



**communications &
digital technologies**

Department:
Communications & Digital Technologies
REPUBLIC OF SOUTH AFRICA



International
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**↑ DECENT JOBS
FOR YOUTH**



SKILLS DEMAND AND SUPPLY IN SOUTH AFRICA'S DIGITAL ECONOMY

**A focus on youth not in
employment, education or training**

EXECUTIVE SUMMARY

Setting the scene

The world of work has been changing drastically

The fourth industrial revolution (4IR) combined with the impact of the Covid-19 pandemic and related lockdown measures have fast-tracked digital transformation, changing the world of work.

The 4IR is expected to amount to a value of R1,4 trillion by 2026. It has been estimated that 230 million digital jobs will be created in Africa by 2030, which will result in about 650 million training opportunities. South Africa has the potential to generate 4,5 million new jobs across all industries due to productivity improvement, strategic policy implementation and the evolution of technology. Digital skills are at the centre of this new digital economy, requiring new ways of thinking about the world of work that were previously unpopular with corporate South Africa.

The potential of the digital economy is immense



What is the digital economy?

The digital economy refers to **all economic activities** that either **rely on digital input** or **use digital input** to make significant **enhancements**.

Digital input includes digital technology, digital infrastructure, digital services and digital data.



What does this mean in the South African context?

The local digital economy includes digital businesses, entrepreneurs working on digital apps or platforms and any other parts of the economy that form part of technological change:

- ▶ Traditional technology, media and telecommunication sectors
- ▶ New digital sectors and technologies, including e-commerce and digital banking
- ▶ “Traditional” sectors like agriculture, mining or manufacturing that are affected by emerging technologies

What this means in practice: Digital skills are in demand

The digital economy requires new and emerging skills to meet existing and future demand and to unlock employment opportunities for young people.

Currently, the demand for digital skills outweighs the supply. While digital skills will be required in all sectors of the South African economy, many local businesses lack the skills needed to operate, innovate and compete in the digital economy. There is an acute awareness of the importance of digital skills to secure employment but also a need for young people to learn how to use digital technologies. With employers looking for digital skills to increase growth and productivity, these skills are essential for young people to be more employable.



About the study

Objective: Assess digital skills demand and supply in South Africa

This study serves as an assessment of skills demand and supply in the digital economy in South Africa and builds on existing literature.

It focuses on young people not in employment, education or training (YNEET) and provides relevant insights about their lived realities, education and self-reported skills levels to better understand their current and potential roles in the digital economy:

1.

Review key policies and national promotion strategies to assess their potential to boost youth employment in the digital economy.

2.

Assess current and emerging skills demand and supply in South Africa's digital economy.

3.

Identify gaps, opportunities and needs related to specific skills that can generate new employment opportunities for young people.

It also aims to enhance perceptions and beliefs about the digital economy by providing a better understanding of the digital skills landscape and what it means for future skills demand.

This is achieved in the following ways



A nationwide, broad and inclusive study



Insights in the context of the global pandemic as a driver of change



Includes the perspectives of young people



A focus on skilling and upskilling pathways for YNEET



Insights on entrepreneurial opportunities

How the study was done

For **primary data collection** the researchers conducted



To categorize and understand the skills demand, the study used the digital skills framework developed by the International Telecommunication Union (ITU) in their digital skills toolkit, as well as the International Labour Organization's *Global Framework on Core Skills for Life and Work in the 21st Century*, published in 2021.

The study included a labour market policy review, which was essential in forming an understanding of the digital economy in the South African context, the skills mismatch and the country's readiness for the 4IR.

The aim of the **secondary research** was to link earlier research to the existing body of knowledge, and it focused on the following:

1.

The status quo of South Africa's digital economy and in-demand occupations

2.

Specific industries' contribution to total employment creation

3.

An understanding of local YNEET, including demographics and work experience

4.

Policies, programmes and strategies linked to unlocking employment opportunities



Findings



Status quo

The study highlights a demand in the digital economy for a new set of foundational, digital and entrepreneurial skills.

Human skills (core skills for life and work in the 21st century)



- ▶ **Critical thinking**
- ▶ **Creativity**
- ▶ **Communication**
- ▶ **Analytical skills**
- ▶ **Collaboration and relationship-building**

Demand for these skills by businesses is similar to the demand for digital skills. The biggest demand is for cognitive and metacognitive skills (especially strategic, creative and innovative skills) as well as analytical and critical thinking. In addition, there is a demand for emotional and social skills, especially in the context of programmes aimed at upskilling young people.

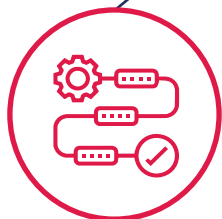
Digital building block skills



- ▶ **Analysing and managing data**
- ▶ **Software development**
- ▶ **Computer programming**
- ▶ **Digital security and privacy**

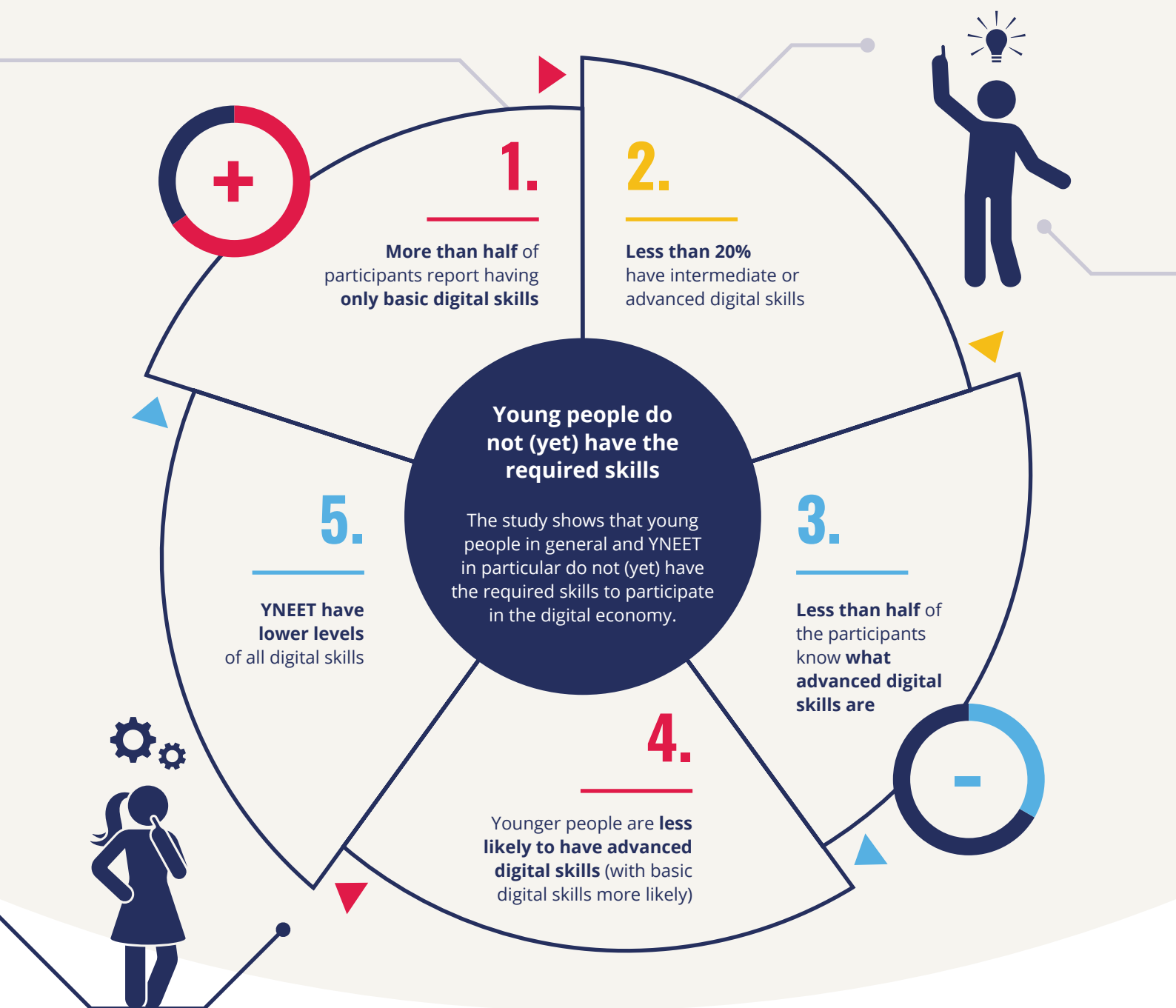
While these skills have always been important in traditionally digitally intense occupations, they are now regarded as critical in many occupations across industries. Demand does however not necessarily lead to work opportunities or full-time jobs, especially for SMEs and micro-businesses. Demand from large businesses (mainly in the space of advanced digital skills) reflects employment opportunities that these businesses are either not able to fill or that could be created if suitable talent was available.

Business enabler skills



- ▶ **Project management**
- ▶ **Business processes**
- ▶ **Communicating data**
- ▶ **Digital design**

These skills play a synthesising and integrative role in the workplace, as they enable the other two categories of skills to function practically. It reflects the fact that the digital economy now includes the increasing use of digital technologies in all industries.



In terms of demographics, there are positive trends:



Female
participants have an equal skill level compared to all participants.



Urban and rural
groups are equally likely to have used digital graphic skills, coding and app development skills or AI, VR, IoT or cybersecurity skills and less likely to have other digital skills.



Young people
trying to make an income have more digital skills compared to all participants.

Most young people surveyed have foundational literacy and human skills. YNEET are however less likely to have these skills and female participants also report lower skill levels in relation to core skills.

Defining digital skills

Digital skills are defined as a range of abilities to use digital devices, communication applications and networks to access and manage information. They enable people to create and share digital content, communicate and collaborate, and solve problems (UNESCO).

This study uses the digital skills framework in the International Telecommunication Union (ITU) [toolkit](#), which groups digital skills into three categories:



Basic digital skills

Foundational skills to **perform basic tasks** that enable people to function at a minimum level in society, including **using hardware and software** and conducting **basic online operations** such as email.



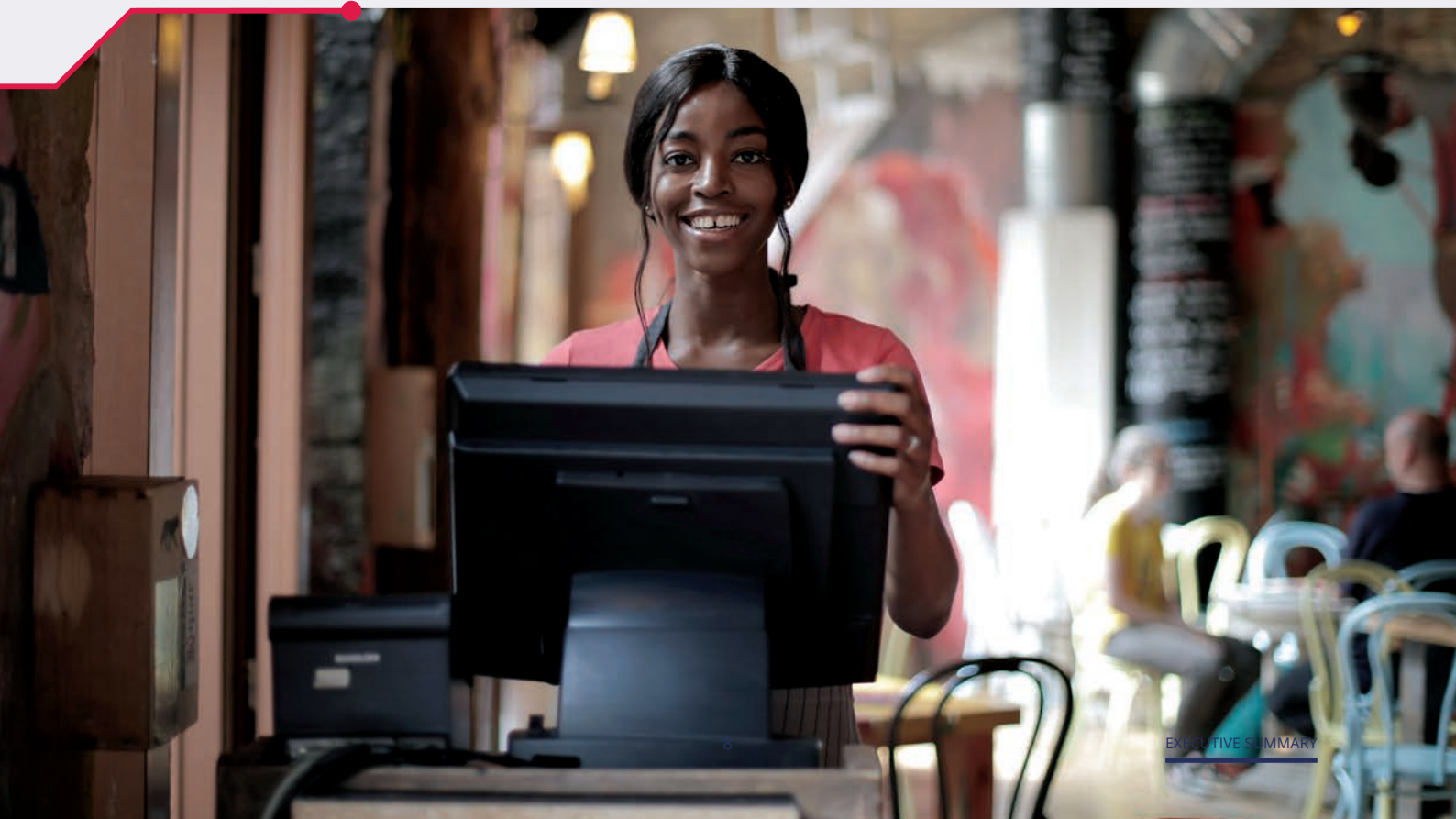
Intermediate digital skills

Skills for **using digital technologies** in more **meaningful and beneficial ways**, e.g. critically evaluate technology and create content, and that enable people to **perform work-related functions** such as desktop publishing, digital graphic design and digital marketing (i.e. job-ready skills).



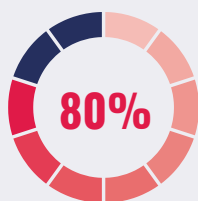
Advanced digital skills

Required by **specialists in ICT professions** such as computer programming and network management, including working with artificial intelligence (AI), virtual reality (VR), big data, the Internet of Things (IoT), cybersecurity and digital entrepreneurship.

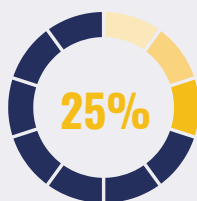


Skill requirements by businesses vary across industries and business sizes

The overview of the status quo of local businesses in this study provides a valuable understanding of the current ecosystem and how to link young people to the labour market:



Most businesses reported that the majority of their employees have **basic digital skills**.



Only one in four reported that their employees have **intermediate digital skills**.



Only one in 10 reported that they have **advanced digital skills**.

► There are some important nuances to consider:

Employee skill sets depend on business size

SME employees are most likely to have intermediate digital skills, followed by large businesses.

More advanced tasks such as data collection, research or online meetings are common to large businesses but less frequent for SMEs and micro-businesses. Young people can add value to businesses if equipped with these skills.

Basic digital skills are critical

Simple online operations make up the most frequent tasks performed by employees when using the internet.

Businesses of all sizes use the internet for marketing and e-commerce services, with around half reporting that their employees are completing these tasks. This highlights the importance of ensuring that all young people who want to enter the labour market have at least basic digital skills.

Employee skill sets vary between industries

Employees working in the financial services or information and communication technology (ICT) sectors are most likely to have a range of digital skills, from basic to advanced.



Unpacking the challenge in more detail

YNEET lack extended education and formal work experience.

This study highlights the precarious living conditions of YNEET, also compared to their peers who are engaging in income-generating activities. Despite this, they are trying to improve their situation and are active in their daily lives, even if they do not have full-time work or lack formal education.



Lack of education

The findings show that most young people have some secondary education but still face huge barriers that are keeping them from furthering and completing their education. Most have not completed any additional courses or training, over and above their formal education.



Lack of experience

Young people are detached from the labour market, with the following as key trends:

1.

Just over
50% of all participants
in the survey had some
work experience.

2.

Young people
not in formal
employment, education
or training find more
opportunities in the
informal economy.

3.

Young people from
rural areas
are less likely to have
work experience
and are less likely to access
formal employment.

4.

The
youngest participants
were least likely to have
work experience and if
they did, it was mainly in
the informal economy.

Key barriers and challenges keeping young people from participating in the digital economy

1.	Availability of education and training programmes	▶ While there is a range of possible programmes, the study also highlighted a gap in terms of the number and geographic spread of YNEET who would require assistance.
2.	Limited access to information and resources	▶ Young people see a range of opportunities in the digital economy, mainly learning and entrepreneurial. However, they do not have a clear understanding of how to gain skills and access employment.
3.	Not having a clear view of options and opportunities and how to pursue these	▶ Despite being faced with information and financial constraints, young people <u>exercise significant agency</u> to try and access information about furthering their education, gaining skills and career guidance. A lack of perceived options and opportunities and how to access these can however demotivate and frustrate them. This includes confusion about which subjects and courses will get them to their chosen career, not knowing when applications are due, and hidden application fees.
4.	Being disconnected from the digital world	▶ Young people are negatively affected by the digital divide in South Africa, facing barriers in relation to access to and affordability of digital devices and connections. While most participants have access to a phone with basic features, only one in four in rural areas have a smartphone, and one in three in urban areas. About one in three participants have no internet access, with young people in rural areas most affected.
5.	Limited opportunities to further/complete their education or develop skills	▶ Most young people have some secondary education but still face huge barriers keeping them from completing their secondary education and accessing tertiary education that will help them to adhere to employment requirements.
6.	Limited ability to transform education and skills into employment/income-generating activities	▶ The main reason for this is young people's lack of social capital and lack of guidance in accessing employment opportunities. The survey indicated that young people have low self-efficacy in relation to finding work. A lack of work experience combined with a lack of technical and digital skills remain a key obstacle for young people trying to connect to the labour market.



Going forward

Key gaps to fill to include YNEET in the digital economy and meet future skills demand

To include YNEET in the digital economy, their digital skills must be strengthened across the board:

1.

Basic digital skills

Basic digital skills must be the norm, as about 50% still lack software and online operating skills and about 30% lack hardware skills. This creates the potential to offer specific short-term training programmes.

2.

Intermediate digital skills

There is a need to train and support youth to use digital skills in a working or entrepreneurial context by equipping them with an understanding of specific systems and programmes that are used widely in the industry.

3.

Advanced digital skills

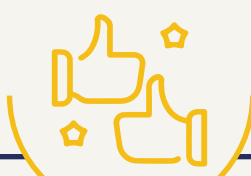
There is potential to equip young people with practical experience of applying advanced digital skills in a working environment. Young people with some work experience and prior knowledge can benefit from digital leadership skills or digital skills on a managerial level.

Considering the projected demand for certain skills, the study identifies specific gaps in relation to this future demand and the potential to prepare young people for this.



Provide appropriate training

Young people must be trained to use **software, applications and systems** that are **essential in a working environment** and be taught the skills to provide technical and desktop support.



Encourage entrepreneurship

There is a need for young people with **work experience and the application of skills**. This opens an opportunity to **create entrepreneurial opportunities** and prepare young people to provide digital services to businesses.



Increase the number of students in relevant fields

There needs to be awareness that the low number of students in the science, technology, engineering and mathematics (STEM) fields can limit possible growth in the digital economy. This opens an opportunity for **courses and training programmes that are suitable for YNEET** and prepare them for **specific occupations**, such as cybersecurity officers or coding professionals.

Key success factors in helping young people access skills and employment opportunities

Based on this understanding, the study identifies key success factors for specific programmes and interventions that support young people to access skills and employment opportunities in the digital economy.



Recommendations

The objective of the study was to provide recommendations, which are outlined per strategic objective in the tables below.

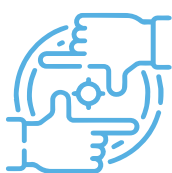
Objective 1:

Broaden the overall understanding of the skills mismatch

Objective 1.1: Assess the demand for and supply of skills for the digital economy

Recommendations

What this will involve in practice



Work with priority target groups

- ▶ Design an inclusive approach.
- ▶ Focus on vulnerable demographic groups: young females, people with disability or rural youth.
- ▶ Aim to reach young people across all geographic regions, irrespective of whether they have access to a simple phone or technological device.
- ▶ Identify and choose a few pilot areas, in urban and rural contexts.



Focus on priority skills in demand

- ▶ Basic digital skills: online operations (in demand by small businesses)
- ▶ Intermediate digital skills: website and graphic design, digital marketing
- ▶ Advanced digital skills: cybersecurity, mobile app testing/development, coding



Select priority sectors

- ▶ Sectors most suitable and impactful for programmes supporting YNEET:
 - Wholesale and retail trade
 - Manufacturing
 - Financial services

Objective 1.2: Identify digital skills policy and regulatory imperatives



Recommendations

Follow imperatives from the digital skills policy and regulatory environment

What this will involve in practice

- ▶ Facilitate the implementation of existing policies and programmes.
- ▶ Increase awareness among young people of existing opportunities and support programmes in the digital economy.
- ▶ Contribute to the ongoing advancement and alignment of the accreditation framework, including the development of micro-credentials.
- ▶ Ensure the alignment of all skills development programmes to the National Digital and Future Skills Strategy.
- ▶ Support the implementation of national strategies at provincial and local levels.
- ▶ Contribute to the provision of infrastructure, funding of the existing approach, as well as the engagement of stakeholders, especially from the private sector.

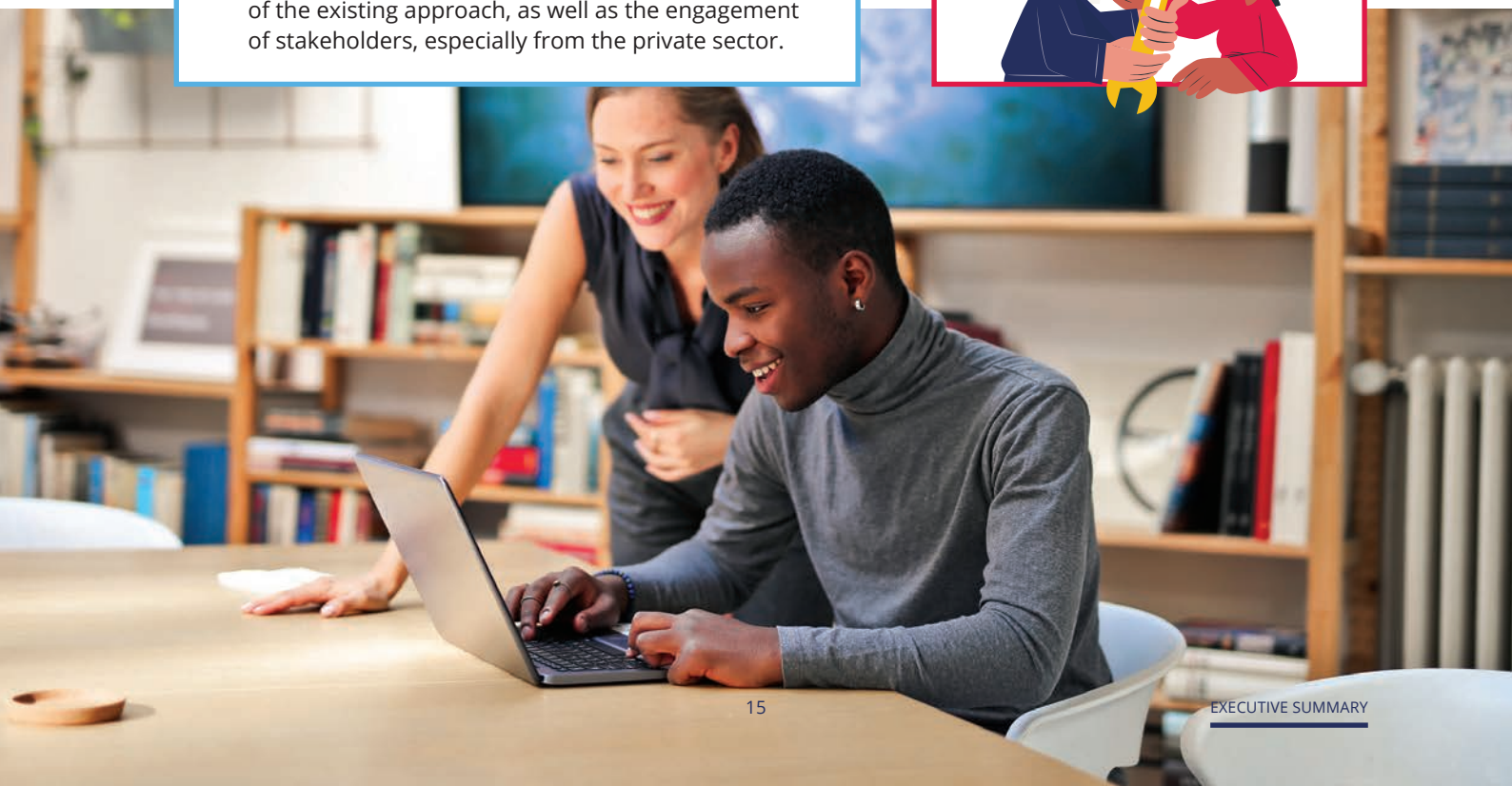


Recommendations

Create awareness among young people of the existing policy landscape and opportunities

What this will involve in practice

- ▶ Create awareness among young people of the existing policy landscape and opportunities.
- ▶ Include information on existing platforms.
- ▶ Offer short-term, in-person workshops in communities where young people live.



Objective 1.3: Understand the ecosystem for skills development in a digital economy and related enablers in the context of South Africa

Recommendations

What this will involve in practice

Incorporate the enablers that will help young people develop the relevant skills into all programmes and interventions



- ▶ Facilitate access to resources.
- ▶ Ensure connectivity, with a focus on rural and marginalized areas.
- ▶ Distribute material about opportunities and where young people can access skills.
- ▶ Adjust training formats to the specific needs of YNEET by offering long-term, in-person training.
- ▶ Include core skills to equip young people with holistic skills sets.
- ▶ Ensure accreditation with local or international institutions.
- ▶ Collaborate closely with employers to assess current vacancies, existing demand and design programmes that prepare young people for work.
- ▶ Help YNEET to gain work or practical experience through internships, apprenticeships, company placements and practical training.
- ▶ Facilitate entrepreneurial opportunities.

Objective 2: Inform the co-design of digital skills development initiatives

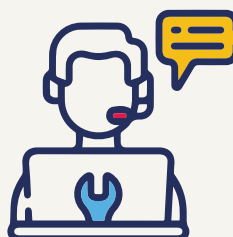
Recommendations

What this will involve in practice



Identify activities the DCDT, ILO, ITU and UNDP's constituents should prioritize

- ▶ Support key initiatives of the Presidential Employment Stimulus programme as well as the National Pathway Management Network.
- ▶ Collaborate with TVET colleges and practitioners.
- ▶ Provide capacity to scale good, demonstrated practice interventions and programmes.



Objective 3: Provide recommendations for priority activities for YNEET

Recommendations

What this will involve in practice



High-touch programmes equipping young people with skills in demand in the digital economy

- ▶ Offer longer-term training programmes (lasting six to 12 months) that will equip young people with the digital skills most in demand.
- ▶ Assess the skills level of young people and select specific courses in line with their skills level, e.g.:
 - Entry-level courses for young people with no or very limited prior exposure *focusing on basic digital skills*
 - Advanced courses for those with some experience/who have already completed a course, *focusing on cybersecurity, mobile app testing/development and coding*



Preparation programmes for young entrepreneurs to offer digital services to businesses

- ▶ Design support programmes that last six to 12 months comprising training of digital skills, practice of entrepreneurial skills and facilitation of initial work experience or contractual agreements.
- ▶ Recruit young people through colleges.
- ▶ Focus on intermediate digital skills, especially website and graphic design as well as digital marketing for SMEs.
- ▶ Place young people with SMEs that have a need for support but might not be able to pay young people and fund participants to work for businesses part-time.
- ▶ If possible, provide resources for freelance work (e.g. a laptop) and link young people to freelance opportunities.



Support for young people to access existing online content

- ▶ Run awareness campaigns about what specific digital skills young people will learn in specific courses.
- ▶ Facilitate internet access through in-person programmes at training centres or community hubs.

Objective 4: Inform a series of other system-level interventions

Objective 4.1: Strengthen and upgrade digital literacy/skills curricula and competency standards

Recommendations

What this will involve in practice



Digital Skills Accelerator that supplements the current TVET curriculum

- ▶ The Digital Skills Accelerator will be a centralized team that develops and offers hybrid, self-paced training courses on digital skills.
- ▶ The focus will be on hands-on and practical skills training.
- ▶ The team will offer support to the colleges to train their students through online content and centrally trained facilitators.

Objective 4.2: Integrate digital literacy and skills training into existing educational programmes at all levels

Recommendations

What this will involve in practice

Offer digital training as part of work-based learning (WBL), for instance through the EPWP

- ▶ Collaborate with EPWP initiatives.
- ▶ Offer in-person digital skill training that lasts a minimum of one week, prioritizing rural and marginalized areas.
- ▶ Use existing online content on free/affordable platforms under the supervision of facilitators.
- ▶ Provide advice on which additional courses young people can complete throughout their work experience.



Objective 4.3: Capacitate training institutions, trainers and teachers to deliver digital skills training

Recommendations

What this will involve in practice



Provide teaching support to TVET institutions to incorporate IT and computer science courses or increase the number of students

- ▶ Equip TVET educators with basic digital skills using existing content on online platforms.
- ▶ Offer temporary capacity support by onboarding, allocating and subcontracting educators who have the required knowledge and skills.



Provide strategic and operational support to TVET institutions

- ▶ Set up and subcontract working teams to specific TVET colleges to provide strategic and operational support to roll out the 11 4IR Future Skills Qualifications.
- ▶ Set up the courses, prepare educators and attract students to enrol.
- ▶ Connect with businesses that can offer work-based learning or practical experience.



Start a train-the-trainer initiative for educators at TVET institutions

- ▶ Identify educators who have digital skills and prior exposure and offer them in-person training to become facilitators.
- ▶ Organize sessions in which the facilitators train other educators.



Objective 4.4: Establish a platform/forum to integrate trained job seekers with relevant opportunities

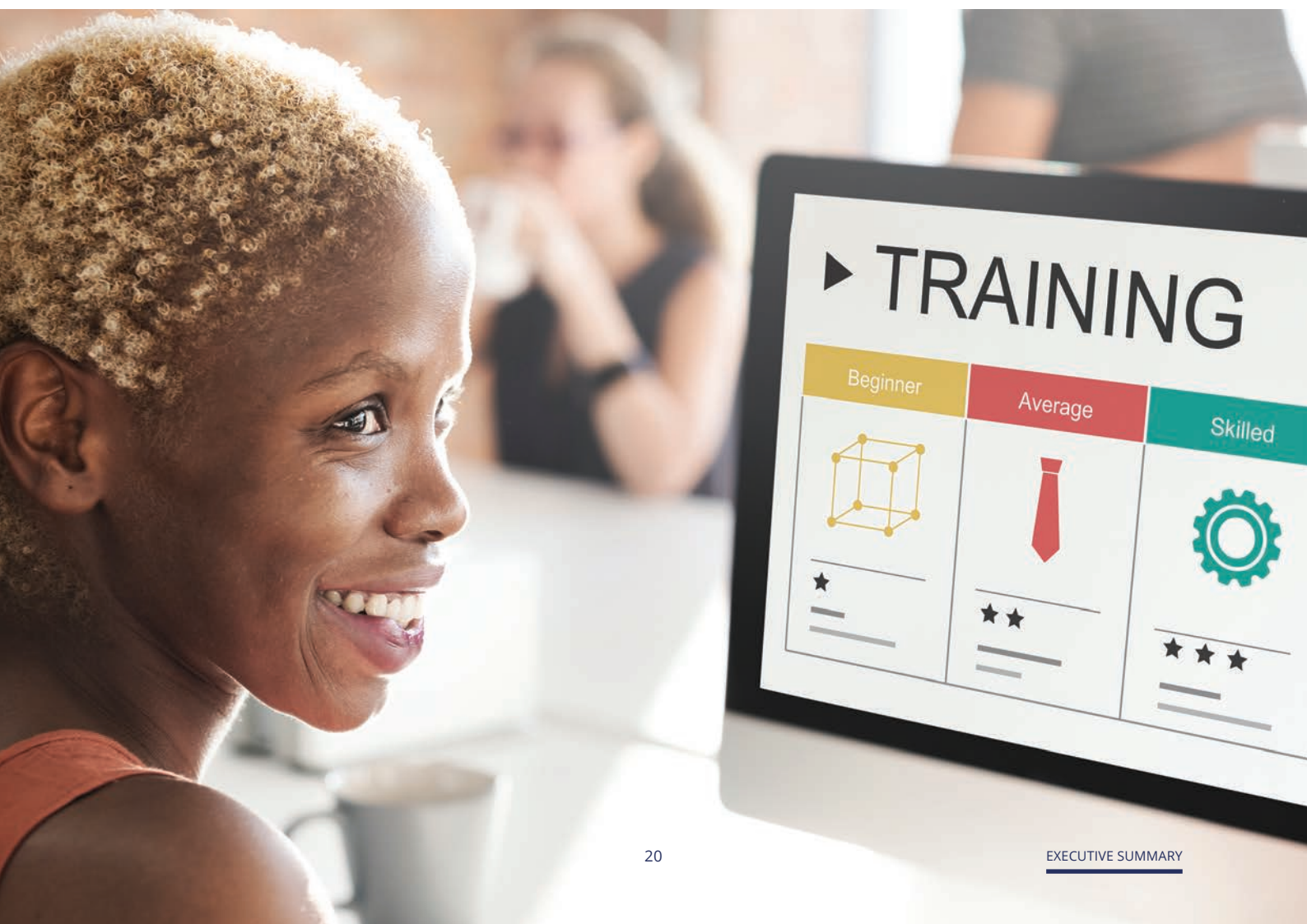
Recommendations

What this will involve in practice



Use and leverage the existing SAYouth platform, Support SAYouth

- ▶ Provide relevant information about digital skills demand.
- ▶ Support the provision of training courses through the SAYouth platform.
- ▶ Develop a system to provide accreditation/credentials for the courses.
- ▶ Encourage young people using the SAYouth platform to further their education at a public TVET college, focusing on an occupational qualification.
- ▶ Support ongoing efforts to increase the visibility of the platform.
- ▶ Make the platform more accessible for young people living with disabilities.





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