Digital Skills in Vocational Education and Training

Opportunities and Challenges in View of Changing Labour Markets

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Introduction

International Labour Organization

Which jobs? Which tasks? Which Skills and qualifications?

World is changing

Society

Environment

Economy

Politics

Digital

Digitalization is rapidly changing the world

Global Internet access

57%

Mobile phone ownership

76.4%

Advanced technology adoption

100 milion

Chat GPT active users in 2 months

Source: ITU 2020

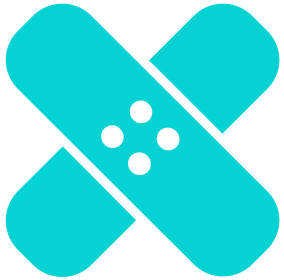
Uneven Adoption of Advanced Technologies

ROBOTICS

Five countries dominates

China, Germany, Japan, Korea and the US

– account for 73 per cent of the total global robot installations



INTERNET OF THINGS

Concentrated in top 7 countries

the US, China, Japan, Germany Korea, France and the UK

– account for nearly 75 per cent of worldwide spending on IoT

ARTIFICIAL INTELLIGENCE

Patents files, the United States leading the way

China quickly catching up

Employment projections: Digital scenario

Net increase in jobs

- 24 million

Youth will take up

- 6.4 million

▶ Table 3.3 Employment effects of extending broadband coverage, world and by region and country income group, 2022–30 (thousands)

ILO region	2022	2025	2030
Africa	2 042	3 489	6 138
Americas	391	1 549	6 224
Arab States	140	458	869
Asia and the Pacific	3 170	4 658	8 853
Europe and Central Asia	123	178	681
World	**5 904**	**10 681**	**23 977**
High income	201	816	1 993
Upper middle income	886	2 611	8 656
Lower middle income	3 921	5 249	9 338
Low income	858	1 655	2 778

Note: See Appendix A for the classification of regions.

Source: E3ME model of Cambridge Econometrics.

Employment projections: Digital scenario

Eventually, strong “Indirect” and “induced” effects through production processes and consumption

- Initially, concentrated in construction and ITC
- Eventually, cascade into retail, transport, other services and health care

▶ **Table 3.4 Employment effects of extending broadband coverage, by sector and age group, 2022–30** (thousands)

Sectors	2022		2025		2030	
	Youth (15–29)	Adult (30+)	Youth (15–29)	Adult (30+)	Youth (15–29)	Adult (30+)
Agriculture and forestry	129	343	345	983	427	1 458
Extractive industries	0	2	1	9	4	25
Manufacture of electronic and related products	156	347	168	398	227	568
Manufacture of chemicals, metallic, non-metallic and related products	53	117	81	202	215	485
Other manufacturing	54	136	145	406	481	1 269
Energy and utilities	0	1	2	6	5	19
Construction	782	1 905	633	1 562	597	1 542
Distribution, retail, hotels and catering	290	581	809	1 711	2 021	5 111
Transport and storage	91	243	221	608	493	1 374
Information and communication	189	326	212	393	383	743
Other services	32	124	213	765	965	2 962
Education	–15	–65	19	62	74	298
Health and social care	21	69	151	526	433	1 538
Public administration and defence	–1	–3	9	38	47	212
Whole economy	**1 780**	**4 126**	**3 008**	**7 670**	**6 372**	**17 605**

Source: E3ME model of Cambridge Econometrics.

Employment projections: Digital scenario

Female share in the jobs gains

2022

- 20.2%

2030

- 35.8%

▶ **Table 3.5 Youth employment effects of extending broadband coverage, world and by region and sex, 2022–30** (thousands)

ILO region	2022		2030	
	Youth male	Youth female	Youth male	Youth female
Africa	510	170	1 256	761
Americas	98	28	922	685
Arab States	30	4	188	32
Asia and the Pacific	761	149	1 473	630
Europe and Central Asia	16	5	68	54
World	**1 421**	**359**	**4 094**	**2 278**

Note: See Appendix A for the classification of regions. "Youth" refers to ages 15–29.

Source: E3ME model of Cambridge Econometrics.

TVET in LMICs: A Digital Perspective

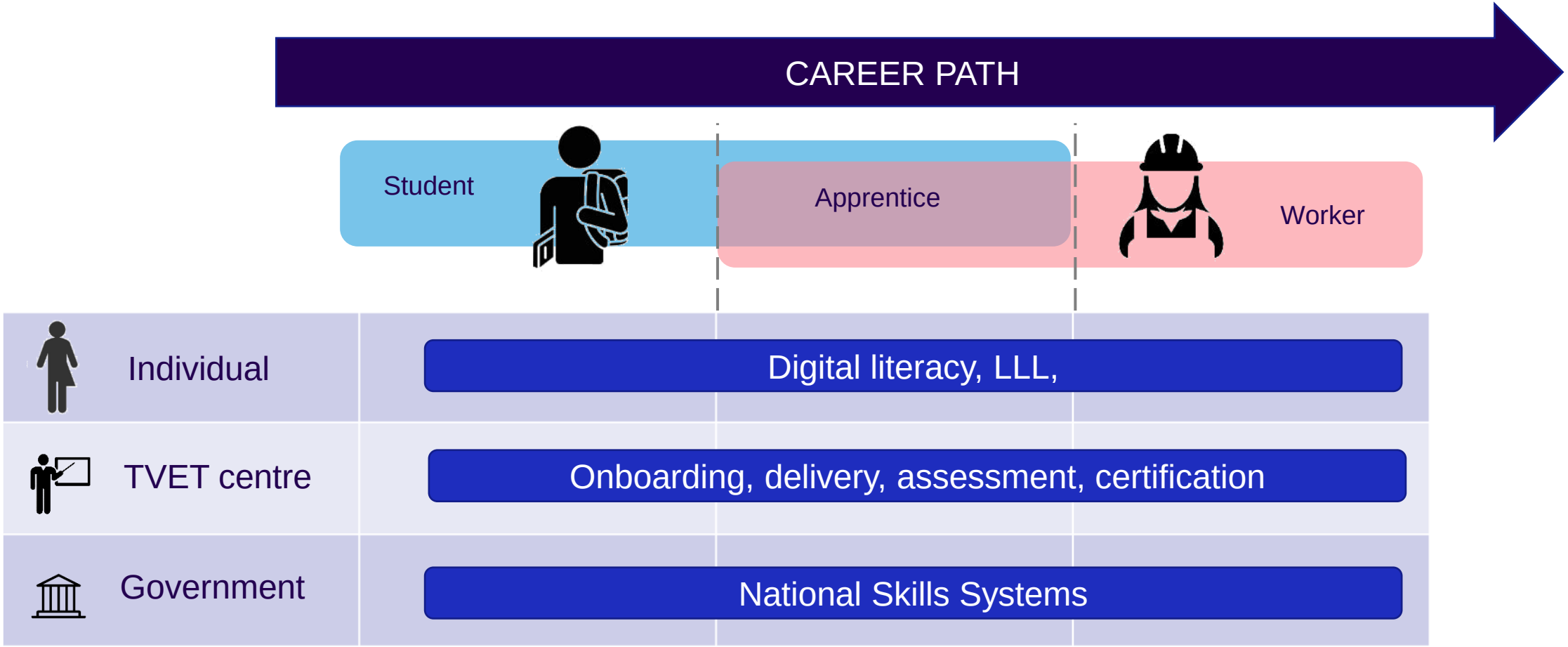
Empowering Digital Skills for Inclusive Growth in LMICs

1. **Impact of COVID-19 on TVET:**
   - ✓ Pandemic exposed vulnerabilities in TVET provision
   - ✓ Digital divide hindered remote instruction in LMIC
   - ✓ Practical skills training and work-based learning disrupted
2. **Scarcity of Digital Skills:**
   - ✓ Slow response of TVET systems to the increasing demand for digital skills
   - ✓ COVID-19 revealed weaknesses in digital skills among students and teachers
   - ✓ Irrelevant curricula and outdated training hindered skill acquisition
3. **Strategies for Enhancing Digital Skills:**
   - ✓ Importance of upskilling TVET teachers for effective digital learning
   - ✓ Public-private partnerships are crucial for fostering digitalisation
   - ✓ Initiatives in South Africa and Kenya exemplify collaboration for digital skills development
4. **Unique TVET Role in LMICs: A Digital Imperative**
   - ✓ Quality TVET is crucial for economic growth in the digital era
   - ✓ TVET enhances employability in LMICs, aligning skills with digital market demands
   - ✓ Contributes to SDGs, fostering inclusive economic growth in the digital age
   - ✓ Employer surveys highlight the significance of technical digital skills
5. **Adapting to Digital Labour Market Dynamics:**
   - ✓ LMIC-focused TVET adapts to digital self-employment, green, and entrepreneurship demands
   - ✓ Prioritizes training for greener digital jobs, aligning with sustainable practices
6. **TVET's Role in Green Transition:**
   - ✓ Anticipated demand for green skills in TVET due to the global shift to a greener economy
   - ✓ Uncertainty exists regarding the skills content and pace of change
   - ✓ Initiatives in the Philippines and South Africa demonstrate efforts to align TVET with green job demands

Key Takeaway:

- ➢ TVET in LMICs plays a pivotal role in addressing specific challenges, with a digital focus on skills alignment with local needs, emphasising digital literacy, and responding to the evolving demands of the digital economy.
- ➢ Therefore, TVET faces challenges in adapting to digital and green transitions, but strategic reforms and collaborations offer opportunities for improvement.

A complex problem at different levels:



Individuals

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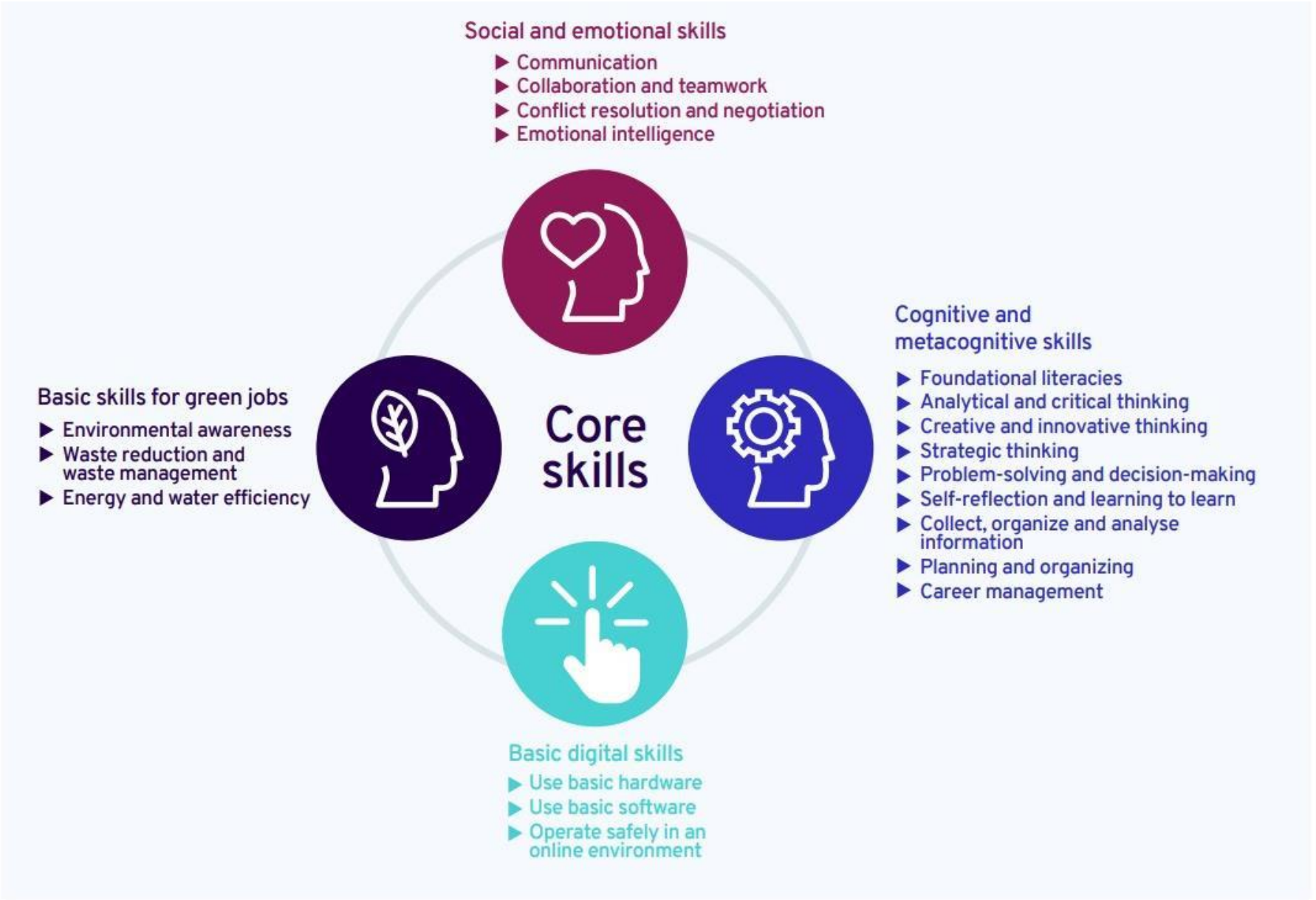
Core Skills



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Digital Skills

Basic and generic digital skills

- Basic digital literacy
- Software-user skills such as spreadsheets and word processing
- Internet browsing, Social media
- Email

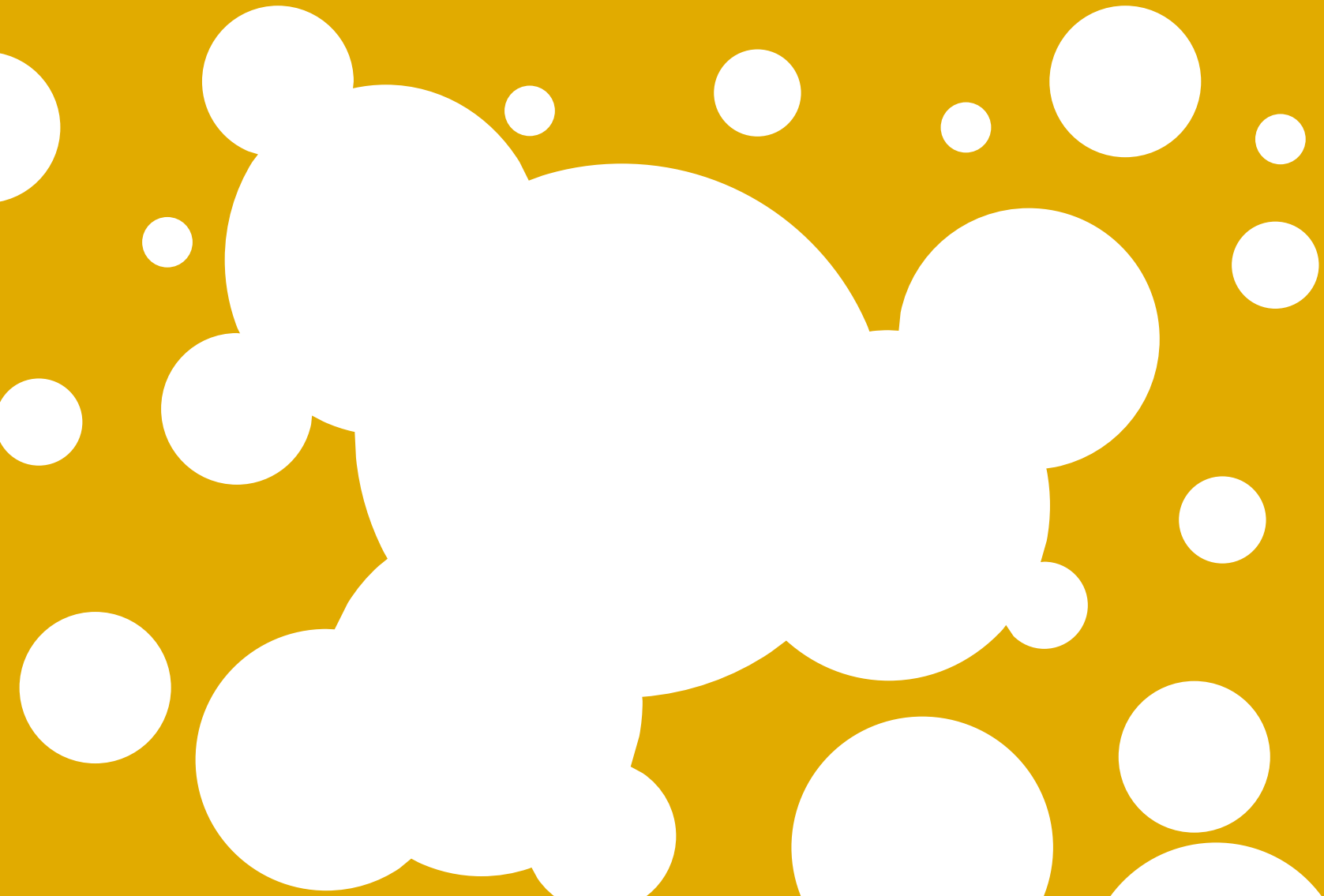
Intermediate digital skills

- Enable us to use digital technologies in even more meaningful and beneficial ways
- Ability to critically evaluate technology or create content
- Digital graphic design
- Digital marketing

Advanced digital skills

- Skills needed by specialists in ICT professions
- computer programming and network management
- AI, big data, coding, cybersecurity, IoT and mobile app development etc

TVET Institutions



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New ways

OLD WAYS	NEW WAYS
Time based	Outcome based
Textbook-driven	Research-driven
Passive learning	Active Learning
Teacher-centered	Student-centered
Paper assessment	Multiple forms assessment
Print	Multimedia
Isolation	Collaboration
Fact & memorization	Higher-order thinking

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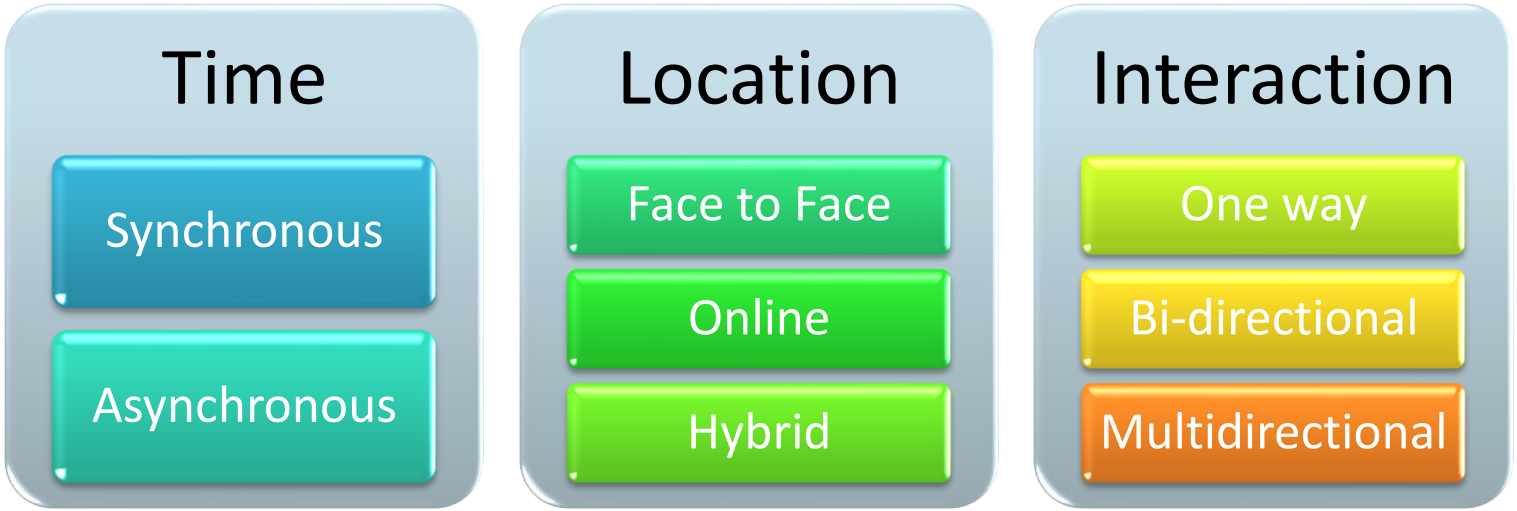
Towards blending



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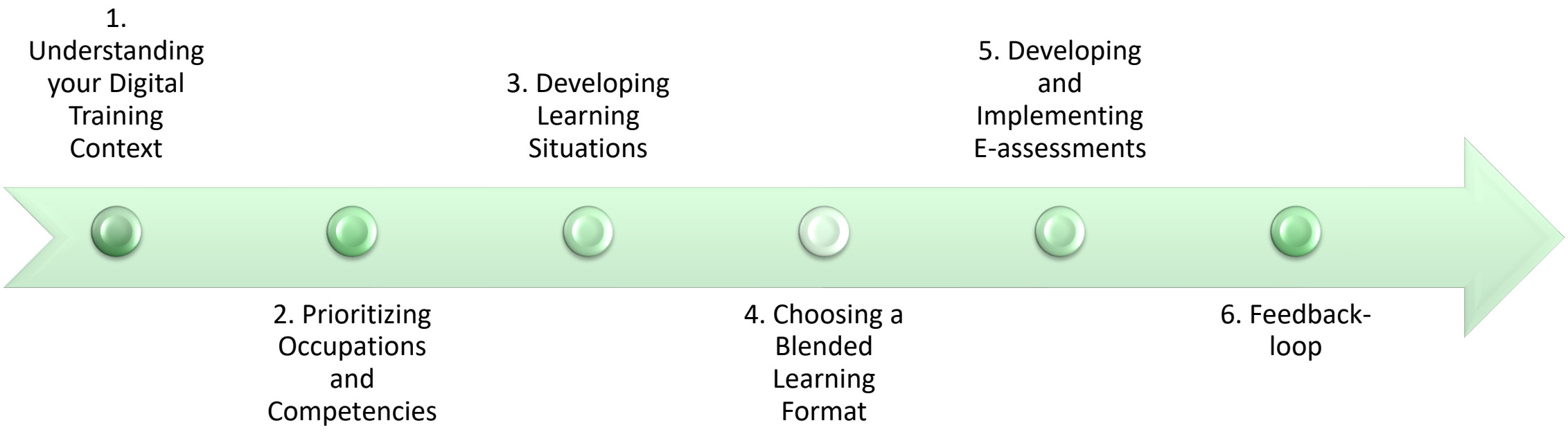
Upcoming publication for Digitalisation of TVET programmes



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Key challenges for TVET institutions

- **Adapting to Rapid Changes**: TVET and skills systems had to rapidly adapt to the learning crisis and accelerate the introduction of digital technologies.
- **Responding to New Skills Demand**: These systems are facing multiple challenges to efficiently respond to the external demand for new skills from our increasingly digital society and enterprises.
- **Undergoing Digital Transformation**: TVET institutions themselves are engaging in their own digital transformation, which presents its own set of challenges.
- **The World fast changes**: Globalization, Technological Progress, Demographic Transformation, and Climate Change. TVET needs to adapt to these broad societal and economic changes.
- **Certifications**: The nature and scope of digitalisation is likely to affectthe management, Delivery, Assessment, and Certification aspects of technical and vocational education and training.
- **Apprenticeships**: within SMEs are often not using latest technologies

Governments

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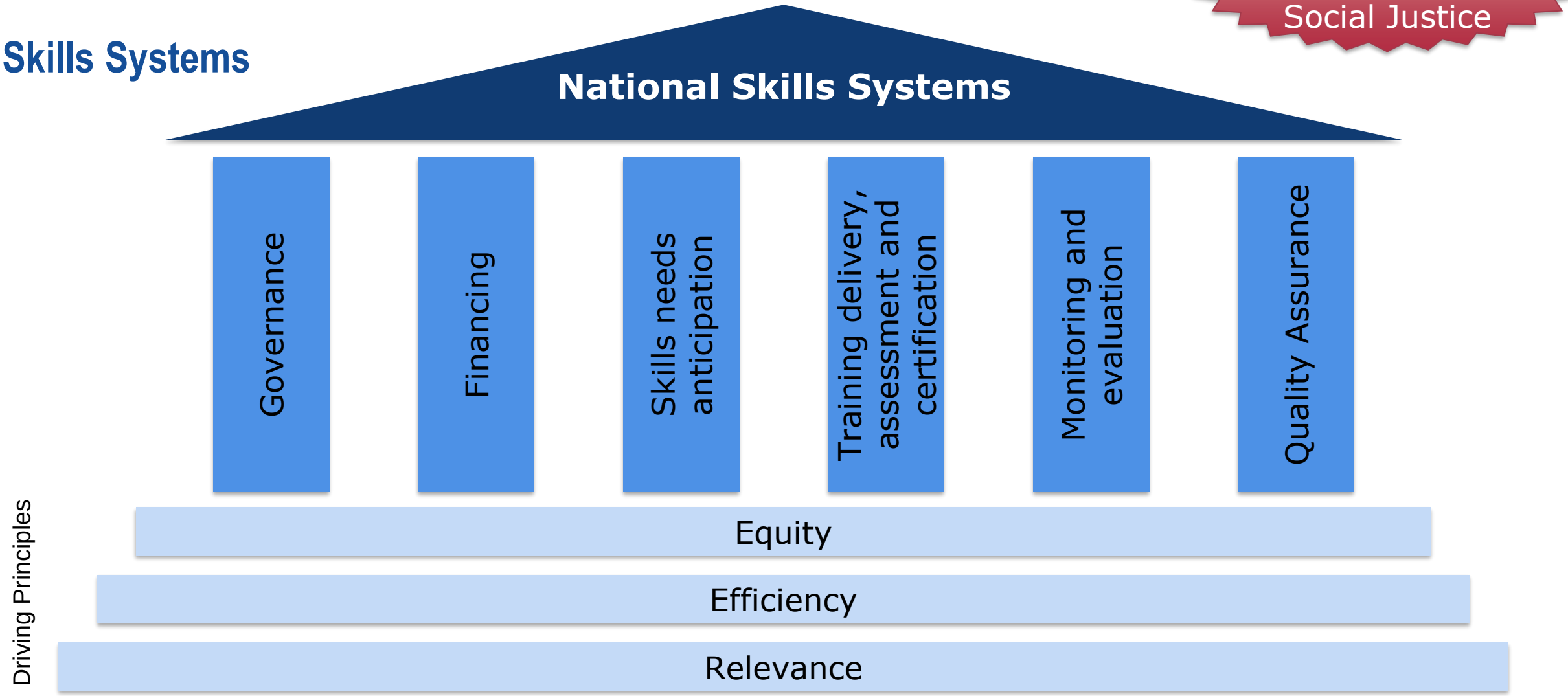
Leads towards

Employability
Productivity
Decent Work
Social Justice

Skills Systems



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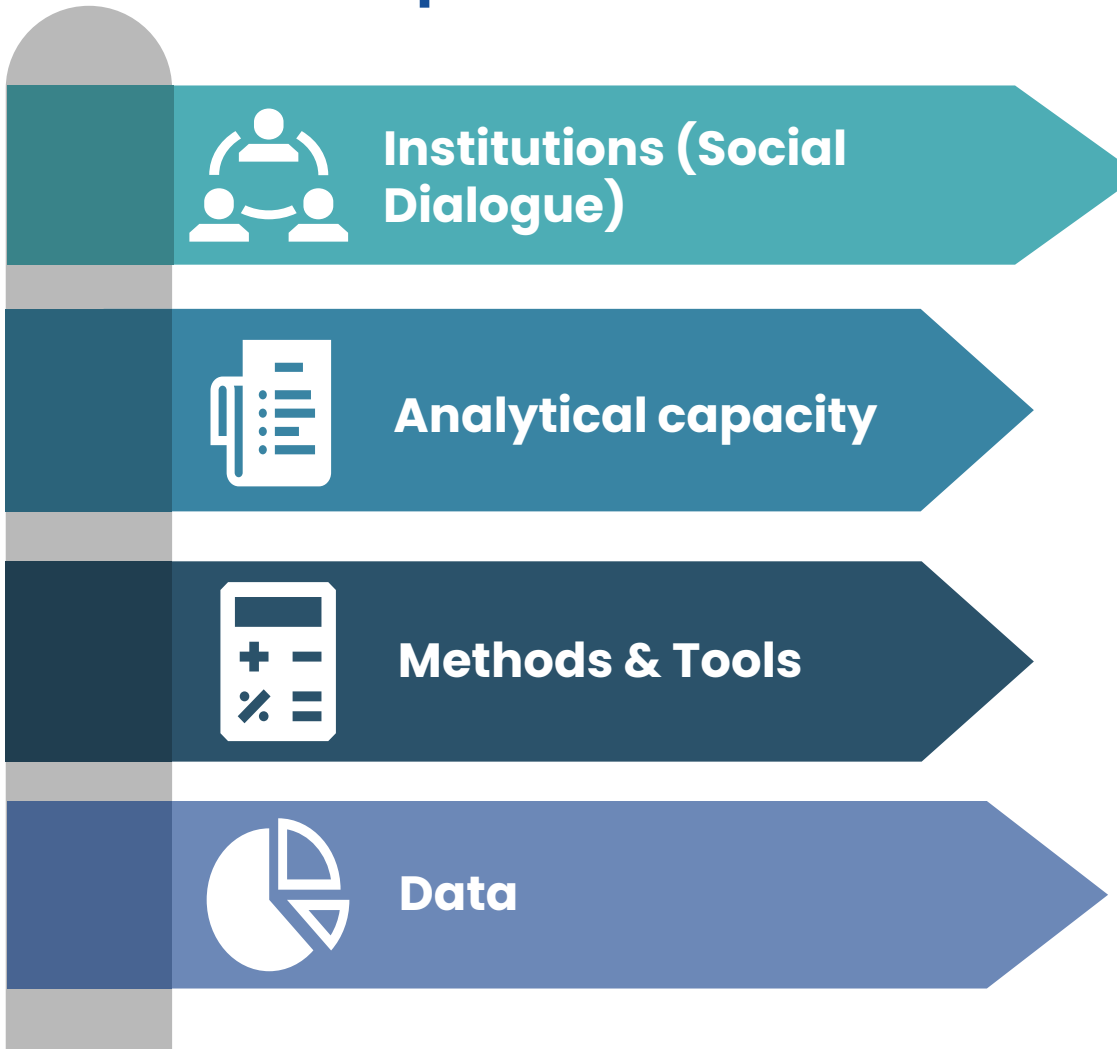
Essentials components of skills needs anticipation



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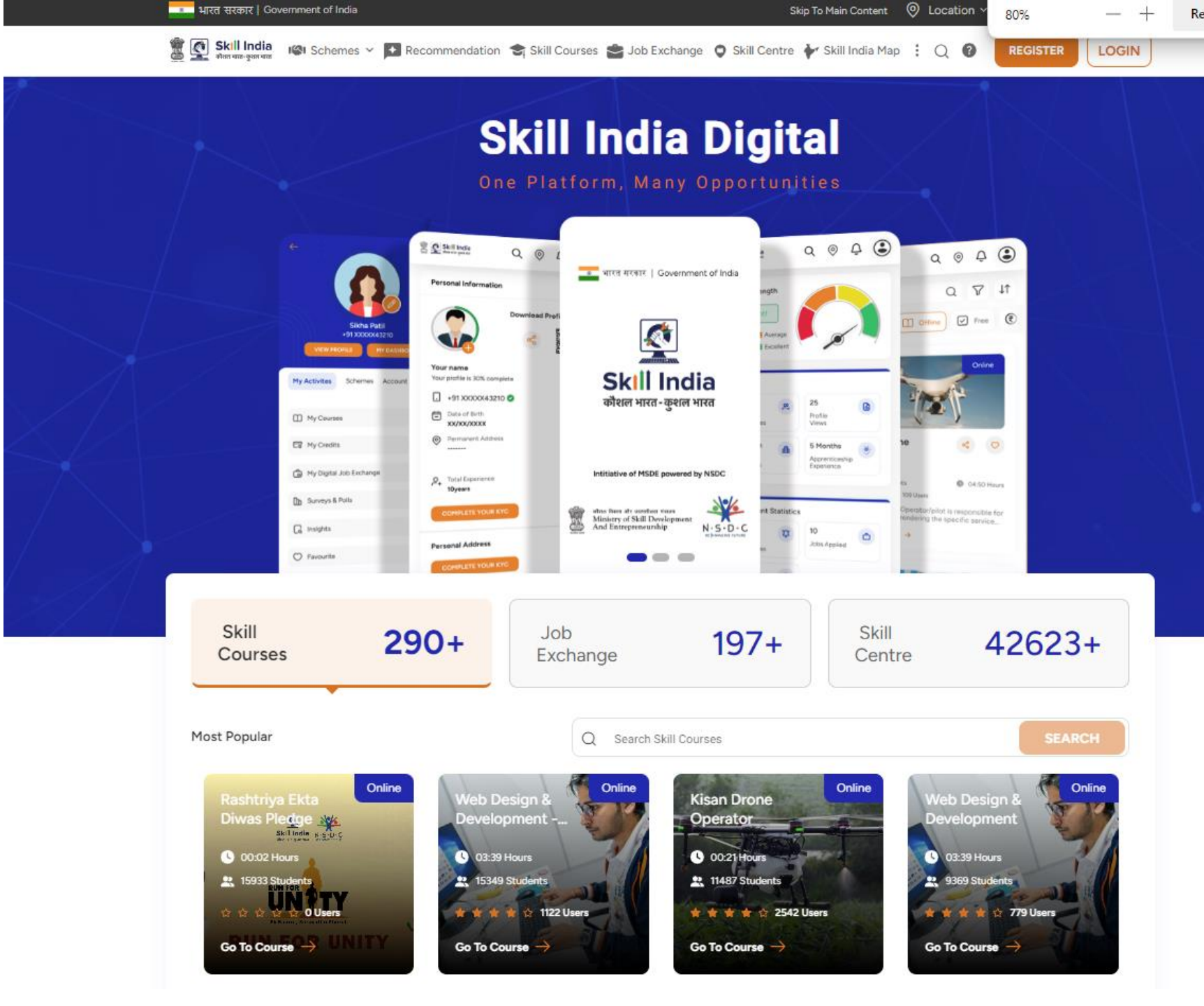
Country example: India



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Key challenges for governments

- **Ensuring equal access to digital resources**: addressing the digital divide and access to the necessary digital tools and resources.
- **Developing relevant digital skills**: ensure individuals are equipped with the digital skills that are relevant to the current and future labor market.
- **Adapting to rapidly changing technology**: ensure that their National Skills Systems can adapt quickly to fast tech changes
- **Ensuring quality of digital learning**: governments need to ensure quality of digital learning and that it effectively leads to the acquisition of relevant skills.
- **Data privacy and security issues**: increase of digital learning and digital tools, increases issues related to data privacy and security.
- **Promoting lifelong learning**: governments need to promote a culture of lifelong learning.

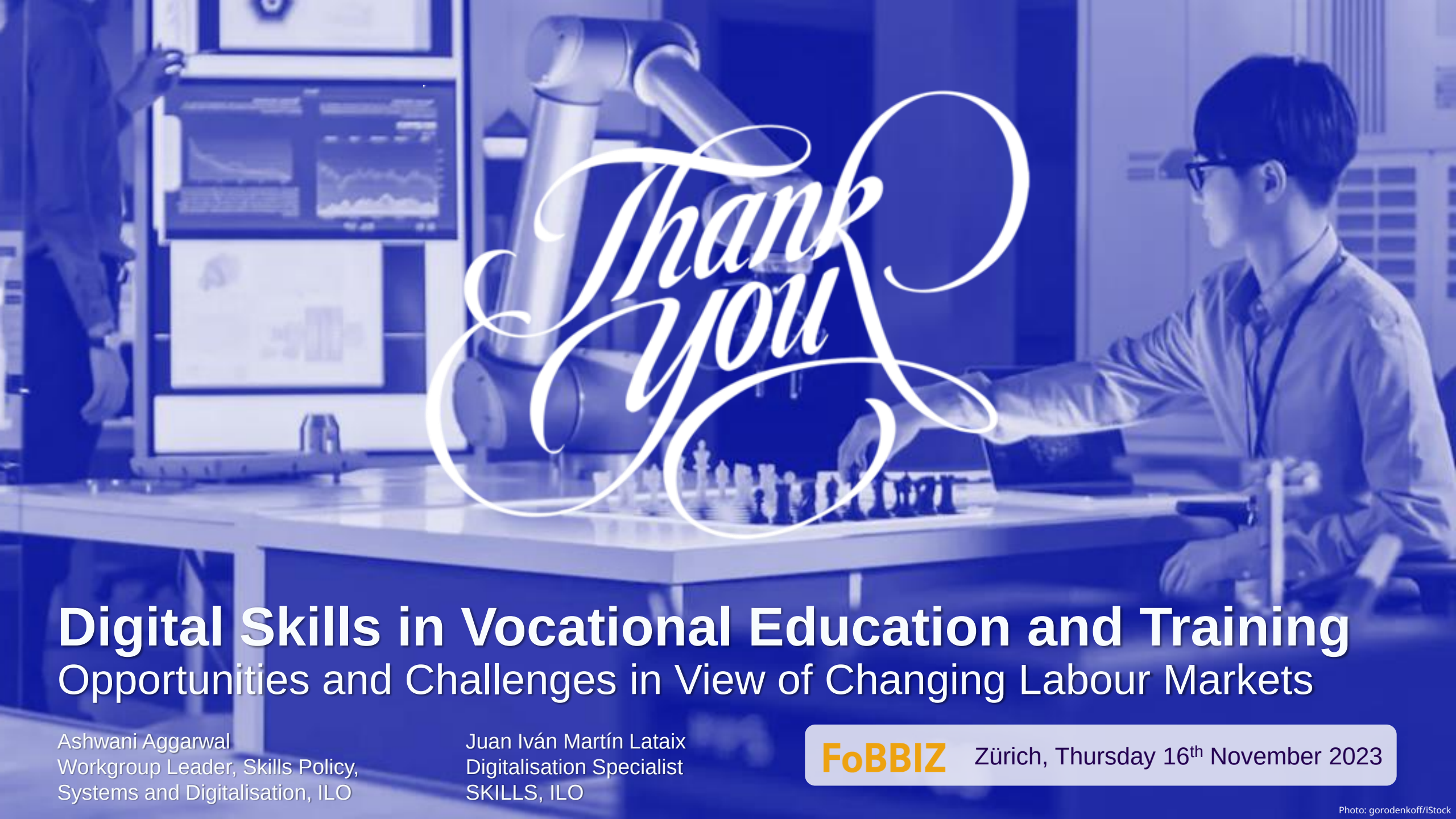
Conclusions

- Digital skills are not only for IT professionals, everyone needs them!

- We all need to upskill and reskill during our career path

- Covid was an accelerator, but now there is fatigue

- Systems level is often forgotten but critical to build long-term solution



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