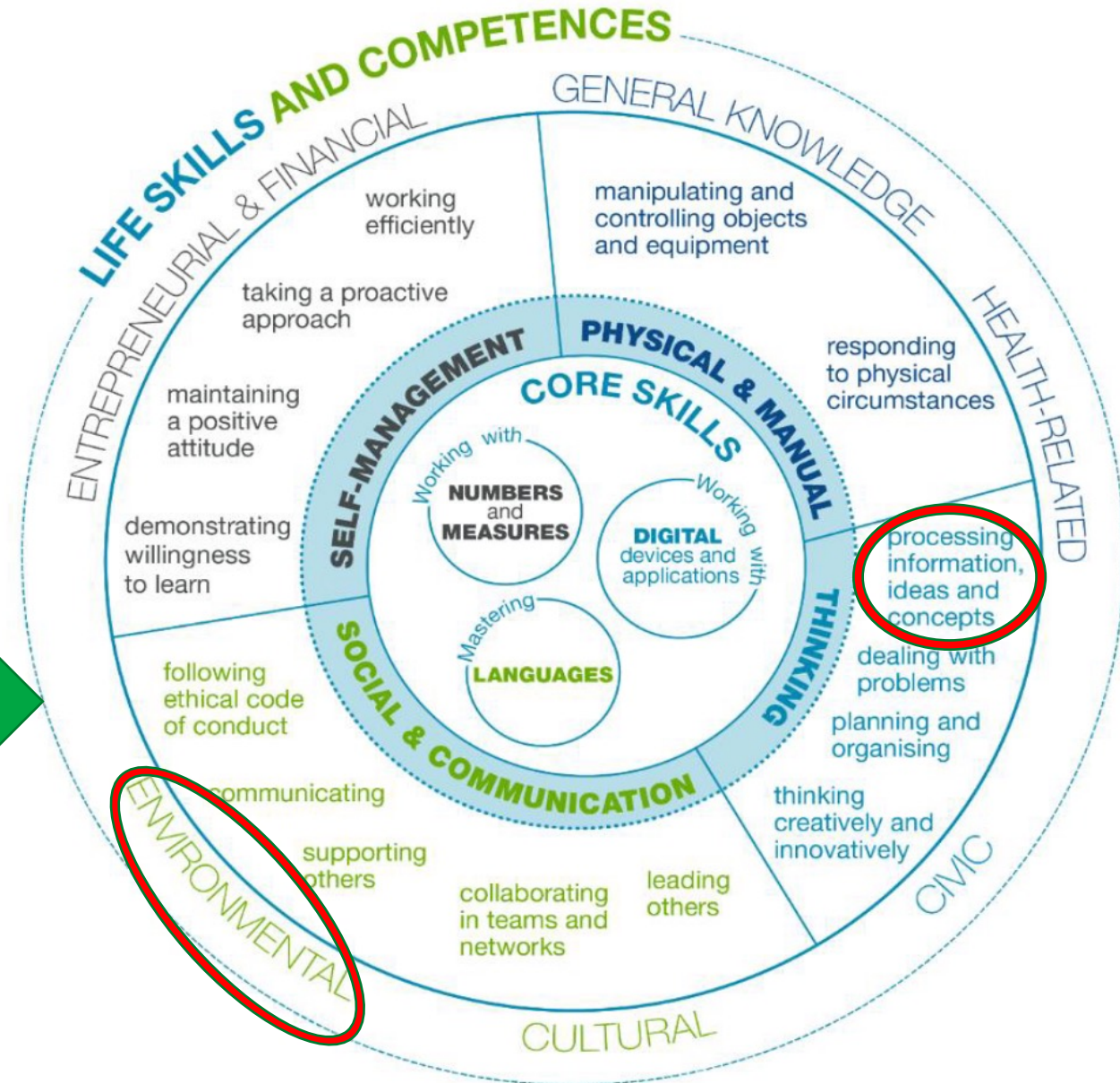
- **6 main TSC Categories**

- Core S&C, thinking S&C, self-management S&C, physical and manual S&C, social and communication S&C, life S&C

- Each Category is unpacked in **Clusters** and these – in Concepts

- Relationship between Concepts

TRANSVERSAL SKILLS AND COMPETENCES (TSC MODEL)



TSC Model: Category “Life S&C”

6 Clusters:

1. ➤ Applying entrepreneurial and financial skills and competences
2. ➤ Applying health-related skills and competences
3. ➤ Applying cultural skills and competences
4. ➤ Applying civic skills and competences
5. ➤ Applying general knowledge
6. ➤ Applying environmental skills and competence

Each Cluster: Concepts

Each Cluster: Concepts

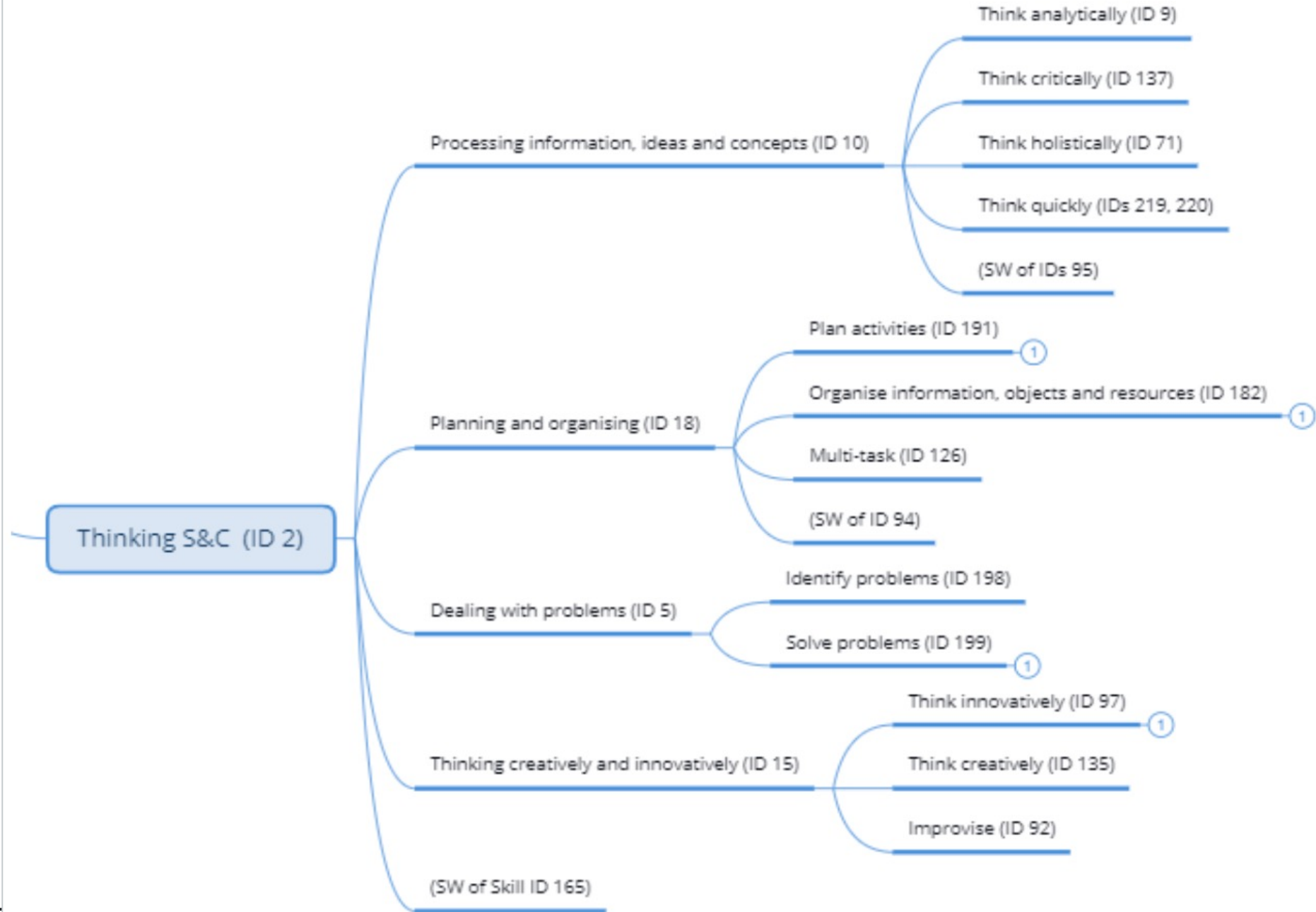
Each Cluster: Concepts

Each Cluster: Concepts

Each Cluster: Concepts

Each Cluster: Concepts

TSC Model: Category “Thinking skills”



Regional / continental Competence frameworks

European Union

- Key competences for Lifelong Learning
- Entrepreneurship competence framework
- **Digital competence framework 2.0 (DigComp 2.0)**
- **GreenComp: European Sustainability Competence Framework (2022)**
- **LifeComp:** The European Framework for Personal, Social and Learning to Learn Key Competence. Joint Research Center (JRC) (2020).
https://publications.jrc.ec.europa.eu/repository/bitstream/JRC120911/lcreport_290620-online.pdf

UNESCO, Asia-Pacific

- ERI-Net's Framework on transversal competencies in education policy and practices (2015).

1. Information and data literacy

1.1 Browsing, searching and filtering data, information and digital content

To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.

1.2 Evaluating data, information and digital content

To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.

1.3 Managing data, information and digital content

To organise, store and retrieve data, information and content in digital environments. To organise and process them in a structured environment.

2. Communication and collaboration

2.1 Interacting through digital technologies

To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.

2.2 Sharing through digital technologies

To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.

2.3 Engaging in citizenship through digital technologies

To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.

2.4 Collaborating through digital technologies

To use digital tools and technologies for collaborative processes, and for co-construction and co-creation of resources and knowledge.

2.5 Netiquette

To be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.

2.6 Managing digital identity

To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.

3. Digital content creation

3.1 Developing digital content

To create and edit digital content in different formats, to express oneself through digital means.

3.2 Integrating and re-elaborating digital content

To modify, refine, improve and integrate information and content into an existing body of knowledge to create new, original and relevant content and knowledge.

3.3 Copyright and licences

To understand how copyright and licences apply to data, information and digital content.

3.4 Programming

To plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.

Digcomp 2.0

https://joint-research-centre.ec.europa.eu/digcomp/digital-competence-framework-20_en

4. Safety

4.1 Protecting devices

To protect devices and digital content, and to understand risks and threats in digital environments. To know about safety and security measures and to have due regard to reliability and privacy.

4.2 Protecting personal data and privacy

To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damages. To understand that digital services use a “Privacy policy” to inform how personal data is used.

4.3 Protecting health and well-being

To be able to avoid health-risks and threats to physical and psychological well-being while using digital technologies. To be able to protect oneself and others from possible dangers in digital environments (e.g. cyber bullying). To be aware of digital technologies for social well-being and social inclusion.

4.4 Protecting the environment

To be aware of the environmental impact of digital technologies and their use.

5. Problem solving

5.1 Solving technical problems

To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).

5.2 Identifying needs and technological responses

To assess needs and to identify, evaluate, select and use digital tools and possible technological responses to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility).

5.3 Creatively using digital technologies

To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.

5.4 Identifying digital competence gaps

To understand where one’s own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.



Visual representation of *GreenComp*.

GreenComp consists of 12 competences (in **bold**) organised into the four areas (in *italics*) below:

- *Embodying sustainability values*, including the competences
 - **valuing sustainability**
 - **supporting fairness**
 - **promoting nature**
- *Embracing complexity in sustainability*, including the competences
 - **systems thinking**
 - **critical thinking**
 - **problem framing**
- *Envisioning sustainable futures*, including the competences
 - **futures literacy**
 - **adaptability**
 - **exploratory thinking**
- *Acting for sustainability*, including the competences
 - **political agency**
 - **collective action**
 - **individual initiative**

04

Qualifications

Qualification

A qualification: means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards.

Source: EQF Recommendation.

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



Information on
demand in labour
market

Professional
standards

Qualifications
standards

Develop
Training
Programmes

Delivery
training

Assessment
and
certification

M&E -
performance

Some key concepts – qualifications framework domain

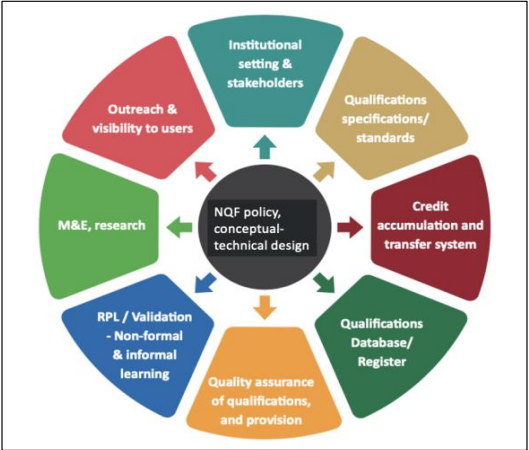


A national qualifications framework (NQF) is ‘A policy and instrument for the development and classification of qualifications according to a set of criteria for specified levels of learning achieved, which aims at integrating and coordinating national qualifications subsystems and improve the transparency,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

A qualification: means a formal outcome of an assessment and validation process which is obtained when a competent authority determines that an individual has achieved learning outcomes to given standards. *Source: EQF Recommendation.*

Learning outcomes: Statements of what a learner knows, understands and is able to do on completion of a learning process, which are defined in terms of knowledge, skills and competence. Set of knowledge, skills and/or competences an individual has acquired and/or is able to demonstrate after completion of a learning process, either formal, non-formal and informal.
Source: Cedefop

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



A regional qualifications framework (RQF) is a broad structure of levels of learning outcomes that is agreed by countries in a geographical region. A means of enabling one national framework of qualifications **to relate** to another and, subsequently, for a qualification in one country to be compared to a qualification from another country. *Source: ASEAN QRF: ASEAN Qualifications Reference Framework, A Practical Guide and All you Need to Know.*

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



African Continental
Qualifications Framework



**And now we can move
to Session 5 on
Qualifications
Frameworks...**

Thank you

ACQF development project