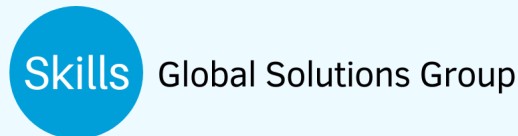




SKILLS4DEV



DECEMBER 2023 | ISSUE 8

The Vital Role of Digital Skills

in Building an Inclusive, Smart, Safe, and Sustainable Digital Economy

Dear Skills community,

We are delighted to bring you the latest issue of the *Skills4Dev Knowledge Digest*! In this month's edition, we dive into the topic of **Digital Skills**, exploring their critical role in an Inclusive, Smart, Safe, and Sustainable Digital Economy.

We aim for this edition to become the go-to place for those interested in learning about digital skills and their current importance. This one-stop-shop presents a compilation of resources that highlight the broad definition of digital skills, and their role in the Digital Economy concept. With the support of World Bank experts, we have curated a collection of global or regional resources (produced between 2020 and 2023) and put together Skills GSG services that we hope will help your work. Our timing is crucial as it aligns perfectly with the ongoing development of the Global Challenge Program (GCP): **Digital Skills for Jobs**, to which the World Bank teams specializing in Digital Development, EdTech, and Skills and Workforce Development actively contribute. At the end of this bulletin, you will also find a selection of Digital Skills Assessment tools for your reference.

We would like to hear from you! Please send us your ideas, suggestions, questions, or collaboration opportunities at skillsgsg@worldbankgroup.org. Learn more about what the GSG can do for you at the end of this digest.

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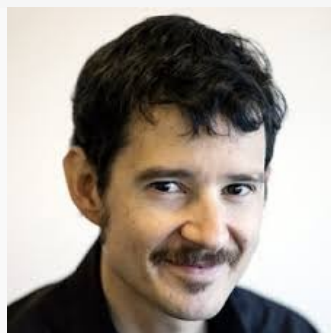
EDITORIAL

[The Digital economy currently accounts for 25% of the global economy](#); and is playing a crucial role in generating new avenues for growth and employment, which are essential drivers for our collective mission *to end extreme poverty and boost shared prosperity on a livable planet*. The Digital Economy requires today's workforce to have, at a minimum, foundational (or basic) digital skills; with a significant share of jobs requiring intermediate, advanced, or specialized digital skills. The referenced reports highlight a significant 24% increase in US online job postings for digital roles between 2018 and 2021, with emphasis on advanced and specialized digital skills. Notably, according to [OECD research](#), there has been a remarkable surge in demand, including a 116% increase for data engineers, 72% for computer scientists, 63% for data scientists, and 55% for digital marketing specialists (the latter falling within the intermediate digital skills competency area). During the last decade, the Internet has boosted opportunities for the Global South to participate in the market of digital services, but as multinationals race to adopt artificial intelligence (AI), many of the digital service jobs outsourced to the Global South may be impacted by AI-enabled tools largely developed [in the Global North](#).

Our featured publications delve into the various concepts associated with and the framework needed to develop and consolidate digital skills. Maximizing return on investment in digital skills acquisition involves implementing effective strategies, such as identifying the appropriate target beneficiaries (students, civil servants, teachers, youth, unemployed individuals, etc.) and determining the specific digital skills they should acquire. This approach optimizes their human capital potential within a specific context. The publication list offers relevant resources for practitioners, project managers, and teams in designing and costing digital skills components for their projects. In this bulletin, we aim to spotlight **The World Bank's Digital Skills Country Action Plan: The Who, What, and How** ([Part 1](#) and [Part 2](#)). This comprehensive framework facilitates the development of digital skills among young people through coordinated strategies involving relevant ministries and educational institutions. Additional featured publications highlight the transformative efforts in secondary and tertiary education, and Technical and Vocational Education and Training (TVET) programs, emphasizing the pivotal role of EdTech providers in enhancing professional education pathways within Science, Technology, Engineering, and Mathematics

(STEM). Lastly, establishing high-speed broadband connectivity between academic institutions globally is crucial for effectively implementing academic reforms and accessing relevant learning content in a cost-effective manner. In this regard, the feasibility study conducted to connect all [African Universities](#) to high-speed broadband holds significance not only for the region but also for other countries and areas seeking to enhance their connectivity.

What's brewing in the near-term future? While the attached publications provide a solid introduction to Digital Skills, there is still a need to further explore and research emerging areas of digital skills that are in high demand. These include the significance of digital skills in labor markets for Women in Tech, Cybersecurity, Climate Change (encompassing topics like Cloud computing, green data center construction, and the design of Digital public infrastructure utilizing shared, sustainable services and solutions), as well as [Artificial Intelligence](#). Moreover, these areas can also be combined to explore topics such as Women in AI, AI-powered Cybersecurity, or Energy-Efficient AI. The World Bank is actively fostering dialogue around these topics through events such as the [Global Cybersecurity summit in Ghana; Dubai's COP28](#), the [AI for safety summit in the UK](#). Furthermore, the World Bank is actively raising awareness about the critical shortage of advanced digital skills, particularly in high-demand areas like cybersecurity. Globally, the shortage of cybersecurity experts alone amounts to [4.2 million](#). There is a critical need to develop digital skills expertise, [particularly in the Global South](#), to transform traditional sectors into the digital economy.



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FEATURED WORKS ON DIGITAL SKILLS



[Skills for the Digital Transition. Assessing Recent Trends Using Big Data](#)

OECD | Report | 2022 |
Global

This report presents the **most recent trends in the labor market demand for digital skills**. The report analyses data collected from millions of job postings published online in Belgium, Canada, France, Germany, Italy, the Netherlands, the United Kingdom, the United States, Singapore, and Spain.



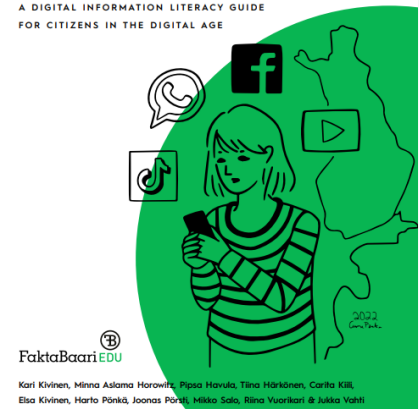
[Digitalization and Digital Skills Gaps in Africa](#)

Development Policy Research Unit. Africa Growth Initiative. Brookings. | Report | 2023 |
Africa

This paper focuses on the following key questions: (i) What is the **level of digitization in Africa**? (ii) To what extent is the level of digitization in Africa ahead or behind that of other regions? (iii) **How can we measure digital skills' demand, supply, and the skills gap?**

[Digital Information Literacy Guide](#)

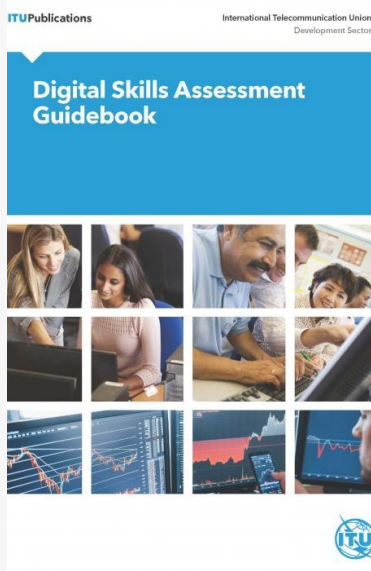
A DIGITAL INFORMATION LITERACY GUIDE
FOR CITIZENS IN THE DIGITAL AGE



[Digital Information Literacy Guide. A digital information literacy guide for citizens in the digital age](#)

Faktabaari EDU (Finland) |
Report | 2022 | Global

This guide includes 15 texts from 10 Finnish experts. Overall, the guide answers questions such as, what is **digital information literacy**, what does it mean to be digitally competent today, or what is Digipower in practice, among others.



Digital Skills Assessment Guidebook

International
Telecommunication Union (ITU)
|
Guidebook | 2020 |
Global

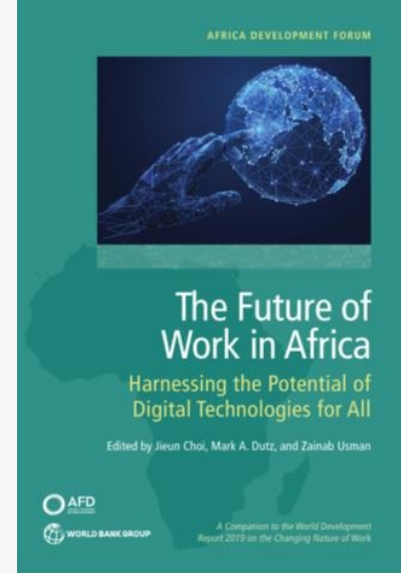
This guide is a **comprehensive, practical step-by-step tool for national digital skills assessments**. It can be used to determine the existing supply of a digitally skilled cohort at a national level, to assess skills demand from industry and other sectors, to identify skills gaps, and to develop policies to address future digital skills requirements. This guidebook draws on, and complements, the [ITU Digital Skills Toolkit](#), published in 2018.



Digitalization and beyond: the effects of Covid-19 on post-pandemic educational policy and delivery in Europe

Oxford Academic | Policy-oriented Working Paper | 2022
| Europe

This paper analyzes **long-term post-pandemic COVID-19 responses articulated in the education sector**. This publication focuses on frameworks or assessments that are applied at a scale. The analysis identifies three preponderant areas of response: the **digitalization of the educational system**, educational inequalities, and teachers' development.

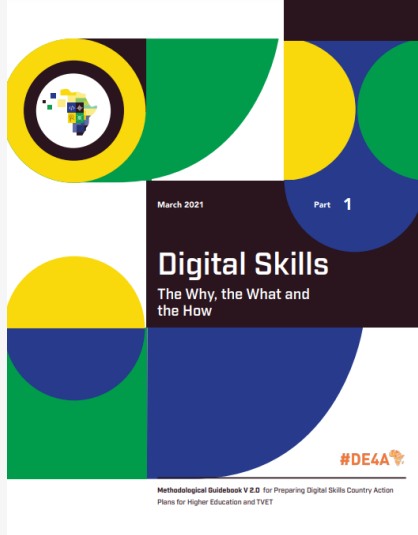


The Future of Work in Africa: Harnessing the Potential of Digital Technologies for All

Choi, J. et al. World Bank |
Report | 2020 | Sub-Saharan
Africa

This report highlights **how global trends, especially the adoption of digital technologies, may change the nature of work in Sub-Saharan Africa (SSA)** by creating new opportunities and challenges. It argues that, contrary to global fears of worker displacement by new technologies, **African countries can develop an inclusive future of work, with opportunities for lower-skilled workers**.

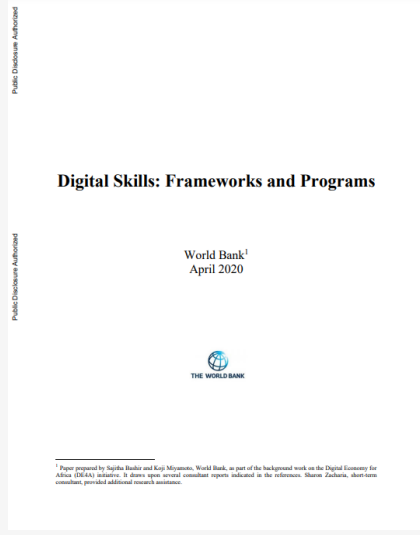
WHAT'S BREWING AT THE WBG?



[Digital Skills. The Why, the What and the How](#)

World Bank (team led by Sajitha Bashir and Samia Melhem) |
Guidebooks | 2021 |
Africa

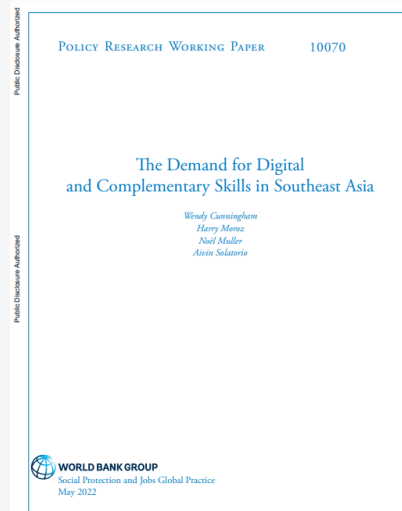
These **Methodological Guidebooks** ([Part 1](#); [Part 2](#)), prepared as part of [The Digital Economy for Africa \(DE4A\) Initiative](#), are a resource to help countries in Africa develop a **Digital Skills Country Action Plan** for higher education and TVET. While the focus is on developing digital skills proficiency at the intermediate and advanced levels, its approach can also be adapted to school education.



[Digital Skills: Frameworks and Programs](#)

Sajitha Bashir and Koji Miyamoto. World Bank. |
Working Paper | 2020 |
Global/Africa

This paper was prepared as a background paper for the World Bank's Digital Economy for Africa (DE4A) Initiative. It presents a **digital skills framework adapted to African contexts, based on a review of international frameworks**. It also highlights that digital skills are one of the five foundational pillars of a successful digital economy.



[The Demand for Digital and Complementary Skills in Southeast Asia](#)

Cunningham, Wendy et al. |
Working Paper | 2022 |
South Asia

This paper uses online job postings data from Malaysia to **identify the digital, cognitive, and socioemotional skills required for digital and non-digital occupations**. The skills profiles for each occupation are then merged with labor force survey data from Cambodia, Malaysia, Thailand, and Vietnam to sketch skills profiles of the workforces in these countries.

ADDITIONAL PUBLICATIONS ON DIGITAL SKILLS

[Feasibility Study to Connect all Africa Universities to High-speed Internet](#)

Melhem, S and Kelly, T and Knowledge Consulting Ltd | World Bank; DDP | Feasibility Study | 2021 | Africa

Broadband connectivity is a critical enabler for modernizing higher education institutions (HEIs) in their mission of teaching, research, and transforming their constituents to knowledgeable and ethical digital economy workforce. The higher education sector in Africa falls far behind the rest of the world in connection with global research and education networks.

[K-12 AI curricula - A mapping of government-endorsed AI curricula](#)

UNESCO | Report | 2010 | Global, regional, country, and local

This report **analyses existing AI curricula** with a specific focus on the curriculum content and learning outcomes, and delineates development and validation mechanisms, curriculum alignment, the preparation of learning tools and required environments, the suggested pedagogies, and the training of teachers.

[Innovation in Education: Improving Learning Outcomes through ICT technology](#)

Soumahoro, S. et al. World Bank | Brief | 2020 | Africa

This brief describes the **role of technology in primary and secondary education of sub-Saharan African countries**, which is seen as a viable complementary tool to improve learning outcomes in primary and secondary education. New research evidence from The Gambia suggests that a student-centered computer-assisted learning (CAL) program significantly improves student performance and teaching effectiveness in secondary schools.

[Promoting quality in TVET using technology. A practical guide](#)

UNEVOC-UNESCO | Practical Guide | 2020 | Global

This guide aims to **help TVET institutions to understand the organizational plans needed to build up their capacity to stimulate digital learning**. It also guides teachers that want to develop their competencies, improve their pedagogical strategies with use of technology, and learn from existing practice.

[Digital Skills in Pandemic Times: How State Policymakers Can Help Workers and Businesses Adapt in a Changing Economy](#)

ERIC | Policy-oriented Report | 2020 | Global

This report sets **10 immediately actionable recommendations that can be implemented by state policymakers seeking to improve digital skills**. This report was developed as a result of the COVID-19 pandemic.

[Digital Transformation in the Age of COVID-19: Building Resilience and Bridging Divides](#)

OECD | Policy-oriented Supplement | 2020 | Global

This supplement builds on the analysis in the [OECD Digital Economy Outlook 2020](#), which examines trends and analyses opportunities and policy options in the digital economy. This supplement discusses the **steps required to build resilience and bridge digital divides in a post-COVID world**, and focuses on frameworks or assessments applied at scale.

[Digital Skills Insights 2021](#)

ITU Publications | Report | 2021 | Global

This publication puts together **scholarly articles with a focus on the impact of digital transformation on capacity and skills development**. It seeks to provide a body of knowledge that will facilitate academic research and innovation exploring the linkages between emerging technologies and capacity development.

[The Digital Economy for Africa \(DE4A\) Initiative. All publications](#)

World Bank | Website. List of publications | Africa, Global

The Digital Economy Initiative for Africa (DE4A) aims to ensure that every individual, business, and government in Africa will be digitally enabled by 2030 in support of the African Union “Digital Transformation Strategy for Africa.” **Communication brochures:** (i) [Digital Skills Overview](#); (ii) [Policies for Digital Skills](#); (iii) [Technology for Teaching and Learning](#); (iv) [Connect to Affordable Highspeed Broadband](#); (v) [Leadership and Capacity for Digital Skills](#).

[Mapping of SDG Indicators in Learning Assessments](#)

UNESCO | Website | Global

This page presents a **repository of the most widespread learning assessments programs** with special focus on their potential ability to monitor Sustainable Development Goal (SDG) 4 progress. The information is based on a mapping of cognitive and non-cognitive questionnaires against SDG 4 indicators, and it is organized by listing all assessments with questions that could report against each specific indicator.

[The global digital skills gap: Current trends and future directions](#)

RAND Corporation | Policy-oriented Report | 2021 | Global

This study focuses on **what the digital skills workers need to meet current demands for skills** (specific ‘in-demand’ skillsets) but also those skill sets that will be needed to prepare for jobs of the future. It was produced as a response of the COVID-19 pandemic. This publication focuses on frameworks or assessments that are applied at a scale.

ASSESSMENT TOOLS

Digital skills frameworks have been developed by different stakeholders aiming to systematically identify the aspirational digital competencies that are necessary for individuals to succeed and tap into available digital training and employment opportunities. UNESCO-UNEVOC has curated a [comprehensive database of digital competence frameworks](#), which serves as a global reference for information on how digital competencies are being defined for citizens, learners and educators through the use of competence frameworks.

A notable example is the [Digital Competence Framework for Citizens \(DigComp 2.2\)](#), a reference framework developed by the Joint Research Centre (JRC) of the European Commission, with the help of more than 200 experts and stakeholders. The DigComp 2.2 framework includes 5 main competence areas: Information and Data Literacy; Communication and Collaboration; Digital Content Creation; Safety; and Problem Solving. The following list contains information about some **available tools to assess digital skills readiness of students and teachers based on the DigComp 2.2 competency framework**.

> [Digital Skills Accelerator](#): Self-reported | English

> [Europass](#): Self-reported & Task-based | Multiple Languages

- > [Ikanos](#): Task-based | Basque & Spanish
- > [Pix](#): Task based | English & French

SKILLS GSG - HELP DESK



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- > [May 2023 | Socioemotional Skills](#)
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- > [March 2023 | Career Guidance](#)
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Do you have any collaboration opportunities, want to share your recent publication, or have a skills-related question? Contact us at skillsgsg@worldbankgroup.org.

Key resources to support the skills-related work within the WB community (World Bank staff only)



[Skills GSG intranet site](#) (FURL: [skills/](#))



[Thematic Knowledge Digest Archive](#)



[Office Hours](#) with Skills Global Leads



[Events](#) (material and recordings)



[Consultant Roster](#)



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