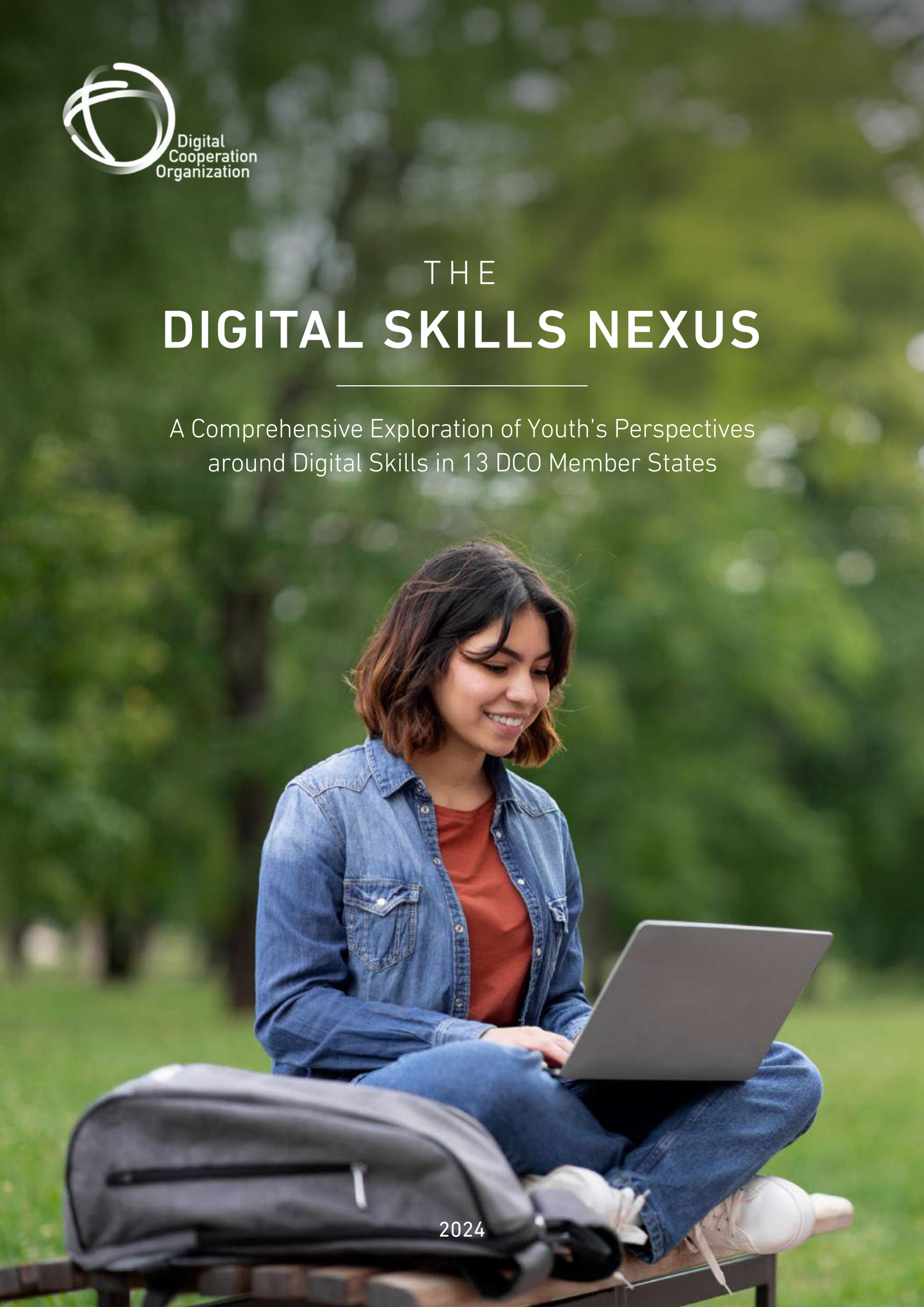
Digital Cooperation Organization

THE DIGITAL SKILLS NEXUS

A Comprehensive Exploration of Youth's Perspectives around Digital Skills in 13 DCO Member States



2024

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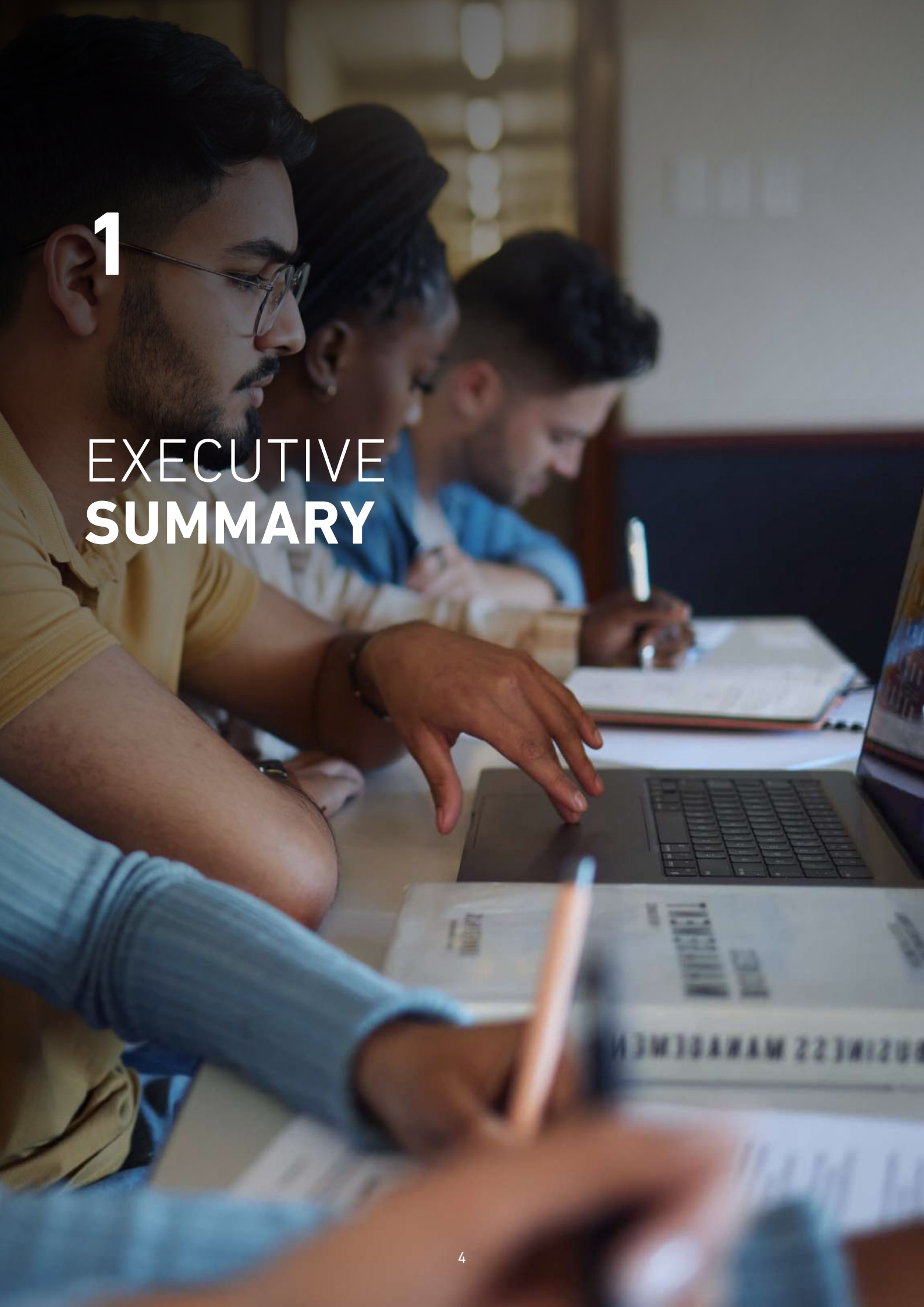

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EXECUTIVE **SUMMARY**

The Digital Cooperation Organization (DCO) launched the **Digital Space Accelerator (DSA) mechanisim** to bring together a thematic group of thought leaders, subject matter experts, and decision-makers from governments, the private sector, international organizations, academia, and civil society. This effort aims at identifying solutions that address the key barriers to enabling a thriving, sustainable, and inclusive digital economy.

The DSA, focusing on the **Digital Skills Gap for Youth,** endeavors to bridge the digital capability gaps in youth, i.e. individuals in the age group of 18-25 years. By doing so, it aims to contribute to the creation of opportunities, improvement of employability, and enhancement of participation of such individuals in advancing developing economies.

The DCO's vision for bridging the Digital Skills Gap in Youth entails using a comprehensive approach and methodology:

Global research to shortlist critical digital skills required by the youth

Robust digital skills framework with detailed proficiency requirements

Digital skills survey to identify major skill gaps and understand supporting ecosystem needed

Playback survey insights at roundtables and collaboratively recommend relevant strategies for bridging gaps

Bring it all together and publish a thought paper highlighting the way forward

SURVEY INSIGHTS

The Digital Skills Survey participant demographics:

Country	Total Respondents	Age: 21-18	Age: 25-22	Male	Female	Students	Employed	Looking for Employment
Bahrain	100	100	-	60	40	50	32	18
Cyprus	100	100	-	60	40	50	31	19
Djibouti	116	113	3	76	40	60	28	28
The Gambia	100	100	-	60	40	50	29	21
Ghana	103	103	-	61	42	50	31	22
Jordan	103	103	-	62	41	50	33	20
Kuwait	107	107	-	67	40	50	37	20
Morocco	103	103	-	62	41	51	32	20
Nigeria	110	107	3	66	44	50	35	25
Oman	101	101	-	61	40	49	30	22
Pakistan	104	103	1	60	44	50	27	27
Rwanda	105	105	-	64	41	51	30	24
Saudi Arabia	104	102	2	62	42	47	34	23

The key findings from the Digital Skills Survey underscores the need to develop 'digital skills in youth' for economic competitiveness in the future.

Affinity Towards Digital Skills

Nearly 83% of all respondents and 43% of employed youth across countries, strongly feel that it is 'important/extremely important' to develop digital skills in light of growing competitiveness in the job market.

Proficiency in Career-Related Digital Skills

The proficiency in career-related digital skills is significantly low, with only 27% of respondents on average stating that they can apply such skills in practice. This indicates that the current level of proficiency might be insufficient to meet the existing and future job demands.

Preference for Upskilling and Awareness of Opportunities

While the youth display the intent to upskill through multiple modes such as reading, online courses, etc., the awareness of the upskilling opportunities available to them is alarmingly low, with the awareness of country-sponsored programs being 20%, and employer-sponsored programs being only 7%.

Proficiency in Essential Digital Skills

Almost 65% of respondents on average believe they are proficient in essential digital skills, such as using digital devices (78%) and basic software applications (77%). This indicates a moderately good ability to participate in the digital aspects of modern society.

Proficiency in Digital Mindset Skills

Two out of three respondents indicate a high-level of proficiency in digital mindset skills required to collaborate in a virtual setup and continuously adapt to learn new skills. This indicates an inclination towards embracing new ways of working and demonstrating learning agility.

ROUNDTABLE CONVERSATION INSIGHTS

The global roundtable discussions conducted by the DCO in Riyadh, Cape Town, and Geneva highlighted considerations from multiple stakeholder groups for bridging the digital skills gaps in youth. These considerations can be categorized across the following levels:

Academic Level

- Research-driven insights for effective curriculum development
- Specialized expertise in pedagogy and technology
- Establishment of training programs that align with the latest advancements in digital skills and capabilities
- E-learning and byte-sized, self- paced learning
- Career counselling
- Train the trainer programs
- Incentivize non-profit organizations through scholarships and PhD programs
- Social media interactive learning programs

Organizational Level

- Development of targeted training programs aligned with industry needs
- Mentorship and social learning opportunities
- Establishment of internship programs to bridge the gap between theoretical knowledge and practical application
- Communications and monitoring
- Vocational training
- Eminence and SME-empanelled events
- Public and private sector sponsored seminars and conferences

National Level

- Strategic planning
- Infrastructural development
- Grants and sponsorships
- Centralized coordination systems for large-scale implementations of interventions
- Vast array of public records and data to contextualise interventions
- Awareness campaigns
- Centralized governance and administration
- Free digital skills learning courses
- Digital skills exchange programs

THE DCO CONSIDERATIONS

Academic (Educational) Considerations

- Competitive Curricula and Assessments on Digital Skills Building
- On-the-Job Learning
- Infrastructures for E-Learning
- Dedicated Guidance Programs for Careers in Data and Technology
- Train the Trainer

Organizational (Professional) Considerations

- Structured and Well-Communicated Interventions
- Peer Learning
- Mentorship and Shadowing
- Partnership with Learning Platforms
- Industry Conferences on Digital Learning
- Vocational Skills Training
- Continuous Learning Culture

National (Country-wide) Considerations

- National Digital Transformations Strategy
- Financial Assistance and Affordable Technology
- Infrastructural Improvements
- Centrally Administered Learning Ecosystems
- Entrepreneurial Support

2

BUILDING THE CASE FOR DIGITALLY SKILLED YOUTH IN **THE EVOLVING TECHNOLOGY LANDSCAPE**

THE DCO STRATEGIC EMPHASIS ON DIGITAL SKILLS FOR YOUTH

The DCO is a global intergovernmental organization established in November 2020 with the mission of promoting digital prosperity for all by facilitating the inclusive and sustainable development of the digital economy. The DCO focuses on empowering youth, women, and entrepreneurs, harnessing the transformative potential of the digital economy, and embracing innovative approaches to drive economic growth and enhance social well-being. Through enhanced collaboration and dialogue, the DCO aims to create a supportive environment conducive to the rapid advancement of digital economies, enabling individuals, businesses, and societies to innovate and flourish.

The realization of sustainable development relies heavily on a flourishing digital economy. Despite the numerous prospects it presents, the transformation brought about by digitalization and technological progress is reshaping the employment landscape, necessitating a shift in the required skill sets.

THE CHANGING DIGITAL LANDSCAPE: WHY DIGITAL LITERACY MATTERS FOR OUR YOUTH

The realization of sustainable development relies heavily on a flourishing digital economy. Despite the numerous prospects it presents, the transformation brought about by digitalization and technological progress is reshaping the employment landscape, necessitating a shift in the required skill sets.

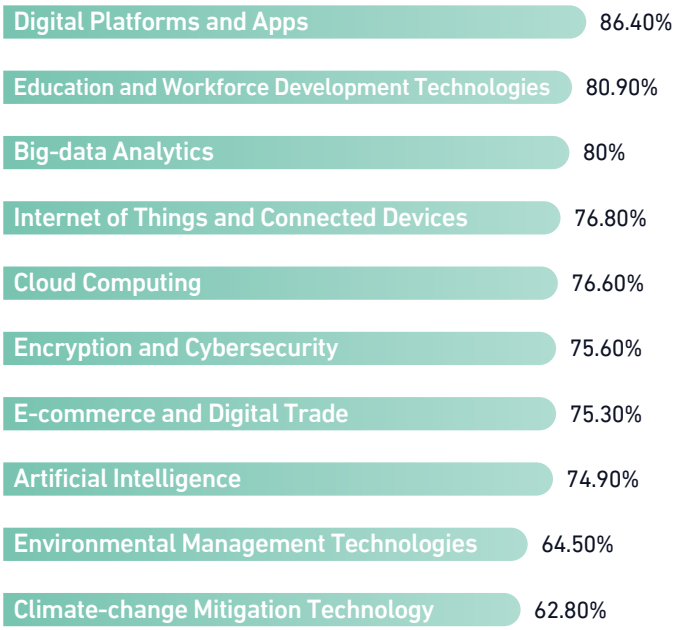
Emerging Technologies and Jobs

According to the World Economic Forum's Future of Jobs Report, **over 70% of organizations are currently contemplating the integration of various technologies**[1] into their strategic, operational, and tactical workflows to improve efficiency. These include Digital Platforms and Applications, Educational and Workforce Development Technologies, Big Data Analytics, the Internet of Things (IoT), Cloud Computing, Cybersecurity, Artificial Intelligence (AI), and more.

This shift in technology adoption is anticipated to result in a **substantial increase in positions related to technology within the next 5 years**[1]. These roles include:

- AI and machine learning specialists
- Information security analysts
- Fintech engineers
- Data analysts and scientists
- Robotics engineers
- Big data specialists, and others

TECHNOLOGIES LIKELY TO BE ADOPTED IN NEXT 5 YEARS



FASTEST GROWING JOBS

40% AI and ML Specialists

34% Sustainability Specialists

32% Business Intelligence Analysts

30% Information Security Analysts

30% Data Analysts & Scientists

29% Big Data Specialists

28% Fintech Engineers

25% Robotics Engineering

Consequently, there is a growing demand for the acquisition of new, forward-looking skills. The **key skills expected to be crucial in the coming 5 years**[1] encompass:

- Analytical thinking
- Technological literacy
- Proficiency in AI
- Problem-solving
- Expertise in data analytics

IMPLICATIONS OF THE CHANGING DIGITAL LANDSCAPE ON YOUTH EMPLOYABILITY

Gaps in digital skill readiness directly correlate to rising levels of unemployment among the younger population. Employers are experiencing a significant gap in digital and technology-related skills in the market.

According to the DCO's 2022 survey of 750 people in 12 countries, **47% of businesses identified a shortage of adequately trained personnel** as a significant obstacle preventing them from fully engaging in the digital economy[2]. The survey confirmed that **improved access to advanced digital technologies could facilitate the process of securing higher-paying employment opportunities or initiating businesses**[2].

A 2021 market survey by Wiley revealed that only

8% of employers believe that students possess the digital skills needed for entry-level employment[3]

Digitalization has fundamentally changed the conceptualization of work and the way people carry out their job responsibilities. Unconventional employment arrangements like **casual work** have become prevalent[4]. **Remote work,** now a new standard for some, and the increasing significance of **digital entrepreneurship** are contributing significantly to economic development and social progress, particularly in the aftermath of the COVID-19 pandemic[4].

While fostering a highly skilled digital workforce is essential for propelling digital transformations, developing nations need to be cognizant of how critical the case for is in building a digitally skilled cadre of youth.

Without relevant, up-to-date, and practicable digital skills, the youth of these economies would be faced with:

High Risk of Job Disruption:
A significant portion of the youth are employed in sectors highly susceptible to disruption caused by emerging digital technologies, including Infrastructure, Healthcare, Professional Services, and Public Administration. The lack of crucial digital skills required for social and professional interactions may impact the youth's ability to operate and collaborate in a digital set up.

Scarcity of Emerging Technology Skills:
Despite an increasing emphasis on technical skills, there remains a shortage of expertise in emerging technologies such as AI, cybersecurity, and cloud computing. This results in several consequent productivity losses for companies, including innovation bottlenecks – a struggle to keep pace with technological advancements owing to lack of digital talent.

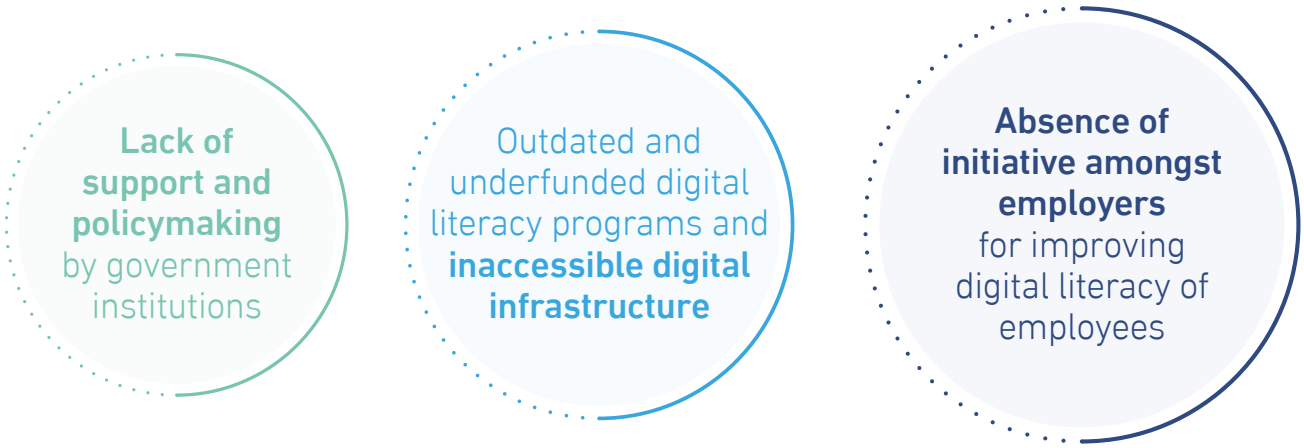
Dependence on Imported Talent:
Lack of digital skills in the local workforce may result in heavy reliance on importing talent from outside the country. Local youth of a country may not be preferred by prospective employers due to their limited proficiency in digital tools and technologies, that might prevent them from working efficiently and being a sustainable resource for the company.

Heightened Cybersecurity Vulnerability:
A population lacking digital literacy can impact the risk management readiness of an economy, as the youth become more prone to falling victims to cybercriminals and hackers. From an employment standpoint, this weak spot also reduces their chances of being hired by companies, as the latter may perceive their skills gap as an inability to adhere to their digital norms and code of conduct.

Elevated Youth Unemployment:
A notable disparity exists between the digital skills sought by employers in the region and the skills the local workforce can provide. Local professionals often lack the digital competencies required by employers to keep abreast of the evolving technological landscape and industry demands. Unemployment rates are high in countries with youth lacking basic digital literacy, thereby leaving many job opportunities unfilled.

WHAT MAKES BECOMING DIGITALLY LITERATE CHALLENGING FOR THE YOUTH

The Wiley Digital Skills Gap Survey[5] identified lags that prevent the youth from becoming effectively digitally skilled. These lags can be categorized across 3 stakeholder groups – Government, Academia, and Organization.



Evidence of significant digital skill gaps across developing economies can largely be attributed as an outcome of their lagging digital infrastructure and under-resourced public education systems, particularly in the realm of digital education and training. To expedite overall economic development, substantial support for **capacity building, capability enhancement,** and ongoing **financial assistance** is crucial. Notably, even modest progress in these areas is associated with a rapid improvement in digital literacy. Addressing the digital skill gaps holds the potential to reverse the trend of "jobless youth", reshaping economies by investing in digitally enabled jobs.

As economies welcome bullish markets, job opportunities are also expected to pick up shortly. However, the competitive talent market will prove favorable to individuals who can adapt and actively apply their knowledge of the digital landscape to help organizations gain an edge over their peers. Therefore, it is highly recommended that the younger workforce is ready for these tides of digital advancements through timely and effective capability development interventions.

3

THE ROADMAP FOR OUR **INTERVENTION**

OUR APPROACH AND METHODOLOGY

The DSA on Digital Skills Gap for Youth has been designed to empower young individuals by equipping them with the digital skills essential to navigate and thrive in the digital world. The primary pillars of the intervention included:

Digital Skills **Framework**

Conduct global research across reputed industry and academic research, publications, and competency frameworks to understand how digital skills are looked at from multiple perspectives. Align on a universal and all- encompassing definition for Digital skills. Shortlist critical skills required by the youth to design a comprehensive Digital Skills Framework

Digital Skills **Survey**

Leverage the skills framework to assess the perceived proficiency of youth across relevant skills. Identify notable deficiencies and emerging patterns, including the youth's needs and additional support required for upskilling

Roundtable **Conversations**

Playback survey insights and collaborate with a diverse group of participants, including employed and unemployed youth, students, parents, organizational and industry representatives, as well as academicians. Discuss challenges and identify opportunities to close the digital skills gap.

THE DIGITAL SKILLS FRAMEWORK

We perused our research findings to settle on a holistic definition of Digital skills:

Digital Skills can be defined as
a range of abilities to use digital devices and technologies effectively and responsibly for a variety of personal and professional purposes

We identified **14 different Digital Skills** that would be relevant for the youth of a truly digital economy. These skills were further categorized into three broad clusters – **Essential, Career Related,** and **Digital Mindset.**

Digital Mindset Skills

Attitudes and approaches necessary to navigate efficiently in the digital environment

- Problem Solving/Critical Thinking
- Virtual Collaboration
- Adaptability

Essential Digital Skills

Foundational skills crucial for functioning effectively and responsibly in the digital environment

- Use of Digital Devices
- Use of Software Applications
- Information and Data Literacy
- Digital Safety and Security

Career-Related Digital Skills

Specialized and advanced skills relevant to academic and professional growth in the digital environment

- Website and Application Development
- Digital Design (User Experience/User Interface)
- Data Analytics & Data Visualization
- Emerging Technology
- Digital and Social Media Marketing
- Information and Cyber Security
- Project Management

Our Digital Skills Framework was also equipped with a **3-level proficiency scale,** encompassing **Foundation, Intermediate,** and **Advanced** levels of working proficiency definitions across each of the 14 skills. We leveraged this scale to measure the maturity of the Youth across the DCO Member States within the ambit of the identified Digital Skills.

DIGITAL SKILLS SURVEY

In line with this objective, we launched a quantitative survey across 13 DCO Member States that was proctored in both an online as well as a pen-and-paper mode. The survey secured participation from 1,356 individuals from diverse backgrounds who fit our definition of "youth".

Who is a "Youth"?

Our research considered a well-defined set of criteria for what it means to qualify as "youth". We focused on individuals between the ages of 18 and 25. Typically, individuals within this age range would be:

- Students
- Looking for a job (Currently unemployed)
- Employed (Part-time)
- Employed (Full-time)
- Others (Homemaker, etc.).

Purpose of the Survey

A questionnaire was distributed to suitable participants, and their inputs were collated and analysed to capture emerging insights on:

- The perceived importance of digital skills
- The respondents' proficiency across the identified skills as per our Digital Skills Framework
- Preferred modes of upskilling
- Levels of awareness of various initiatives on digital skill building
- Areas where additional support is required for upskilling

ROUNDTABLE CONVERSATIONS

Beyond the survey, we also engaged in roundtable conversations with stakeholder groups in Riyadh, Cape Town and Geneva. These stakeholder groups included industry stalwarts, representatives from the government and leading organizations, and reputed academicians to ensure that all perspectives were captured during these conversations. These discussions aimed to:

- Understand the importance of digital skills and implications owing to digital skill gaps
- Understand the root causes of digital skill gaps in different segments of the youth
- Discuss challenges in building digital skills at academic and organizational levels and country-wide
- Formulate concrete considerations to explore and tackle these challenges for making the youth digitally skilled

ENABLERS OF SUCCESS

The success of any intervention is underpinned during its design phase. Accordingly, the design of any capability development initiative to promote digital literacy among the youth needs to take place in consultation with relevant stakeholders at both macro and micro levels. Identification of these stakeholders, therefore, becomes paramount in establishing a solid foundation for developing and implementing sustainable and effective upskilling interventions.

We identified critical stakeholder groups across **three levels – Academic Level, Organizational Level,** and **National Level.** Collaboratively, these stakeholders can initiate targeted interventions aimed at bridging the skills gaps among the youth.

Academic Level

This group primarily encompasses educational institutions, research centers, and collaborative efforts within the academic sphere. Engaging academic stakeholders in digital literacy programs entails fostering partnerships with universities, research institutions, and educational organizations

Organizational Level

This level focuses on engaging various types of organizations, including private businesses, not-for-profit organizations, industry associations, and public sector entities, to contribute to digital literacy initiatives. Involving organizational stakeholders, including employed youth, in digital literacy programs fosters a dynamic synergy between academia, industry, and societal needs

National Level

This level largely points to the central government of a country but could also include international collaborations and partnerships with other entities (academic, non-profit collectives, or organizational)

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INSIGHTS FROM SURVEY: **UNDERSTANDING YOUTH PERSPECTIVES**

INSIGHTS FROM DIGITAL SKILLS SURVEY

The main purpose of the survey was to identify the perception of digital skills among the youth of 13 DCO Member States. Across the **3 skill categories - Essential, Career-Related,** and **Digital Mindset Skills -** the most and least proficient skills that emerged were:

	Essential Digital Skills	**Career-Related Digital Skills**	**Digital Mindset Skills**
MOST PROFICIENT	• Usage of digital devices like smartphones and computers (78%) • Usage of software application like (YouTube, Chrome, MS Office) (77%)	• Usage of tools like Excel, Tableau to analyze and present data (64%) • Project Management (42%)	• Usage of collaboration tools like Zoom, Teams (74%) • Adoption with the changes in technologies (61%)
LEAST PROFICIENT	• Cybersecurity (44%) • Understanding the impact of digital technology on environment (58%)	• Designing user interface UI, UX (33%) • Using the advance security measures (36%)	• Analyzing complex problems (52%)

Affinity and Awareness of Digital Skills Amongst Surveyed Youth

The survey findings reveal that most of the youth population across 13 DCO Member States are aligned on the importance of digital literacy.

83% of the youth surveyed (including 43% of employed youth) across 13 DCO Member States Strongly feel that it is critical to develop digital skills in the light of growing competitiveness in the job market

While the youth in most countries attest to the importance of digital skills, others lag significantly, indicating the need to aggressively drive awareness across segments. In countries like **Bahrain, Cyprus, Pakistan, Jordan,** and **Kuwait,** there is largely a **positive attitude towards digital skills,** with most participants highlighting that acquiring them is crucial. **Ghana and the Gambia** stand out with **nearly 100% of respondents** affirming the criticality of digital skills. **Djibouti appears to face challenges** on the perceived importance of digital skills with only 1 out of 4 respondents on average rating digital skills as 'important' or 'extremely important'. This could be owing to underlying factors such as lack of education or awareness of the importance of digital skills, and limited access to technology, among other factors.

Respondents in **Oman, Saudi Arabia, and Morocco** consider digital skills as moderately important suggesting the need to drive targeted initiatives to foster awareness. While 35% of Nigerian youth and 33% of Rwandan youth consider Emerging Technologies critical for the future, only an average of 11% state that they are highly proficient in using them effectively.

Application of Digital Skills: is our Youth Able to Translate Knowledge Into Practicable Skills?

While almost 65% of respondents on average believe they are proficient in essential digital skills such as using digital devices and basic software applications, the current **landscape of essential digital skills and readiness among youth varies significantly across different geographies.**

Proficiency in career- related digital skills is significantly low with only 27% of respondents on average stating that they can apply such skills in practice, indicating that the current level of proficiency might be insufficient to meet the existing and future job demands. Employed youth display higher perceived proficiency in comparison to students and unemployed segments across essential skills, which could be attributed to skill development on the job.

Country	Data Analytics and Data Visualization	Project Management	Digital and Social Media Marketing	Information and Cyber Security	Website and Application Development	Digital Design (UX/UI)	Artificial Intelligence	Internet of Things	Cloud Compauting	Robotics	Blockchain
Bahrain	85%	77%	72%	74%	77%	72%	29%	22%	23%	23%	29%
Cyprus	73%	71%	72%	71%	77%	67%	31%	25%	22%	23%	21%
Djibouti	33%	12%	9%	9%	21%	23%	3%	3%	3%	4%	4%
The Gambia	47%	9%	8%	9%	17%	21%	1%	4%	0%	0%	0%
Ghana	66%	41%	30%	26%	20%	23%	24%	17%	7%	3%	8%
Jordan	65%	37%	25%	28%	17%	16%	19%	12%	12%	7%	3%
Kuwait	74%	72%	68%	65%	56%	58%	8%	26%	16%	23%	22%
Morocco	64%	26%	21%	27%	20%	20%	17%	9%	5%	13%	1%
Nigeria	56%	42%	27%	33%	24%	30%	27%	10%	6%	2%	10%
Oman	61%	47%	36%	29%	28%	26%	25%	17%	12%	13%	2%
Pakistan	57%	45%	44%	42%	34%	37%	21%	15%	13%	11%	7%
Rwanda	83%	47%	36%	38%	25%	25%	21%	15%	7%	8%	4%
Saudi Arabia	51%	29%	22%	25%	26%	21%	17%	10%	8%	9%	2%

This **stark contrast highlights a clear digital divide,** underscoring the need for targeted efforts to bridge this gap. For instance, despite nearly 100% of the youth affirming the importance of digital skills in the Gambia, the perceived proficiency seems to be lower across essential, digital mindset and career-related skills. The low proficiency in digital skills in certain regions can be attributed to various factors, including **limited access to technology, lack of educational resources,** and **socioeconomic barriers.**

While a decent level of proficiency in essential digital skills is evident, it is limited to operating computer/smartphone, software (such as web browsers, Microsoft Office Suite, Google Workspace, etc.), and collaboration tools (such as Zoom, MS Teams, Online Drives, email applications, etc.). Beyond these skills, proficiency seems to reduce drastically.

Indeed, across the 3 skill categories identified in our framework, Digital Mindset skills yield the most favorable picture. 2 out of 3 respondents indicate a high-level of proficiency in digital mindset skills required to collaborate in a virtual setup and continuously adapt to and learn new skills, indicating an inclination towards embracing new ways of working and demonstrating learning agility. **92% are comfortable in navigating in changing environments indicating an inclination towards embracing new ways of working and demonstrating learning agility.** In terms of Critical Thinking, **89% of respondents stated that they are comfortable dealing with complex problems embedding creativity and a solution-oriented mindset while approaching work.**

However, there is a low familiarity with these technologies. Even those who consider these technologies important have a low affinity towards them. For instance, **only 18% of the participants feel confident in handling Digital and Social Media Marketing tools and initiatives,** which happens to be the most important digital skill for all participants. Even in the case of Emerging Technologies, which has been rated as the second most important technology, the ability to apply theoretical knowledge to real-world problems remains relatively low, except for AI to some extent. Identifying digital threats, such as cybersecurity and online scams, has been rated as a skill that the youth feel least proficient in.

In career-oriented digital technologies, the survey points towards a **major gap in career-related digital skills,** with low levels of proficiency in 70% of them. Office and related tools have the highest familiarity. It was a concerning observation that our participants seemed to be unaware of most emerging technologies beyond AI. **Less than 50% of the youth is aware of emerging technologies** (like IoT, Blockchain, Cloud Computing, and Robotics).

In summary, these insights highlight the need for **building awareness on the importance of digital skills** and **providing extensive training** to boost overall as well as specific career-oriented digital skills.

Attitudes Toward Proactive Improvement of Digital Skills

While a significant disparity in digital skills exists in youth, they indeed display a **positive approach toward enhancing their skills.** In terms of upskilling, online courses and reading are among the top methods of upskilling adopted by the youth, which indicates that individuals prioritize flexible

and self-directed learning approaches to skill building. While on-the-job training is primarily preferred by the employed youth population, unemployed youth prefer developing skills through podcasts. It is noteworthy that only 30% of the respondents are aware of the training programs sponsored nationally, by state institutions, their employer or other leading organizations, highlighting the need for awareness campaigns at across levels.

While the youth display the intent to upskill through multiple modes, awareness of the upskilling opportunities available to them is alarmingly low, with the awareness of **country-sponsored programs being 20%,** and **employer-sponsored programs being only 7%.** On an average, only **3% of total respondents from the Gambia, Djibouti, Jordan, and Saudi Arabia** are aware of available training programs. This calls for urgent action to drive focused awareness initiatives specifically for these countries.

Additional Support Required for Digital Upskilling

Building Digital skills in Academic Curriculum:
Integrating digital skills into academic curricula requires a strategic allocation of resources. 1 out of 2 respondents believe that the curriculum at the academic level needs a revamp to incorporate practice-based digital skills courses. Additionally, there is an emphasis on capability building for faculty to facilitate effective knowledge transfer to students

Financial Support:
Financial support is paramount for enabling digital upskilling initiatives. This includes funding for scholarships, grants, or subsidized programs to make digital education accessible to a broader demographic.

Skilling Opportunities:
Providing learning and development opportunities for digital upskilling requires a commitment and allocation of resources. This involves investing in comprehensive training programs, online courses, and workshops tailored to the individuals' specific roles and career paths.

Respondents seek a combination of support measures to enhance their digital skills - Nearly 8 out of 10 respondents expect support in the form of learning and development opportunities including workshops, boot camps, access to learning technology platforms and improvements in digital infrastructure

5

INSIGHTS FROM ROUNDTABLE CONVERSATIONS: **UNDERSTANDING GLOBAL PERSPECTIVES**

We conducted roundtable conversations in Riyadh, Cape Town, and Geneva and invited academicians, and industry veterans to participate in the conversations. The objective of the roundtable was to employ multiple lenses and perspectives to reflect on the current state of digital literacy among the youth, and collectively conclude a set of actionable considerations for accelerating the skill development in youth.

Challenges in Building a Digital Economy

Prominent roadblocks exist from both a learning (supply of agile talent) and an infrastructural (digital adoption and ecosystem creation) perspective that hinder the uptake and implementation of digital skills by the youth.

Internal Challenges
(Lack of skilled talent)

- Limited academic preparation for digital skills
- Inadequate development opportunities at an entry level
- Lack of collaborative efforts between employers and educational institutions
- Limited interest in pursuing digital careers and lack of awareness among students on digital career opportunities

External Challenges
(Lack of supportive ecosystems)

- Slow pace in adoption of digital technologies
- ICT sector in the DCO Member States is still catching up in comparison to other regions
- The entrepreneurship ecosystem not conducive owing to stringent regulations, limited access to funding, and unclear legal frameworks
- The local digital skills market commands high salaries, posing a potential obstacle for startups

Areas of Focus for Digital Skill Development

Consensus reached during the roundtable conversations zeroed in on 3 critical focus areas to drive digital skilling interventions:

Digital Infrastructure Investment:
Prioritizing the establishment of a world-class digital infrastructure to enhance citizens' overall quality of life and provide efficient digital platforms.

Digital Transformation Policies:
Formulating strategic frameworks, guidelines, and programs to keep pace with the rapid advancements in digital technology, fostering efficiency and innovation throughout the nation.

Digital Upskilling:
Elevating the digital skills in students, employees, entrepreneurs and specifically women, to enhance professional development opportunities. This underscores the importance of cultivating essential skills in the youth and workforce, covering areas such as Cybersecurity, Internet of Things, Artificial Intelligence, Programming, Networking, Business Analysis, Cloud Computing, Information Security, Application Development, and Fundamental Digital Technology Usage.

Considerations From Participants

The roundtable conversations we hosted yielded a plethora of rich insights that emerged through an engaging conversation between participants (academicians, industry stalwarts and subject matter experts). While participants were largely aligned with the criticality of digital literacy amongst the youth and the insights from our survey, the most concrete, real-world considerations were put forward by the participants themselves. These considerations can be categorized into the following:

Academic Level

- Research-driven insights for effective curriculum development
- Specialized expertise in pedagogy and technology
- Establishment of training programs that align with the latest advancements in digital skills and capabilities
- E-learning and byte-sized, self- paced learning
- Career counselling
- Train the trainer programs
- Incentivize non-profit organizations through scholarships and PhD programs
- Social media interactive learning programs

Organizational Level

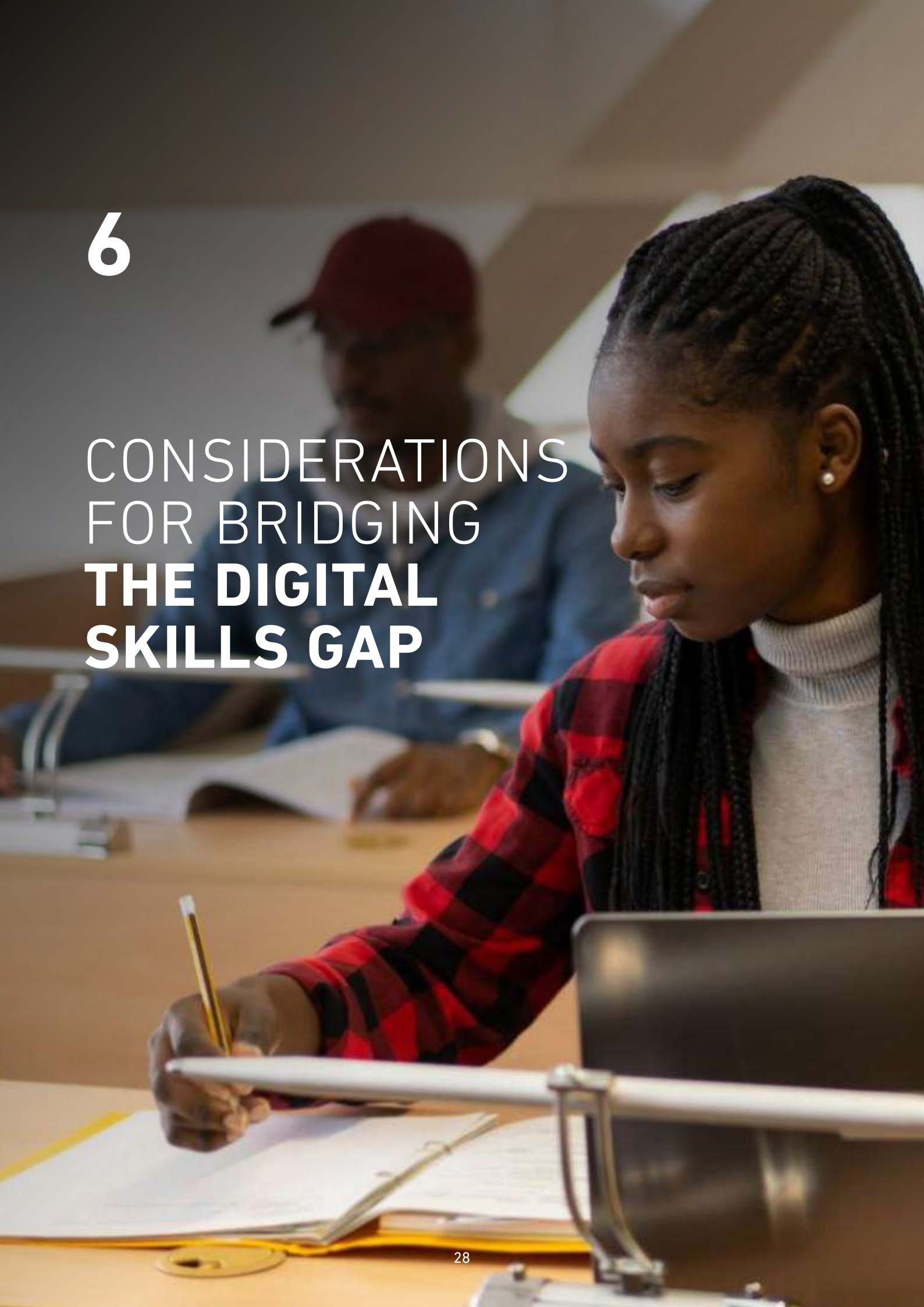
- Development of targeted training programs aligned with industry needs
- Mentorship and social learning opportunities
- Establishment of internship programs to bridge the gap between theoretical knowledge and practical application
- Communications and monitoring
- Vocational training
- Eminence and SME-empanelled events
- Public and private sector sponsored seminars and conferences

National Level

- Strategic planning
- Infrastructural development
- Grants and sponsorships
- Centralized coordination systems for large-scale implementations of interventions
- Vast array of public records and data to contextualise interventions
- Awareness campaigns
- Centralized governance and administration
- Free digital skills learning courses
- Digital skills exchange programs

6

CONSIDERATIONS FOR BRIDGING **THE DIGITAL SKILLS GAP**



LEARNING FROM SUCCESSES: CASE STUDIES ON EFFECTIVE DIGITAL LITERACY INITIATIVES

While we attempt to identify and resolve the various challenges that the youth face today in improving their digital literacy skill levels, it is equally important to take stock of the various success stories so that we may learn what has worked and draw inspiration.

Success Stories From the DCO Member States

Governments are placing a high priority on digital transformation as an integral component of their national vision for the future. From strategic visions and mass implementation to innovative solutions to make technology more affordable, these interventions prove that digital skill development and workforce transformation is a priority for economies across the globe.

Cyprus – National Digital Strategy 2020-2025:

is a policy implemented and led by the Deputy Ministry of Research, Innovation and Digital Policy (DMRID) focusing on four strategic objectives, emphasizing the importance of enhancing digital skills among the youth, fostering a resilient and vibrant digital economy, and cultivating a digitally-enabled society that is inclusive, open and democratic.

Kuwait Vision 2035:

aims to transform the country into a secure digital society, increasing the operational efficiency of government departments, and adopting smart and digital technologies to innovate services.

Rwanda Vision 2050:

intends to maximize productivity in communities by investing into building future digital capabilities, advancing digital skills development and strengthening the population's technology and innovation capabilities.

Saudi Vision 2030:

talks about diversifying the economy, developing digital services platforms across government entities, and increasing the digital skills of the workforce.

To further these, the respective governments are incentivizing the uptake of Digital Skills among youth with a variety of well-founded programs and initiatives. To name a few:

In **Bahrain, over 150 fresh graduates were employed by the Information and Government Authority** to gain a comprehensive understanding of government entity workflows and the knowledge required to advance in various sectors or entities. This initiative aims to reduce government spending and cut unnecessary external IT contracts while creating job opportunities for qualified Bahraini individuals.

Cyprus implemented four initiatives, a lifelong and basic digital skills program with the goal of equipping individuals to be able to use government services on digital devices. The second initiative revolves around supporting businesses with tools and skill development programs. Finally, launching a Next STEM Generation program at universities and upskilling the private sector employed and unemployed workforce are key focal points of the policy.

In **Rwanda,** a program was developed to run from 2021 to 2025, with goal of enhancing the youths' digital skills by partnering with employment service centers, and business incubation centers. It also intends to incentivize employers to employ ICT and technical graduates. This is implemented in collaboration with the African Union (AU), the International Telecommunication Union (ITU) and the International Labour Organization (ILO).

In the **Saudi** government authority, there is a **national award for governmental entities and individuals** who innovate and produce new solutions.

Success Stories Across the Globe

Kenya's Digital Literacy Program (DLP)

This was initiated by the Kenyan Government to equip pupils with relevant skills needed in today's digital world by empowering education, innovation, and job creation through technology. Providing proper needs assessments, ensuring infrastructure availability, conducting pilot studies with selected schools, and identifying the right teachers for the training were instrumental steps in making DLP a success.

Goodwill's Digital Accelerator Program (USA)

This is a Google-funded initiative focused on bridging the skills gap for access to quality jobs in the US. Goodwill tailors its approach to meet learners at their current skill levels, offering a diverse range of hands-on training opportunities. These encompass foundational digital awareness and navigation skills, progressing to specialized training for Google, and other Career Certificates available on platforms like Coursera. These professional certificates empower individuals with the skills necessary for sought-after entry-level careers in fields such as IT support, project management, data analytics, and cybersecurity.

Digital Skills Partnership (UK)

This partnership is uniting sectors to foster a leading and inclusive digital economy. The government collaborates with Local Enterprise Partnerships (LEPs) and Combined Authorities (CAs) to establish Local Digital Skills Partnerships (Local DSPs) throughout England. This collaborative effort aims to address local digital skills challenges and foster the development of vibrant and inclusive regional economies.

Digitruck Program (France, Belgium, and others)

With an aim to improve livelihood opportunities in vulnerable and remote communities, Close the Gap, a Belgium-based NGO started the Digitruck Program to bridge the digital divide with Mobile ICT Classrooms that are completely self- sustainable. Huawei and WeTechCare collaborated to enable the creation of this mobile IT classroom. WeTechCare's goal is to streamline the provision, execution, and engagement of digital inclusion communities in both France and Belgium.

CONSIDERATIONS DEVISED BY THE DCO: BRINGING IT ALL TOGETHER

We have exhaustively considered multiple inputs including secondary research, survey insights, inputs from participants of the roundtable conversations, and case studies to propose a set of considerations for the DCO Member States.

Academic (Educational) Considerations

Competitive Curricula and Assessments on Digital Skills Building:

Institutes must infuse application-based pedagogy on digital components into academic curricula with flexible course delivery options, such as evening classes, weekend sessions, or online courses to ensure students acquire proficiency in contemporary technologies. Regularly assessing learner needs and aligning the same with market requirements is key to ensuring an up-to- date curriculum that is both relevant and suitable for the learner. Frequent assessments should also be conducted to identify patterns of skill deficiencies and pre-empt lags from a market standpoint. Gamified assessments, hackathons, case competitions that lead to job placements, and National Tech Olympiads (focusing on supporting prototype development, entrepreneurship, and sustainability) are all potential channels to assess the working digital skill proficiencies and critical thinking abilities of the youth. These must be supplemented with the establishment of feedback mechanisms, wherein institutes must implement regular feedback loops to gather student insights on the efficacy of digital skill programs, ensuring continuous enhancement.

Exchange programs and industry certifications:

Fostering collaborative learning through global student exchange programs with leading academic institutions can provide students with the right exposure to diverse perspectives. Augmenting academic curricula with industry- certified programs can enhance applicability of digital skills. It is imperative to cultivate a continuous learning culture and encourage students to pursue additional certifications independently for relevant, real-world applications. Creating synergy between academia and industry can empower students with practical, in-demand digital skills, ensuring their readiness for the evolving professional landscape.

Introducing New Learning Modalities in Academia:

Bite-sized learning modules have been proven to be more effective than conventional textbook learning as it promotes skill development on the go, keeping pace with the learner's individual requirements. By adopting digital platforms, online courses, and interactive learning modules, these institutions can provide students with accessible and flexible avenues to develop essential digital skills. This shift towards e-learning not only enhances the quality of education but also ensures inclusivity by reaching a broader audience, including those in remote areas.

Dedicated Guidance Programs for Careers in Data and Technology:

Dedicated guidance programs for careers in data and technology are instrumental in building digital skills for the youth by providing targeted and informed pathways to navigate the complex landscape of these rapidly evolving fields. These programs offer personalized mentorship, counselling, and resources to help young individuals identify their interests and aptitudes within the expansive realm of data and technology. By offering insights into various career trajectories, industry trends, and skill requirements, these guidance programs assist the youth in making informed decisions about their educational and professional pursuits. Alumni can be onboarded as mentors in the process.

Train the Trainer:

By equipping faculty with advanced digital skills and up-to-date teaching methodologies, train the trainer programs create a ripple effect, allowing faculty to effectively transfer this knowledge to a larger student population. These initiatives not only ensure that faculty are well-versed in the latest technologies and digital trends but also empower them to cultivate a dynamic and engaging learning environment. Moreover, as digital landscapes evolve, these programs enable faculty to adapt and continuously update their skill sets, ensuring that the youth receive relevant and future-oriented education.

> "You cannot expect teachers who do not understand what to teach, **to teach students."**
>
> ~ Expert Quote from Roundtable Conversations

Organizational (Professional) Considerations

Create opportunities for On-the-Job Learning:

It has been established that 70% of learning occurs on the job, emphasizing the need for on-the job trainings within organizations for the purpose of upskilling. Implementing mentorship initiatives, where experienced professionals guide and share knowledge with new employees, can significantly enhance digital capabilities. Additionally, incorporating hands-on projects and job rotations allows employees to apply and reinforce digital skills in practical scenarios. Continuous learning opportunities, such as workshops and seminars, focused on emerging technologies, can keep employees updated. Furthermore, leveraging online platforms and resources for self-paced learning complements on-the-job training, ensuring employees have access to relevant digital skill development resources.

Structured and Well-Communicated Interventions:

A structured approach helps define clear learning objectives and outcomes. It ensures that skilling interventions align with the overall goals and strategy of the organization, promoting focused and purposeful learning experiences. Determining a workflow and governance mechanism at the outset of a capability development program enables organizations to monitor and calculate the return on training investments made in terms of improved productivity and quality of work. However, communicating these interventions at a grassroots level in a manner that enables maximum uptake is also integral to their success.

Peer Learning:

Organizations can foster digital skill literacy through a strategic emphasis on peer learning, creating an environment where employees learn from and with each other.

> "Learning by yourself can be discouraging. Having another person to collaborate with to solve a problem, **you learn more skills."**
>
> ~ Expert Quote from Roundtable Conversations

Establishing platforms, such as online forums, workshops, Employee Resource Groups (ERGs) or collaborative projects, facilitates this peer-to-peer learning process. By leveraging the diverse skill sets within the organization, employees can gain practical insights, troubleshoot challenges collectively, and share best practices. Peer learning not only cultivates a culture of continuous improvement but also ensures that digital skills are disseminated efficiently throughout the workforce.

Mentorship and Shadowing:

Organizations can champion the development of digital skills by placing a strategic emphasis on mentorship programs tailored to train and upskill younger candidates. Establishing mentorship initiatives within the workplace creates a structured framework for experienced professionals to share their insights, guidance, and industry knowledge with younger counterparts. To complement mentorship, organizations can invest in targeted digital upskilling programs specifically designed for younger talent, offering courses, workshops, and resources that align with the latest digital trends. This approach not only equips younger candidates with the technical proficiencies needed in the digital landscape but also positions them for leadership roles, driving innovation within the organization.

Partnership with e-Learning Content Providers and Institutes:

In today's dynamic business landscape, organizations can strategically bridge digital skill gaps by fostering partnerships with world-class e-learning content providers and academic institutions. Offering employees access to renowned digital learning platforms like LinkedIn Learning, edX, Coursera, Moodle, etc., provides diverse opportunities for upskilling. Organizations can further enhance employee development by sponsoring executive or distance education programs through institutes that offer recognized digital skills certifications. This collaborative approach ensures that employees have convenient access to high-quality learning resources, empowering them to stay abreast of the latest industry trends and technological advancements, thereby contributing to the organization's overall digital readiness and competitiveness.

Provide exposure opportunities:

To bridge digital skill gaps effectively, organizations can proactively provide exposure opportunities for their employees. Sponsoring attendance at external conferences, seminars, and workshops focused on digital skills is a strategic initiative that organizations can undertake. Such exposure opportunities not only enable employees to stay informed about industry trends but also fosters awareness of relevant digital skills. By facilitating participation in such events, organizations empower their workforce with firsthand insights, networking opportunities, and a deeper understanding of the evolving digital landscape.

Vocational Skills Training:

Organizations can empower young individuals with no prior digital knowledge but the willingness and the right growth mindset for learning, to enhance their economic strength in the digital landscape through targeted and accessible digital skills programs.

> **"...removing those (educational) barriers of entry have been critical to ensure access for lower economy areas.** Recruit young people between the ages of 18 to 25. They don't have to have prior knowledge on software or coding. But they should be able to pass a particular aptitude test."
>
> ~ Expert Quote from Roundtable Conversations

Starting with foundational training in basic digital literacy, organizations can gradually introduce concepts like computer usage, internet navigation, and software applications. Customized learning paths, continuous support mechanisms, and the cultivation of soft skills complement technical training, preparing young individuals not just with digital expertise but also with the versatility and adaptability required in the contemporary digital workforce. By investing in these comprehensive approaches, organizations contribute significantly to building a digitally proficient and economically resilient generation.

Continuous Learning Culture:

Fostering a culture of perpetual learning and encouraging employees to consistently enhance their skills, is vital to remain at the forefront of evolving digital landscapes. Employees should be motivated and rewarded for participating in and completing certification programs, reinforcing a culture of recognition for digital skill building. Organizations must also employ performance metrics related to digital skills, and regularly evaluate and measure employee proficiency. They can then use this data to identify areas for improvement and adjust upskilling programs accordingly.

National (Country-wide) Considerations

National Digital Transformations Strategy:

Participants stressed the importance of countries having a national digital transformation strategy. A clear and up-to-date strategy helps governments rally their disparate agencies behind a singular agenda and can help re-invest funds into digital initiatives. The strategy needs to ultimately underpin a favorable digital advancement agenda that is sustainable, inclusive, and agile. The foundation of such a strategy can only be established in parallel with nationwide digital skills assessments to identify training needs in the employed workforce, in collaboration with research institutes.

Financial Assistance and Affordable Technology:

Currently, there seems to be a prominent divide between urban and rural, the affluent and the economically weak and those educated in private institutions and those who underwent public schooling, with the latter being significantly disadvantaged in terms of their awareness and proficiency of even the most basic digital skills. This divide needs to be bridged to prevent lopsided economic development.

> **"... can we really say that those who studied in the public schools were taught how to be digitally included?** Governments are still following antiquated decrees that deem exposure to technology and devices at a young age as harmful."
>
> ~ Expert Quote from Roundtable Conversations

Governments should set up subsidies, grants, and scholarships to ensure financial inclusion for all, including educators, within the scope of digital literacy. Connectivity to the Internet should be made affordable, including appropriate tax exemptions for any campaigns launched by for-profit or non-profit entities to further this cause.

Infrastructural Improvements:

Reliable and robust infrastructure, including accessible electricity, high-speed internet, and technology-equipped learning spaces, lays the foundation for effective digital skills development. In many developing regions, inadequate infrastructure poses a significant barrier to accessing educational resources, online training programs, and real-world applications of digital skills. Improved infrastructure not only ensures connectivity but also enhances the overall learning experience, allowing individuals in these economies to access up-to-date information, and online courses, and collaborate on digital platforms.

Centrally Administered Learning Ecosystems:

In many developing economies, fragmented and disparate educational initiatives often result in inefficiencies and gaps in digital skills training. A centralized learning ecosystem facilitates the implementation of comprehensive and up-to-date digital skill programs that address the evolving needs of the workforce. Additionally, a centralized approach enables efficient monitoring and evaluation, ensuring that learning initiatives align with national development goals. IT hubs and centers, dedicated talent marketplaces for the youth, and youth development programs (combining technical skills as well as soft skills on mental health and entrepreneurship) are critical components for setting up these systems.

Entrepreneurial Support:

Governments need to establish a robust platform for entrepreneurs, providing unparalleled access to industry Subject Matter Experts (SMEs) to act as mentors and a rich repository of learning content meticulously designed to cultivate the required digital skills. Integrating digital skills development within entrepreneurship incubators and accelerators can offer not only mentorship and networking opportunities but also structured training in digital tools and technologies relevant to specific industries. Government-backed digital consultation services where entrepreneurs can seek advice and guidance on integrating digital technologies into their business models are also becoming increasingly popular and can include assistance with website development, digital marketing strategies, and technology adoption.

Going Above and Beyond: Innovative Considerations for Ensuring Holistic Skilling Success

Intra and Inter Governmental Partnerships:

Intra and inter-governmental partnerships are instrumental in managing digital skill gaps in youth. Inter-government initiatives can enable the creation of cross-border training opportunities, exposing individuals to diverse perspectives and skills, whereas intra-governmental initiatives enable the alignment of policies and strategies, creating a cohesive framework for digital skill development. Additionally, partnerships within the government streamline communication channels, allowing for efficient implementation of initiatives and the sharing of best practices, ultimately contributing to a more synchronized and effective approach to addressing digital skill gaps at the national level.

Digital Mindset Building:

Countries can instil a digital mindset in the youth through comprehensive educational reforms that integrate digital literacy into curricula from an early age. Our survey insights align with the developmental ease of building Digital Mindset skills in the youth. Almost all participants expressed comfort in adapting to changing environment, showcasing a predisposition to embrace novel work approaches and a capacity for agile learning. Establishing partnerships with industry professionals and leveraging technology in teaching methodologies immerses students in the digital realm. Encouraging participation in coding clubs, hackathons, and STEM programs stimulates proactive engagement with technology, shaping a generation that views digital skills as essential tools for innovation, problem-solving, and future success.

Community Involvement:

Community involvement in digital literacy programs for the youth can be cultivated by establishing collaborative partnerships with local organizations, businesses, and community leaders. Engaging parents and guardians through informational sessions creates a supportive network for students. Hosting community workshops, where the youth showcase their digital projects, not only builds confidence but also demonstrates the practical impact of digital literacy. Moreover, incorporating community-specific examples and challenges in the curriculum ensures relevance, making digital literacy programs more accessible and responsive to the unique needs of the local community.

Awareness Campaigns:

With only 10% of our survey respondents, on average, being aware of initiatives sponsored by the government, employers, and other institutes for digital capability upskilling, it is evident that there is a lack of awareness among the youth. Our roundtable participants emphasized the need to spearhead awareness campaigns that underline the significance of digital proficiency. These campaigns should also aim to socialize the available upskilling resources, ensuring that the youth are informed about the opportunities for enhancing their digital capabilities.

7

CONCLUDING REMARKS: **MAKING AN IMPACT**

MAKING AN IMPACT

The influence of digital technology extends across every facet of our lives, presenting boundless potential for positive transformation. Technology and innovation are reshaping every industry, and the process of digital transformation has emerged as a crucial catalyst for economic growth and social advancement worldwide. This is particularly significant for developing regions, that have the chance to overcome historical challenges and position themselves as globally competitive leaders of the future.

Despite the pervasive nature of digital technology, achieving equal opportunities in the digital economy remains a distant goal. Stark inequalities among nations are glaringly evident, stemming from limited access to education, economic disparities, digital infrastructure gaps, and gender disparities, among other factors. The digital landscape is marked by these disparities, posing a risk to the economic progression of these countries.

Digital skills literacy among the youth plays a pivotal role in fostering economic growth and development. In an increasingly digitalized world, proficiency in digital skills equips young individuals with the tools and knowledge needed to navigate and contribute to the modern economy. As technology continues to reshape industries, digital literacy enables youth to harness innovation, creating a workforce that is adaptable and responsive to evolving market demands. Possessing digital skills not only enhances employability but also empowers young entrepreneurs to establish and grow their ventures. Moreover, a digitally literate youth population is essential for leveraging emerging opportunities in sectors such as information technology, e-commerce, and digital services, contributing to overall economic productivity and competitiveness on a global scale. By investing in the digital literacy of the youth, societies can ensure that the upcoming generation is well-equipped to drive innovation, participate in the digital economy, and catalyse sustained economic growth.

Collaboration between governments (both national and international), academia, and professional organizations is crucial for promoting digital literacy among the youth for several reasons. Academia plays a pivotal role in developing and disseminating cutting-edge digital literacy content and teaching methodologies. Governments can provide the necessary policy frameworks and resources to ensure that digital literacy is integrated into educational curricula.

Professional organizations can present industry insights, ensuring that youths are equipped with skills relevant to the evolving job market. Additionally, international collaboration allows for the exchange of best practices and a global perspective on digital literacy. This multifaceted collaboration ensures a holistic and well-rounded approach, addressing the diverse needs of the youth and preparing them for the challenges and opportunities presented by the digital age.

Another crucial element in confronting the lack of large-scale digital literacy is inclusivity. It is increasingly imperative for stakeholders in the digital economy to unite and formulate a more inclusive vision for our collective digital economic future.

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