United Nations
Educational, Scientific and
Cultural Organization

3rd policy learning forum on defining, writing and using learning outcomes

Thessaloniki, 21-22 June 2018

22 June 2018

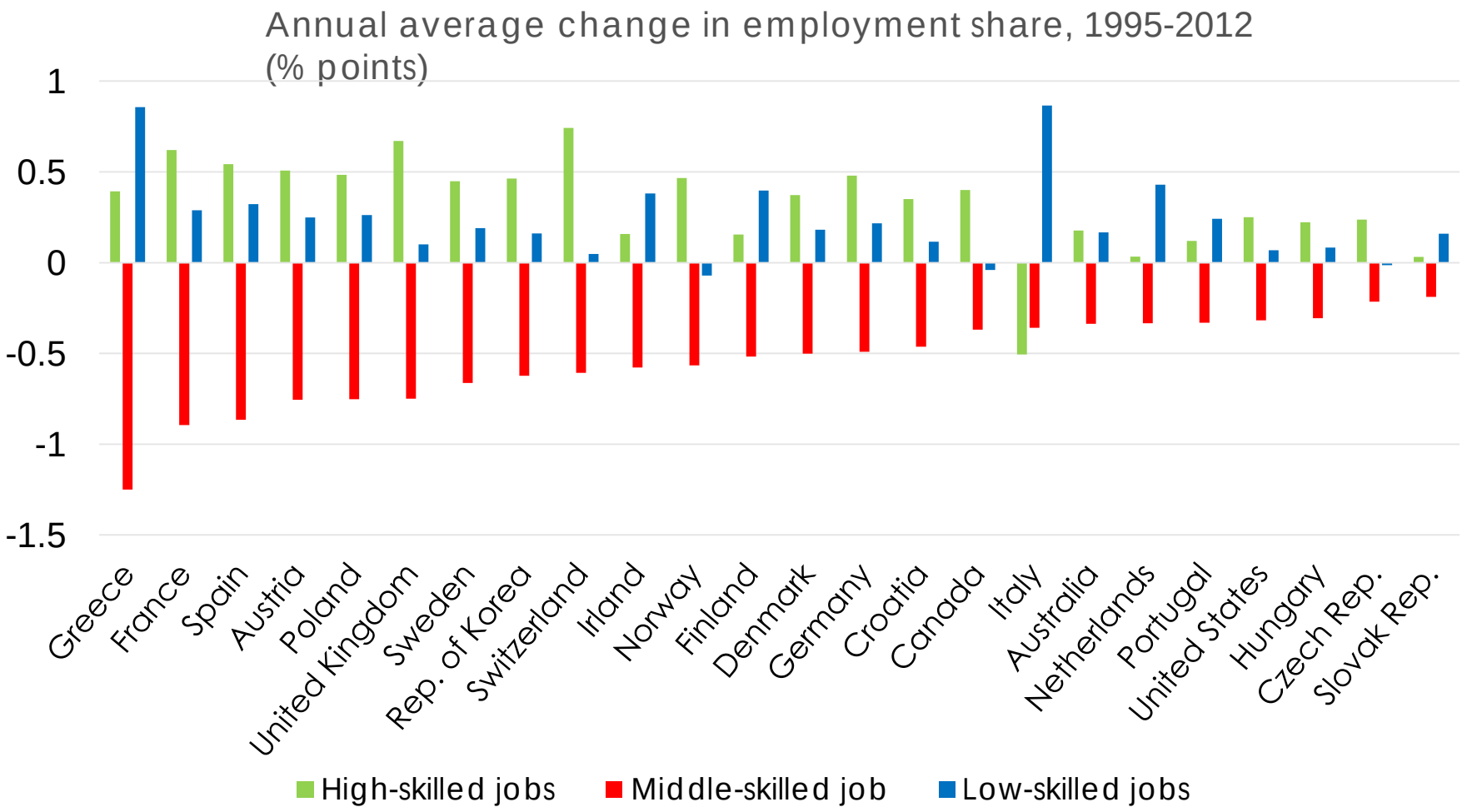
Learning outcomes and comparability of qualifications; methodological issues/challenges

Borhene Chakroun
Section Chief, Youth, Literacy and Skills Development
Division for Policies and Lifelong Learning Systems
Education Sector, UNESCO

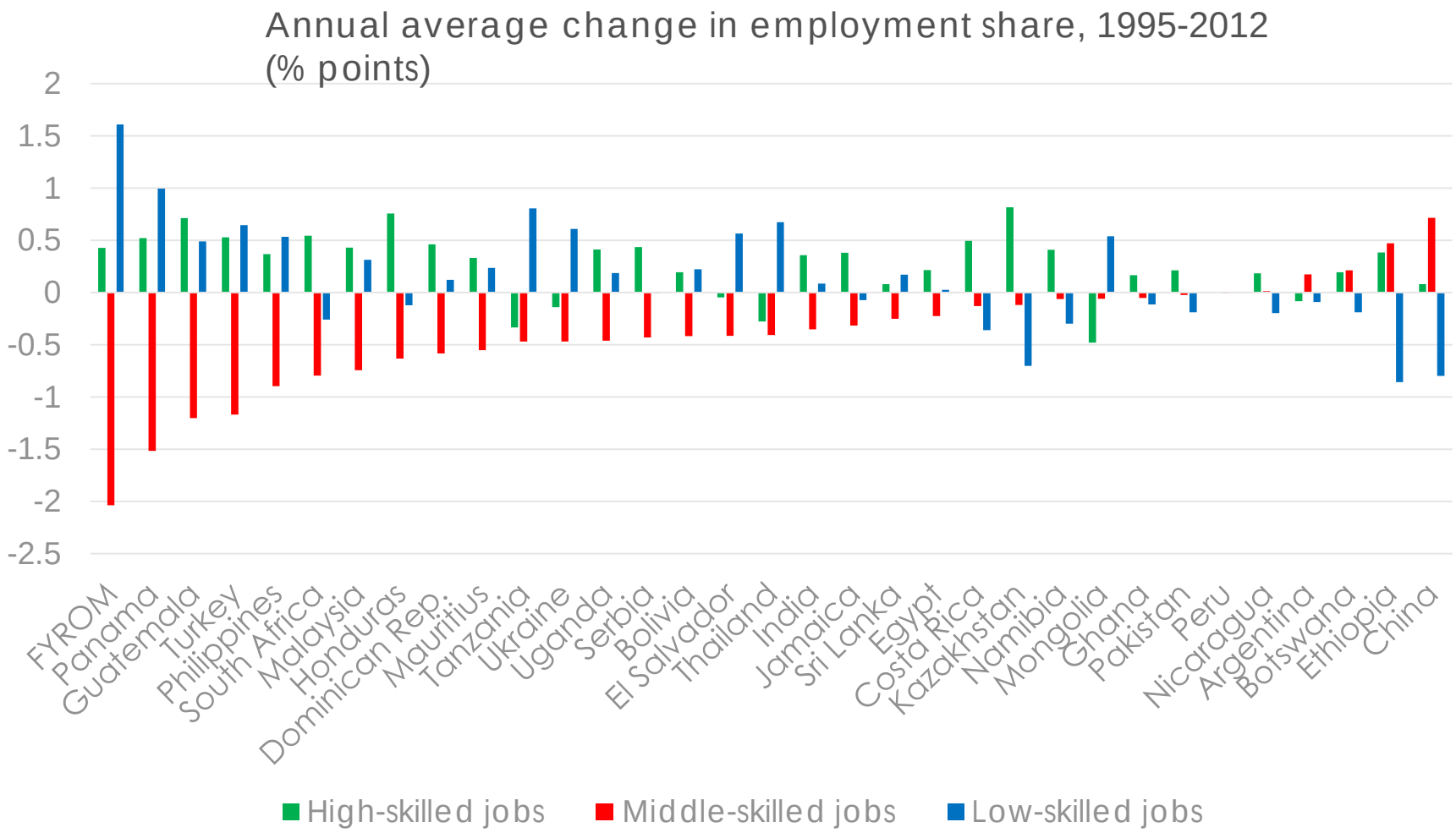
Education 2030

Megatrends affecting Qualifications Comparison

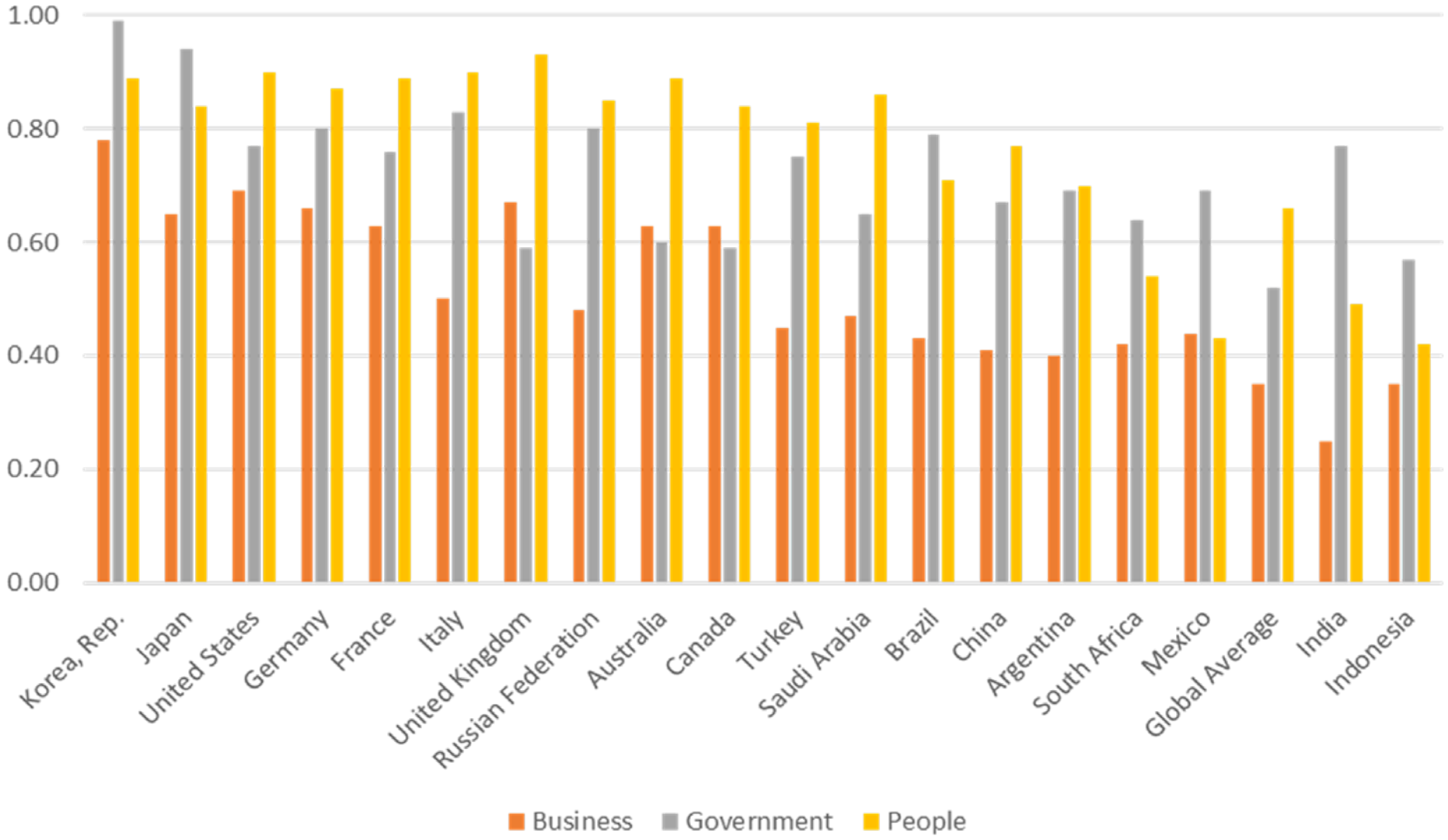
The labour market is becoming polarized in high income countries…



… and in low and middle income countries

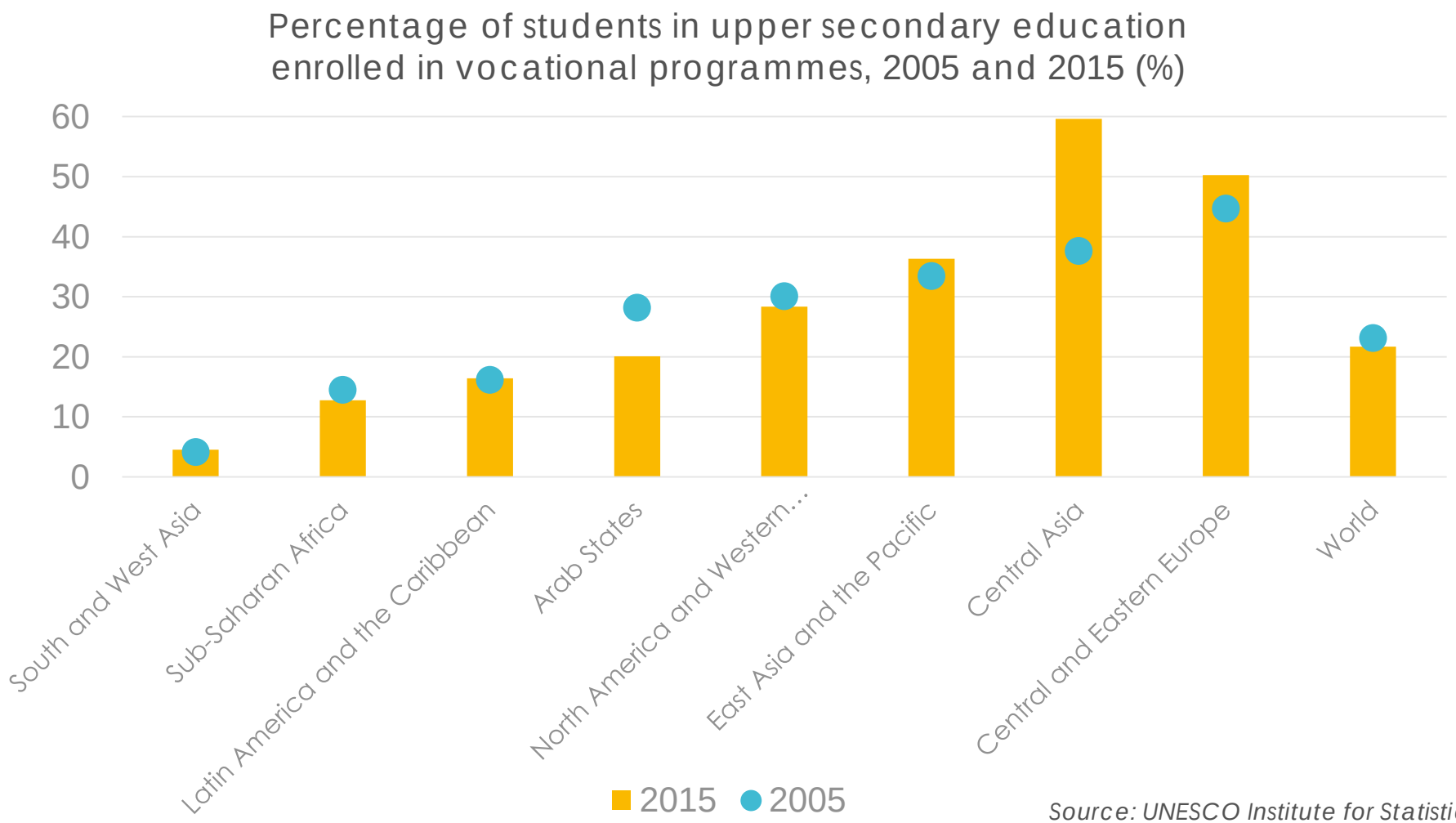


DIGITAL ADOPTION INDEX BY FACTORS 2016



Source: World Bank, 2017

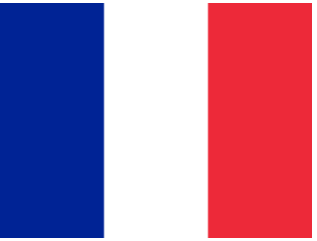
The share of students enrolled in TVET has remained low for a decade in most regions



Source: UNESCO Institute for Statistics.

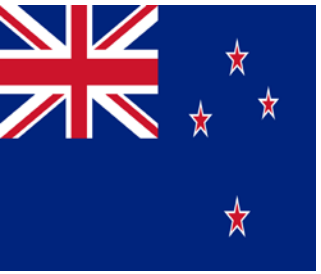
Changing Scope of Qualifications

VET Reform 2018: The number of qualifications will decrease from the current 360 to 150. Students would have more freedom of choice within a specific qualification than nowadays. Vocational qualifications would still provide eligibility for higher education.



Starting 2019 adopt a Cluster of occupation architecture (Famille de métiers). 15 Cluster will be defined in partnership with social partners

T-Level Reform will reduce the number of qualifications. 13,000 technical qualifications to be streamlined to just 15 paths.



From 4,610 qualifications (levels 1–6) and it is estimated that this number will be reduced to 1200 as a result of TRoQ. The reviewed qualifications have been replaced by new qualifications and are being progressively discontinued.

Macro Vs Micro-credentials and Stackability

NZQA
NEW ZEALAND QUALIFICATIONS AUTHORITY
MANA TOHU MĀTAURANGA O AOTEAROA
QUALIFY FOR THE FUTURE WORLD
KIA NOHO TAKATŪ KI TŌ ĀMUA AO!

Micro-credentials in New Zealand's education and training system: a consultation paper

Stackable Credentials Tool Kit

Prepared by

Center for Occupational Research and Development
in partnership with
Social Policy Research Associates

Prepared for

Community College Career & Technical Education (CTE) Stackable Certificates Initiative
U.S. Department of Education
Office of Career, Technical, and Adult Education

April 2018

Australian Government
Department of Education and Training

Reviews and Consultations

Home

Australian Qualifications Framework Review

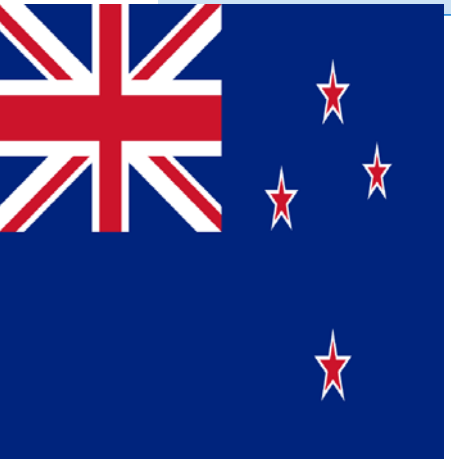

21st-Century Skills
Foundational Literacies
How students apply core skills to everyday tasks
1. Literacy
2. Numeracy
3. Scientific literacy
4. ICT literacy
5. Financial literacy
6. Cultural and civic literacy
Competencies
How students approach complex challenges
7. Critical thinking/ problem-solving
8. Creativity
9. Communication
10. Collaboration
Character Qualities
How students approach their changing environment
11. Curiosity
12. Initiative
13. Persistence/ grit
14. Adaptability
15. Leadership
16. Social and cultural awareness
Lifelong Learning


DigComp
Digital Competence Framework for citizens


Global Citizenship Education

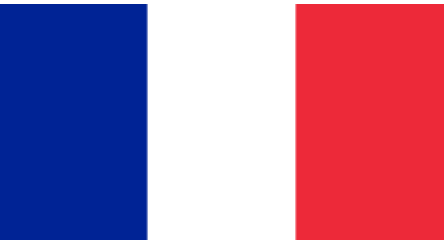

TASK PERFORMANCE
EMOTIONAL REGULATION
COMPOUND SKILLS
THE 'BIG FIVE' DOMAINS
COLLABORATION
ENGAGING WITH OTHERS
OPEN-MINDEDNESS

No standardized nomenclature



The New Zealand Standard Classification of Education (NZSCED). The classification system consists of three levels of detail (broad, narrow and detailed fields) defining each subject or field of study.

A qualification in Information Technology specialising in Computer Science and more specifically in Data Structures :
Example of broad field: Information Technology 02
Example of narrow field within the broad field: Computer Science: 0201
Example of detailed field within the narrow field: Data Structures 020111
The NZSCED code for this qualification will be **020111**



Nomenclature of qualifications aligned with Training Provision nomenclature adopted by the information and statistics councils.
Expert in digital engineering:
3 : Technico-Professional in services".
32 cluster: Communication and information"
326: computer, information processing and dissemination network
326m: computer, information processing

Nomenclature generated by SAQA Information System

International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4

ISCO
International Standard Classification of Occupations

ESCO

BROWSE OCCUPATIONS

BROWSE KNOWLEDGE, SKILLS AND COMPETENCES

BROWSE QUALIFICATIONS

International Standard Classification of Education
ISCED 2011

UNESCO
United Nations Educational, Scientific and Cultural Organization

UNESCO INSTITUTE for STATISTICS

Key Initiatives

Cedefop (2015-2017): The role of learning outcomes in supporting dialogue between education and training and the labour market

Cedefop, ETF and UNESCO (2016): Global study

- to better understand how vocational qualifications are being defined using learning outcomes
- to develop a methodology for the comparison of and better understanding of vocational qualifications (in terms of content, scope and intentions)
- To identify common categories for qualification structure

Qualifications covered:

Bricklayer/Mason; Healthcare assistant; Hotel assistant/receptionist; IT service technician

Countries covered

Cedefop – 10 EU countries (34 qualifications)

Austria, Bulgaria, Denmark, Finland, France,
Ireland, Lithuania, the Netherlands, Spain, UK-England

ETF – 3 countries (8 qualifications)

Albania, the Former Yugoslav Republic of Macedonia,
Serbia

UNESCO – 13 countries (38 qualifications)

ASEAN (Philippines, Korea), Pacific (Western Samoa, New Zealand), Gulf (United Arab Emirates), SADC (South Africa, Zambia, Namibia, Botswana), LAC and CARICOM (Barbados, Costa Rica, Mauritius), Southern Mediterranean (Tunisia)

Comparing Qualifications- key determinants

- Level of Qualifications
- Purpose
- Link to labour market

Comparative analysis of qualifications' structure: LEVELLING

Classification		EQF level indication (estimate)					ISCED 2011 level indication				
Type		2	3	4	5	n/a	2	3	4	5	n/a
Bricklayer/mason	20	2	6	7	0	5	3	6	5	0	6
Healthcare assistant	17	1	8	5	0	3	1	10	2	0	4
Hotel assistant/receptionist	23	1	5	8	3	6	1	8	5	1	8
ICT service technician	20	3	0	12	2	3	1	8	3	2	6
Grand Total	**80**	**7**	**19**	**32**	**5**	**17**	**6**	**32**	**15**	**3**	**24**

Source: J.Bjornavold & B.Chakroun, 2017

Comparative analysis of qualifications' structure: PURPOSE OF QUALIFICATION

Type	No direct access to a next level of education and training	Access to a next level of education and training (but not to HE).	Access to a next level of education and training and to HE	Access to HE	Other
Bricklayer/mason	2 (ZM, KR)	11 (AT, BG, UK-EN, FR, NL, ES, BB, NZ, TN, MU, AL)	3 (FI, ZA, PH)	2 (DK, LT)	2 (CR, CL)
Healthcare assistant	2 (BG, LT)	7 (AT, DK, NL, ES, BB, ZA, MU)	6 (NZ, KR, PH, UK-EN, FI, IE)	-	2 (CR, FR)
Hotel assistant/ receptionist	1 (ZM)	9 (AT, DK, NL, BB, NZ, WS, TN, KR; MU)	9 (BG, UK-EN, FI, FR, IE, ZA, PH, NA, MK)	2 (LT, ES)	2 (CR, CL)
ICT service technician	-	9 (AT, DK, NL, BB, NZ, ZA, UAE, MU, AL)	7 (BG, FI, FR, IE, ZM, KR, PH)	3 (UK-EN, LT, ES)	1 (CR)
Grand total	5	36	25	7	7

Source: J.Bjornavold & B.Chakroun, 2017

Comparative analysis of qualifications' structure: LINK TO LABOUR MARKET

	The qualification is required to practice a certain profession (licensing/accreditation)	In order to practice the related profession, in addition to the qualification further requirements need to be fulfilled (certification/registration).	The qualification is desired/recommended but not a formal requirement.
Bricklayer/mason	1 (DK)	3 (NL, ZA, TN)	16 (BB, NZ, CR, CL, MU, PH, KR, ZM, AT, BG, UK-EN, FI, FR, LT, ES, AL)
Healthcare assistant	7 (AT, BG, DK, FI, LT, ES, KR)	1 (ZA)	9 (UK-EN, FR, IE, NL BB, NZ, CR, MU, PH)
Hotel assistant/ receptionist	2 (DK, LT)	1 (TN)	20 (BB, NZ, ZA, WS, CR, ZM, CL, MU, NA, PH, KR AT, BG, UK-EN, FI, FR, IE, NL, ES, MK)
ICT service technician	2 (UAE, LT)	1 (KR)	17 (BB, NZ, ZA, CR, ZM, MU, PH, AT, BG, DK, UK-EN, FI, FR, IE, NL, ES, AL)
Grand total	**12**	**6**	**62**

Source: J.Bjornavold & B.Chakroun, 2017

Comparing content of qualifications

- Intended learning outcomes
- Job-specific Skills
- Transversal skills

Comparative analysis of learning outcomes intentions

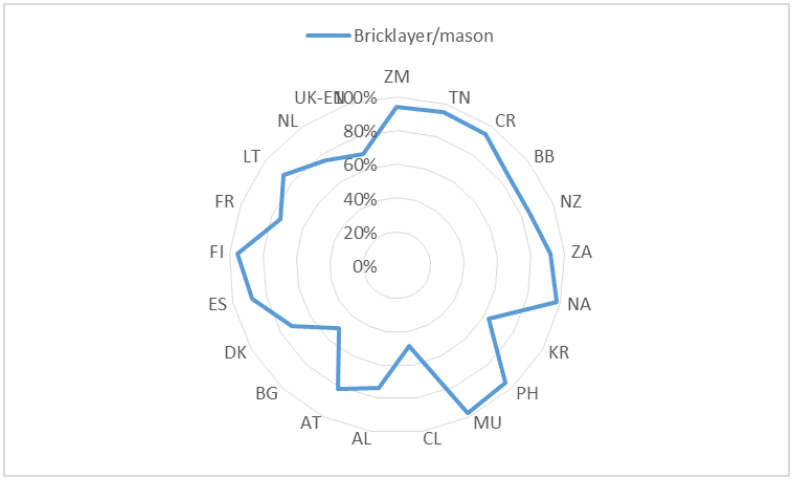
An analysis of the documents underpinning qualifications in the 26 countries – standards, curricula and programme descriptions

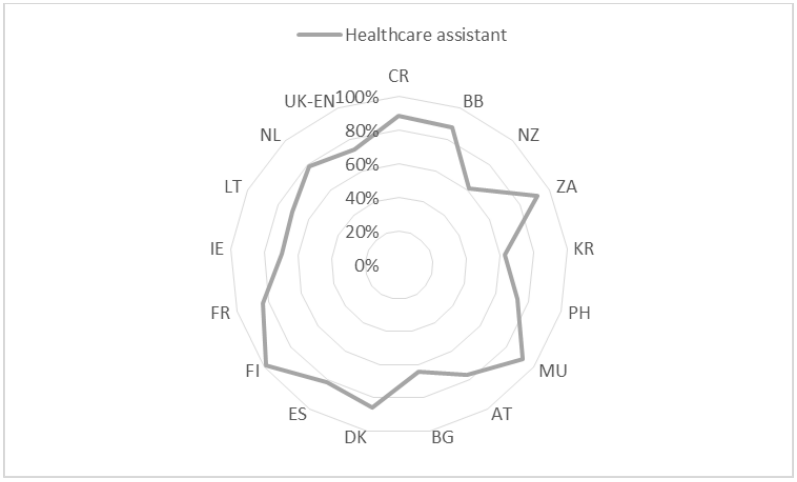
With a reference to

- ESCO multilingual terminology on job and occupational specific skills and competences
- ESCO (cross sectoral reference group) terminology on transversal skills and competences

Provides an overview and comparison of the **learning outcomes intentions** in the 26 countries covered

Same qualifications from different countries can differ quite considerably with regard the scope of the learning outcomes





Source: J.Bjornavold & B.Chakroun, 2017

ICT service technician – occupational specfic skills and competences

KSC preferred title	AL	KR	PH	NZ	ZA	UAE	ZM	MU	BB	CR	AT	BG	DK	ES	FI	FR	IE	LT	NL	UK-EN
maintain ICT system	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
perform ICT troubleshooting	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ICT network cable limitations	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■
administer ICT system		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
perform backups	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■
repair ICT devices	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■
use repair manuals		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
ICT communications protocols	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
ICT system user requirements	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■
configure ICT system		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
devise solutions to problems		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
provide technical documentation	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
use different communication channels	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
distributed directory information services	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■
ICT network routing	■	■	■	■	■	■	■	■		■	■	■	■	■	■	■		■	■	■
ICT networking hardware	■	■	■	■	■	■	■	■		■	■		■	■	■	■	■	■	■	■
keep up to date on product knowledge	■	■	■	■	■	■	■	■	■	■	■		■	■	■	■		■	■	■
maintain ICT server	■	■	■	■	■	■	■	■		■		■	■	■	■	■	■	■	■	■
use precision tools	■	■	■	■	■	■	■	■		■		■	■	■	■	■	■	■	■	■
manage schedule of tasks	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■		■	■	■
use access control software	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■		■
implement ICT recovery system	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				■
manage email hosting service	■	■	■	■	■	■	■	■		■	■		■	■	■	■	■	■		■
ICT debugging tools	■	■	■	■	■	■	■	■		■			■	■	■	■	■	■	■	■
ICT market	■	■	■	■	■	■	■	■	■		■	■	■	■	■	■		■		■
procurement of ICT network equipment	■	■	■	■	■	■	■	■		■	■		■	■	■	■		■		■
define firewall rules		■	■	■	■	■	■	■		■	■		■	■	■	■		■	■	■
ICT encryption	■	■	■	■	■		■	■		■	■		■	■	■	■	■	■		■
systems thinking	■	■	■	■		■	■	■		■	■	■	■	■	■		■	■		■
computer programming			■	■	■	■	■	■		■	■	■	■	■	■		■	■		■
ICT system programming	■	■		■	■	■	■	■			■		■	■	■	■	■	■		■
service-oriented modelling	■	■	■	■	■	■	■	■		■	■		■	■	■	■	■	■		■
manage ICT legacy implication	■	■		■	■	■	■	■		■	■		■	■	■			■		■
operate private branch exchange	■	■		■	■	■	■	■		■				■	■	■				■

Source: J.Bjornavold & B.Chakroun, 2017

ICT Technician – main similarities and differences; occupational skills and competences

Present in all countries

- Maintain ICT system
- Perform ICT trouble shooting
- ICT network cable limitation
- Administer ICT systems
- Perform backups
- Repair ICT systems
- Use repair manuals
- ICT communications protocols

Missing in more than 6-8 cases

- Procurement of ICT network equipment
- Define firewall rules
- ICT encrypton
- Computer programming
- ICT system programming
- Service oriented modelling
- Manage ICT system legacy implications
- Operate private branch exchange

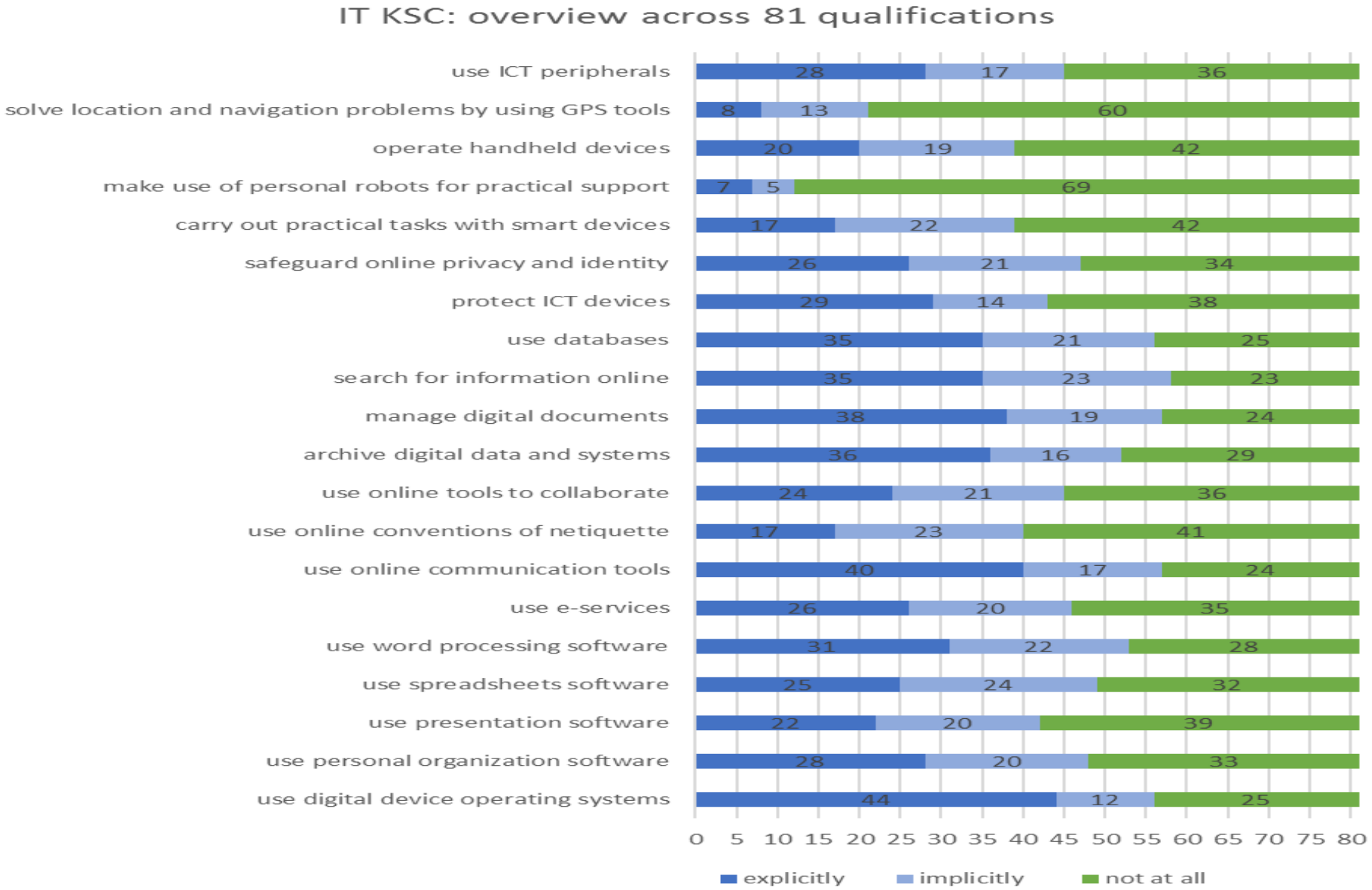
Source: J.Bjornavold & B.Chakroun, 2017

Health care assistant - transversal skills and competences

KSC preferred title	KR	PH	NZ	ZA	MU	BB	CR	AT	BG	DK	ES	FI	FR	IE	LT	NL	UK-EN
follow hygienic work practices	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
follow safety precautions in work practices	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
apply quality standards	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
interact with others	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
report facts	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
manage time	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
use body language	■	■	■	■	■	■	■	■	■	■	■	■	■		■	■	■
work in teams	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■
give advice to others		■	■	■	■	■	■	■		■	■	■	■	■	■	■	■
support colleagues	■	■		■	■	■	■	■	■	■	■	■	■	■		■	■
evaluate information		■		■	■	■	■	■	■	■	■	■	■	■	■	■	■
carry out work-related calculations	■	■	■	■	■	■	■	■	■	■	■	■	■			■	
support company plan	■		■	■	■	■	■		■	■		■	■	■	■	■	■
accept constructive criticism	■	■		■	■	■	■		■		■	■	■	■	■	■	■
instruct others		■	■	■	■	■	■	■	■	■		■		■	■	■	■
motivate others		■	■	■	■	■	■	■	■	■	■	■	■	■			■
persuade others		■	■	■	■	■	■	■		■	■	■	■	■	■		■
make decisions		■	■	■	■	■	■	■	■	■		■	■	■	■	■	
process qualitative information		■		■	■	■	■	■	■	■		■	■	■	■	■	■
follow environmentally-sustainable work practices	■	■	■	■	■	■	■		■	■	■	■	■		■		
carry out work-related measurements		■	■	■	■	■	■	■	■	■	■	■	■			■	
mother tongue		■			■	■	■	■	■	■	■	■	■		■	■	■
negotiate compromise		■	■	■	■	■	■			■	■	■	■	■	■		■
use questioning techniques		■	■	■	■	■	■	■		■	■	■	■		■		■
develop strategy to solve problems		■		■	■	■	■	■		■	■	■	■	■	■	■	
memorise information	■	■		■	■	■	■	■	■	■	■		■		■		■
support cultural diversity		■	■	■	■	■	■	■	■	■		■	■				■
communicate mathematical information	■	■	■	■	■	■	■				■	■	■			■	
handle quantitative data				■	■	■	■		■		■	■	■	■	■	■	
support gender equality		■	■	■	■	■	■	■		■		■	■				■
demonstrate intercultural competence		■	■	■	■	■	■	■		■		■		■			■
use learning strategies		■		■	■	■	■	■				■	■	■	■		■
address an audience		■		■	■	■	■	■		■		■		■		■	
recognise opportunities		■		■	■		■			■	■	■	■		■	■	
think creatively		■		■	■	■	■	■		■		■	■		■	■	
lead others		■		■	■		■			■	■	■		■	■		
use mathematical tools and equipment		■		■	■		■		■		■	■	■				
work with shape and space		■		■			■				■	■					
foreign language			■		■							■					

Source: J.Bjornavold & B.Chakroun, 2017

Comparing Digital Skills



Source: K.Luomi-Messerer, 2018

Skills matter

According to a recent report from Georgetown's Center on Education and the Workforce, liberal arts graduates have an average unemployment rate (9.7%) that is 2.7% higher than the average rate for all graduates (7%).

According to Burning Glass by coupling technical skills with a liberal arts education, individuals can nearly double the jobs available to graduates, while also offering an average salary premium of $6,000.

Eight technical skill sets:
- Marketing
- Sales
- Business
- Social Media
- Graphic Design
- Data Analysis
- Computer Programming
- IT Networking

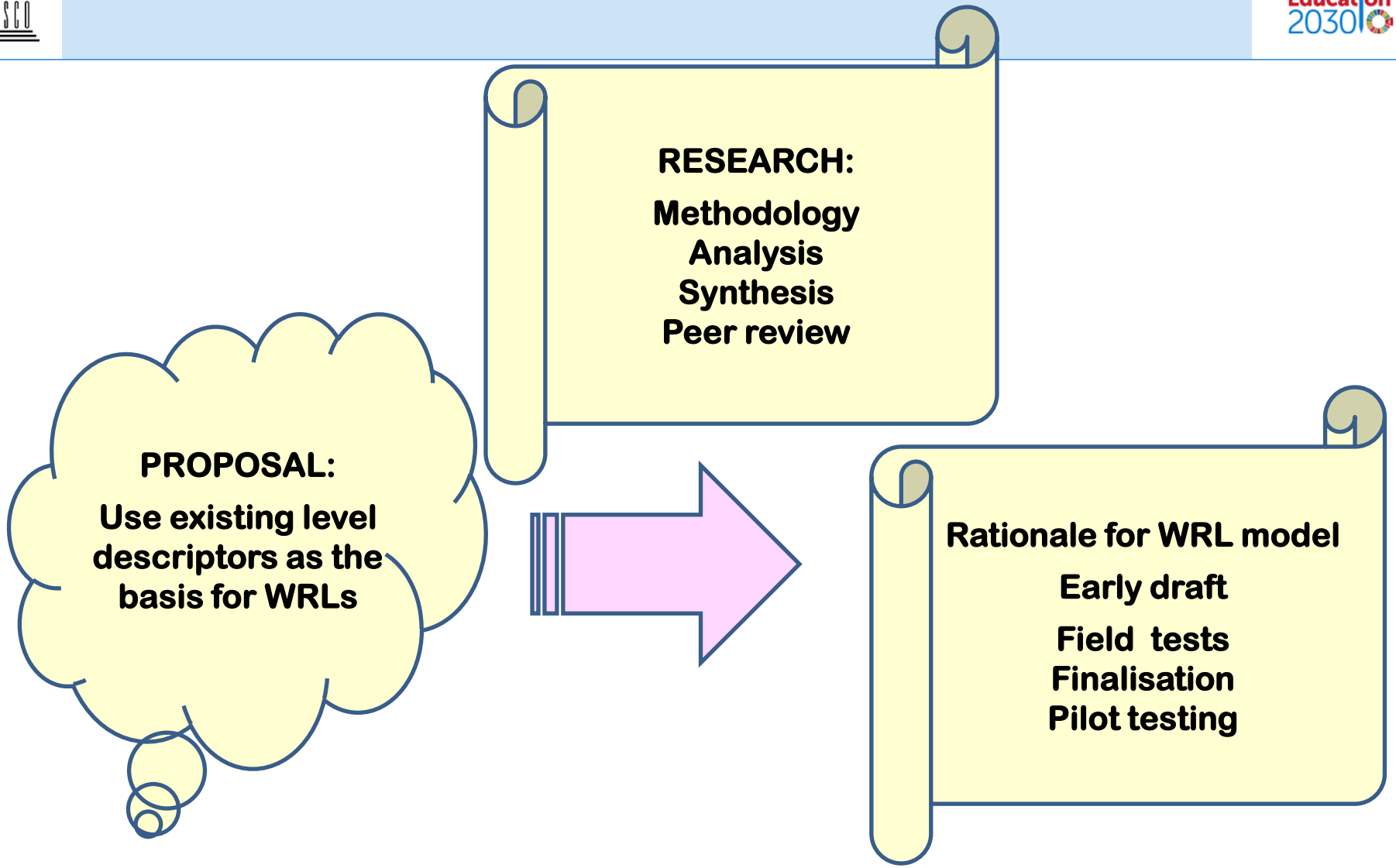
Structure of qualifications– Identifying common categories

Structure of qualifications

Category
Title of the qualification
Country/Region
Thematic area/economic sector - national classification
Level - national classification: NQF level
Level - national classification: Other information on level/position of the qualification in the national qualifications system
Name of the body awarding the ceritficate
Name of the national/ regional authority providing accreditation/ recognition of the certificate
Access to next level of education/training
Grading scale / Pass requirements
Official recognised ways of acquiring the qualification (e.g. school-based or work-based pathway)
Entry requirements of recognised ways
Volume/duration of learning required (learning hours or years of training)
Type/form of assessment
Description in terms of learning outcomes
Range of occupations accessible to the holder of the qualification
Main target groups of the qualification

- ***Title of the qualification***
- ***Country/region***
- ***Name of the body awarding the certificate***
- **Type/form of assessment**
- ***Learning outcomes descriptions***
- **Scope of the qualification (full, partial, special purpose qualification)**

World Reference Levels Technical Work


RESEARCH:
Methodology
Analysis
Synthesis
Peer review
PROPOSAL:
Use existing level descriptors as the basis for WRLs
Rationale for WRL model
Early draft
Field tests
Finalisation
Pilot testing

WRL GOAL

To translate any outcomes-based qualification, credential, entry requirements, job specification or framework level into an internationally recognised form of description which can be used in deciding on comparing qualifications or negotiating recognition or progression arrangements

The WRLs structure

The WRL is described at 8 stages.

The WRL includes 11 factors which are commonly found in tools for organising and evaluating qualifications, jobs, etc. to create a description in WRL terms.

The WRLs factors

- activities
- responsibilities
- working with others
- quality
- skills & procedures
- communication
- data
- knowledge & know-how
- context
- problems & issues
- Values

Source: John Hart, 2018

The WRLs technology-based solution

The WRL Tech-solution uses 11 factors which are commonly found in tools for organising and evaluating qualifications, jobs, etc. to create a description in WRL terms.

Each factor is described at 8 stages and users are asked, factor-by-factor, to decide which stage is the best match for the outcomes of their qualification/credential, entry/work role requirements, or framework level.

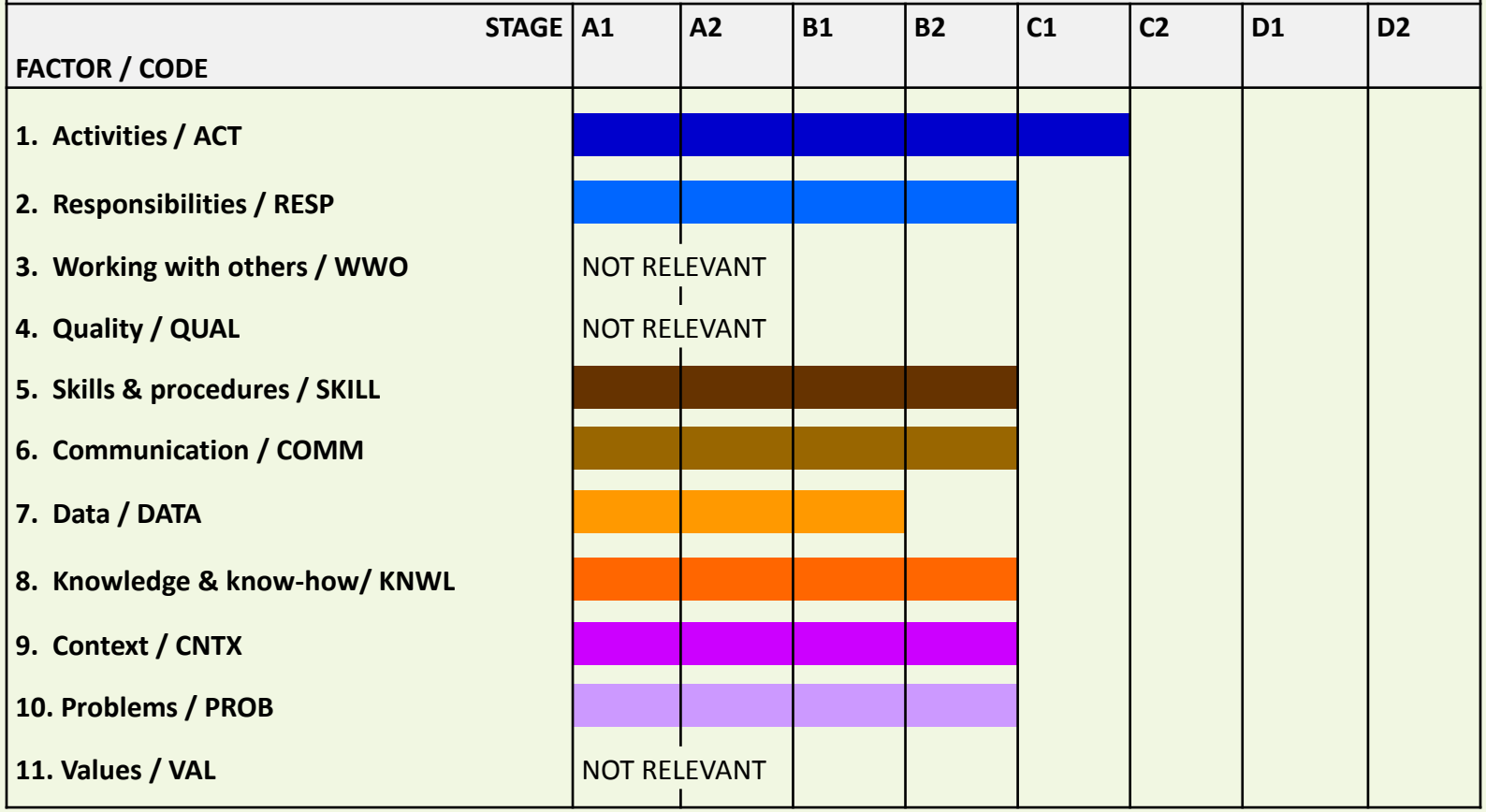
The answers are used to create a graphical profile.

Users are also asked to enter the evidence which supports the matching, and this is used to create a more detailed report.

Throughout the process, users can control the sequence of the review and amend their responses and judgements.

WRL PROFILE: Technical Skills Credential

(Awarded by Quharist.com)



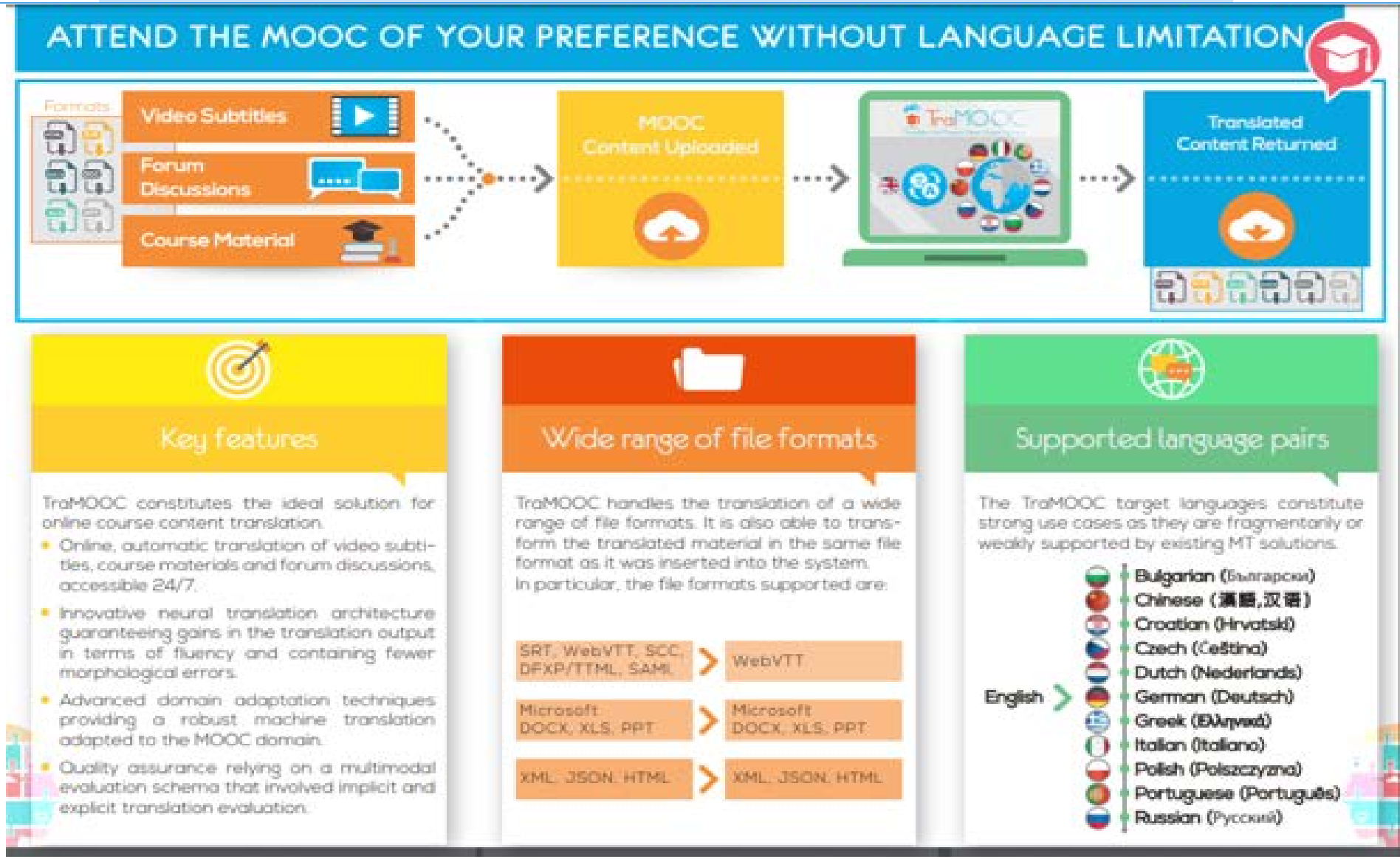
Source: John Hart, 2018

Holders of this credential will be able to:

- carry out, lead on, or manage technically complex activities which require analysis and organisation
- plan, carry out and review non-routine activities and outcomes and guide or supervise others carrying out similar activities, all within general guidance.
- select from a broad range of technical skills and procedures from a field, and use and adapt them under general guidance, to carry out activities
- select and adapt routine communication procedures and formats appropriate to the purpose and the audience from a broad range and use to:
  - gather, interpret and organise technical information and ideas related to activities
  - produce well ordered reports, responses and recommendations for initial or additional action and communicate the information or ideas to colleagues at the same, lower or higher levels or to customers or clients
- gather and process straightforward technical data using routine arithmetical or technological procedures
- draw on a broad range of routine knowledge about a field and know-how from across the field to carry out and supervise non-routine technical activities and deal with unfamiliar problems and questions that arise.
- carry out or supervise activities in routine contexts which are commonly subject to changes which cannot be foreseen or prepared for
- determine the nature and scope of non-routine technical questions and problems and in a field and deal with them by selecting and applying appropriate approaches from a broad range of routine options and adapting these where necessary.

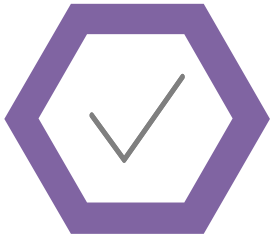
Source: John Hart, 2018

Leveraging digital technologies for comparability of qualifications



Source:http://tramooc.eu/sites/default/files/Tramooc_Final_Leaflet_.pdf 38

Some emerging themes



Verification

How to verify somebody's achievements digitally?

Content

What's in a digital credential and what does it look like?

Storage

How to store a learner's qualifications for the long term?

Exchange

How to exchange credentials quickly, securely, and reliably?

Source: Andy Dowling, 2018

Some existing architectures

CENTRAL REPOSITORIES

EXCHANGE NETWORKS

HUB AND SPOKE

BADGING PLATFORMS

PUBLIC BLOCKCHAIN

Source: Andy Dowling, 2018

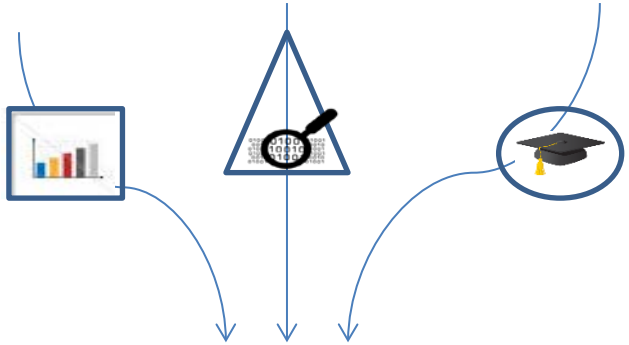
Comparing qualifications: 3 major options?

Option 1: Data integration

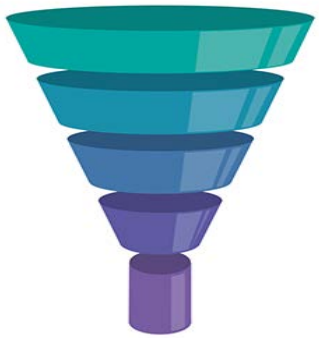
Different Sources

Occupation Standard | Curriculum | Qualification

Different data



Using DT including translator to compare



Option 2: Using International Standards/Benchmarks

No governance
Voluntary processes
Bottom-up approach

OR

Established governance lines, that link and coordinate countries and all the involved actors,

Option 3: Using International Standards/Benchmarks to conduct data integration

Key Takeaways

1. It is possible to compare the coverage of learning outcomes in specific qualifications across countries

2.Internationally it is possible to agree on some key items to be included in the description of qualifications

3.The changing labour markets may affect further the balance between job-specific and transversal skills

4.The digital factor may improve our capacity to compare learning outcomes and qualifications

Thank you

Borhene Chakroun
Chief, Section of Youth, Literacy and Skills Development
UNESCO
b.chakroun@unesco.org