VETToolbox

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Strengthening digital competences in TVET and higher education

Toolkit

Implemented by

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

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Abbreviations

AFD	Agence Française de Développement
AHK	German Chamber of Commerce and Industry
AI	Artificial Intelligence
ASEAN	Association of Southeast Asian Nations
AWS	Amazon Web Services
BMZ	German Federal Ministry for Economic Cooperation and Development
CBO	Community Based Organisation
CIDA	Canadian International Development Agency
CLT	Community Level Trainers
CNC	Computerised Numerical Control
CSO	Citizen Support Organisation or Community School Organisation
CV	Curriculum Vitae
DAAD	German Academic Exchange Service
DC	Development Cooperation
CFP	Technical Vocational Training Centre
DGD	Directorate-General for Development Cooperation and Humanitarian Aid
DHET	Department of Higher Education and Training
DigCompEdu	Digital Competence Framework for Educators
DRC	Democratic Republic of Congo
EAC	East African Community
EDC	Education Development Center
Enabel	Belgian Development Agency
ELT	Expert Level Trainer
EU	European Union
FCDO	Foreign Commonwealth and Development Office
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
HSBC	Hongkong and Shanghai Banking Corporation
ICT	Information and Communications Technology
IOT	Internet of Things
IP	Integrative Pedagogy

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Abbreviations

IT	Information Technology
IUCEA	Inter-University Council of East Africa
LuxDev	Luxembourg Development Cooperation Agency
MELR	Ministry of Employment and Labour Relations
MENA	Middle East and North Africa
MoF	Ministry of Finance
MoHESR	Ministry of Higher Education and Scientific Research
MoL	Ministry of Labour
MOOC	Massive Open Online Course
MoSHE	Ministry of Science and Higher Education
NGO	Non Governemental Organisation
NM-AIST	Nelson Mandela African Institution of Science and Technology
NSSC	National Sector Skills Council
NVTI	National Vocational Training Institute
ODC	Orange Digital Center
OER	Open Educational Resources
PGL	Peer Group Leaders
PPP	Public Private Partnership
SAP	System Application and Product in Processing
SEAMEO	Southeast Ministers of Education Organisation
SDG	Sustainable Development Goals
ToT	Training of Trainers
TVET	Technical Vocational Education and Training
UNESCO	United Nations Educational,Scientific and Cultural Organisation
UNHCR	United Nations High Commissioner for Refugees
UK	United Kingdom
USAID	United States Agency for International Development
XR	Extended Reality

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1. Introduction

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1.1 Welcome to the toolkit

- How could I design better programmes to equip youth in low- and middle-income countries with digital competences for their future jobs?
- What type and level of digital competences are relevant to the professional opportunities of my target group?
- What concrete steps do I have to take to plan and implement a programme on digital competences?
- How can I ensure that women, girls and vulnerable groups are not excluded?
- What previous experiences from TVET and higher education in low- and middle-income contexts could I built on?

These are just some of the questions practitioners from technical and vocational education and training (TVET) and higher education face today. In response, this toolkit aims to provide **good practices, lessons learnt and concrete recommendations** to guide efforts in TVET and higher education to promote digital competences for employment and entrepreneurship. It focusses on **low- and middle-income countries**, aiming to contribute to a fair and inclusive digital transformation of TVET and higher education worldwide.

The toolkit focusses on the **beneficiaries' digital competences** that improve their employability and professional integration. **Chapter 2** proposes a conceptual **framework** of digital competences for a common understanding of and a practical guidance on enhancing digital competences.

The information provided in this toolkit is based on the **insights and practical experience of 22 project examples** (**Chapter 3**). They encompass cases from TVET and higher education in Africa, the Middle East, Latin America and Asia.

The **target audience** of the toolkit are stakeholders of TVET and higher education, including further education. To make navigation easier, the toolkit specifically addresses **three levels**:

- **Macro-level:** Governments, policy makers and regulators as well as decision-makers of development cooperation programmes
- **Meso-level:** Representatives of intermediary institutions and individual programmes for TVET and higher education from the public, private, civil society or academic sector
- **Micro-level:** Individual learners, educators, trainers and students

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1.1 Welcome to the toolkit

To facilitate the set-up of a project that aims to strengthen digital competences in TVET or higher education, lessons learnt and success factors of the projects were turned into step-by-step recommendations for each level and can be found in Chapter 4.

Teachers and trainers are addressed indirectly as intermediaries in order to strengthen the digital competences of beneficiaries. However, focussing on the competences of final beneficiaries such as students, this toolkit is neither designed to provide guidance for education institutions on how to implement virtual or hybrid teaching, nor addressing the competences of educators in depth. The Digital Competence Framework for Educators (DigCompEdu) and other more helpful resources are compiled in Chapter 6.

1.2 How to navigate the toolkit

The **Toolkit on Strengthening Digital Competences in TVET and Higher Education** is an interactive PDF file. It has a multi-layered structure that encourages the reader to jump in any order according to what they want to see.

The toolkit demonstrates examples of good practice approaches to strengthen digital competences in the TVET and higher education sectors. Throughout the toolkit, one will find interactive PDF links to various sections, as well as links to additional resources for further insights embedded in the text.

The toolkit offers an introduction on key terms and definitions and presents the Digital Literacy Global Framework as a framework to categorise the projects' diverse approaches on macro, meso and micro level interventions. The project examples address approaches in the formal and non-formal sectors and describe what projects are doing to improve people's digital competences and therefore their access to the digital world and their employability. Each example consists of a concise summary of the project parameters, including the donor agency, the framework categories and relevant Sustainable Development Goals (SDGs).

Furthermore, the approach of the projects as well as the implementation steps are described and insights into the success factors and lessons learned are given.

Links to the following information are placed throughout the text:

- → Project examples
- → Frameworks and definitions
- → Material
- → Additional resources

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1.2 How to navigate the toolkit

Graphic 1:
Toolkit Structure

Global Framework for Digital Literacy

- → Adaptation of the EU DigComp Framework
- → Catagorisation of projects' approaches

Project examples

- → Examples of real projects from GIZ and other cooperation agencies to share approaches and experiences
- → Lessons learnt and success factors
- → Links to further resources

Recommendations, trends and further resources

- → Step-by-step recommendations for setting up projects to strengthen digital competences
- → Future trends for digitalisation
- → Additional resources for competences assessments, frameworks, learning material

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1.3 Background: Preparing TVET and higher education graduates for a digital future

Around the world, digitalisation and Industry 4.0 technologies are rapidly advancing, transforming the "what, how, when and where" of work and demanding new competences to compete in the economy and job market. Institutions in TVET and higher education sectors have to respond to new complexities to prepare learners for their professional futures. In this dynamic and seemingly unpredictable environment, anticipating relevant competences and linking education to job markets can pose impressive challenges.

The digital transformation is often hailed as a "great enabler" for more innovation and efficiency in the economy. It offers new job opportunities for those equipped with the right knowledge, skills and attitudes. However, to reap these benefits, basic digital literacy needs to become the "new normal" across the broad population. In addition, TVET and higher education need to promote advanced, specialized digital competences for specific professions such as IT system electronics technicians, software or robotic engineers or data scientists.

Still, the so-called "digital divide", or unequal access to the benefits of digitalisation, continues to run along economic and geographical lines with people from poorer countries and rural areas having less access. Furthermore, deep inequalities persist – and often widen, forming barriers for women and girls, senior citizens and marginalised groups such as refugees and migrants. To promote a vision of inclusive digital transformation requires paying attention to the digital competences of those most vulnerable, possibly excluded from TVET and higher education.

Recognising the importance of equal access to digital competences, the United Nations (UN) officially addresses this topic with the SDG 4 that aims at "Inclusive and equitable quality education and promote lifelong learning opportunities for all". Specifically, indicator 4.4.1 measures the "proportion of youth and adults with information and communications technology (ICT) skills, by type of skill"[1].

Promoting digital competences equally forms a key strategic objective for global partnerships of the EU. More specifically, a priority of its development cooperation is "preparing the professionals, business leaders and decision-makers of tomorrow for the green and the digital transformation".[2] The digital transformation still holds many untapped opportunities to democratise access to learning and information globally, including to digital competences for employability. However, European governments are increasingly recognising

1 United Nations Office for Statistics (2022): Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development.

2 European Commission, International Partnerships: "Policies: Our Priorities". Retrieved 09.12.2022 from:

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1.3 Background: Preparing TVET and higher education graduates for a digital future

the need of managing related risks and threats, too. The "world wide web" today is a contested political space with competing political priorities, particularly visible in the differences of regulation, policies and public-private cooperation of the European Union, USA and China.

Globally, the EU stands out with an agenda to work towards an inclusive internet and ethical use of digital technologies. Its vision is to "empower businesses and people in a human-centred, sustainable and more prosperous digital future"[3]. This vision equally pertains to the EU's international development cooperation, notably the efforts to invest in skills for the future. This toolkit was developed by the VET Toolbox, an EU-supported project, in line with this vision.

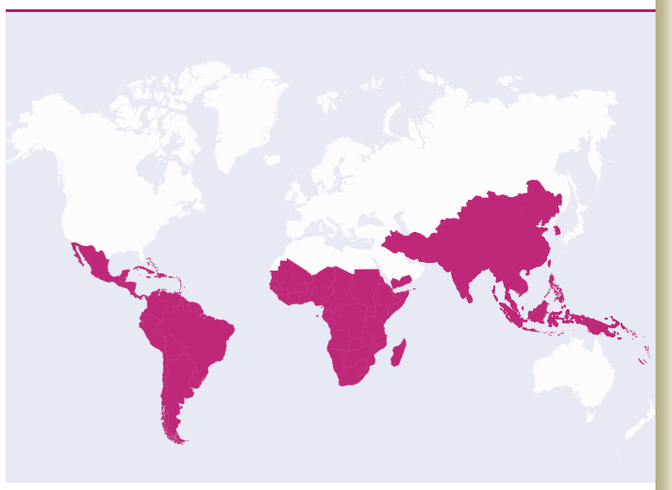
VET Toolbox

The European Commission and the German Federal Ministry for Economic Cooperation and Development (BMZ) co-funded the **VET Toolbox** from 2017 through 2022. The VET Toolbox was implemented by Enabel, the British Council, LuxDev, AFD, and GIZ and has supported partner countries in their efforts to improve their national TVET systems, to make them more relevant for the labour market and increase the employability of the graduates. The project focuses on sharing good practices, methods, and tools by:

- Focusing on evidence-based VET and labour market analysis.
- Encouraging private sector involvement in VET and labour market activities.
- Enhancing the inclusion of vulnerable groups in VET.

A second phase of the VET Toolbox through 2024 focusses on accompanying mainly European investments with skills development measures and local capacity building to create local jobs.

Partner countries are located in Sub-Saharan Africa, South and Southeast Asia, and Latin America.



3 European Commission: "Europe's Digital Decade: digital targets for 2030". Retrieved 09.12.2022 from:

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2. A common framework of digital competences

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2.1 What are digital competences

As digital technologies are dynamically evolving, so do definitions of digital competences in TVET and higher education. Digital competences are multi-faceted and include both “hard” and “soft skills”. For the purpose of this toolkit, digital competences will be broadly defined as the knowledge, skills and attitudes needed to navigate the digital transformation of labour markets.

As digital technologies transform work realities, TVET and higher education institutions promote digital competences with two objectives: Firstly, general digital competences are considered to improve the employability of their graduates across sectors and professions. Secondly, digital competences form the core of specific TVET or study programmes such as IT system support, software engineering or digital management. Digital competences can thus range from basic computer literacy to advanced programming, and include specific aspects such as digital content creation, intellectual property, virtual communication and collaboration, digital safety and security, or knowledge about specific technologies such as artificial intelligence.

> “Digital competences are the knowledge, skills and attitudes needed to navigate the digital transformation of labour markets.”

Digital competences are often understood as a type of literacy, akin to learning how to perform a variety of tasks in a foreign language. In the context of TVET and higher education, digital literacy is described by the UNESCO as the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship[4].

4 *UNESCO Institute for Statistics (2018): A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2.*

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2.2 Towards a common framework

To leverage the benefits of the digital transformation of labour markets, TVET and higher education stakeholders need a common understanding of digital competences. A common understanding can be reached with a framework for digital competences. TVET and higher education institutions, policy-makers, educators and individual learners can draw on such a framework to better understand, plan, implement and measure efforts to promote digital competences. It provides a common language and reference model for all stakeholders and across the learning cycle (see box on the rigt side).

Benefits of a common framework for digital competence in TVET and higher education (examples)

- ✓ Empowering learners to set their own learning goals and measure their progress
- ✓ Providing a common taxonomy and structure for educators and policy-makers to assess digital competences and to design targeted strategies, interventions and programmes
- ✓ Guiding the design of comprehensive curricula and materials to improve the quality of education and training
- ✓ Supporting transparent and fair recruitment and remuneration in the private sector with standardised job descriptions and assessments
- ✓ Allowing for benchmarking of education programmes and promoting the harmonisation of curricula and accreditations in education systems
- ✓ Facilitating worker mobility through harmonisation of certification across countries or industries

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2.3 Introducing the Digital Literacy Global Framework

This toolkit builds on the Digital Literacy Global Framework developed out of the Digital Competence Framework for Citizens[5] (EU DigComp) by the European Commission. The EU DigComp was first developed in 2013 and refined through extensive stakeholder consultations (latest update in 2022). Originally developed with a focus on the EU, it has been adapted to be flexibly applied in the global context, in particular to low- and middle-income countries across the Global South. A study commissioned by UNESCO[6] demonstrated its relevance to labour market demands and applicability to pre-existing frameworks globally. For example, the study used the EU DigComp 2.0 to map relevant competences in use cases in the agriculture and energy sectors from five countries in Sub-Sahara Africa. UNESCO proposed the **Digital Literacy Global Framework** as the basis to measure global progress towards the Sustainable Development Goal 4 related to digital literacy (see Chapter 1).

The adapted Digital Literacy Global Framework (graphic 2) for this toolkit builds on a broad understanding of digital competences clustered across **seven dimensions**. For easier understanding this adapted version of the Digital Literacy Global Framework is called **Global DigComp Framework** in this toolkit."

Each dimension is broken down to **specific sets of knowledge, skills and attitudes** required to set clear educational goals and measure progress. Furthermore, as interventions may target **different levels**, it can measure competences from basic digital literacy to advanced, specialised skills such as the development of a software application.

The adapted framework offers an encompassing taxonomy for digital competences of specific target beneficiaries such as students enrolled in TVET or higher education institutions. However, many interventions target them indirectly through working with intermediate TVET or higher education staff (e.g. training of trainers approach). This (direct) target group of teachers or trainers might need additional digital and pedagogical competences to successfully bridge digital curricula to learners. While these are beyond the scope of this toolkit, helpful resources such as the European Framework for the Digital Competence of Educators (DigCompEdu) can be found in chapter 6 (resources).

The framework starts with the competences to handle hard- and software (Dimension 0). So, target groups may for instance need to first learn the basics of how to switch on a laptop, charge it, and open meeting software applications (see project 18, EDGE).

Dimension 1 – 5 are crosscutting competences to leverage digital technologies for content creation, collaboration, communication and more. Knowing how to sell

5 Vuorikari, R., Kluzer, S. and Punie, Y. (2022): *DigComp 2.2*: The Digital Competence Framework for Citizens – With new examples of knowledge, skills and attitudes, Publications Office of the European Union, Luxembourg.

6 *UNESCO Institute for Statistics (2018): A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2.*

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2.3 Introducing the Digital Literacy Global Framework

products on instant messaging services for business (project 6, Pro Educação) or even acquiring advanced competences such as those related to Industry 4.0 (project 3, RECOTVET III) are just two examples in this area. Furthermore, the framework is applicable to the competence of how to navigate risks in the digital world. Dimension 4, "Safety", can guide learning on competences such as protecting devices with passwords or identifying online misinformation (project 20, Opportunity 2.0).

Lastly, a final dimension has been added to the original framework to include digital competences related to a specific occupation. Project 9 (STEP II) for instance strengthens the digital competences of university graduates through further training and internships at IT companies to specifically prepare them for IT jobs mainly in the tech sector.

The next section gives an overview of each dimension, the skills, knowledge and attitudes (competences) they encompass, as well as project examples of interventions that target these competences on the basic, intermediate or advanced level.

Graphic 2:
Dimensions of the adapted Global DigComp Framework

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2.4 Detailed framework with project examples

Table 1:
Overview of proposed competence areas and competences of the Digital Literacy Global Framework, adapted from UNESCO Institute for Statistics (2018)

Competence areas and competences	Description
0 Devices and software operation	
0.1 Physical operations of digital devices	To identify and use the functions and features of the hardware tools and technologies.
0.2 Software operations in digital devices	To know and understand the data, information and/or digital content that are needed to operate software tools and technologies.
Project examples	Students know how to charge and turn on a laptop (project 6, Pro Educação, project 18, EDGE) Trainers and students know how to access online learning platforms and to attend online learning courses (project 3, RECOTVET III) Girls know how to access common software applications for communication and collaboration (project 18, EDGE)

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2.4 Detailed framework with project examples

Competence areas and competences		Description
1	**Information and data literacy**	
1.1	Browsing, searching and filtering data, information and digital content	To articulate information needs, to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.
1.2	Evaluating data, information and digital content	To analyse, compare and critically evaluate the credibility and reliability of sources of data, information and digital content. To analyse, interpret and critically evaluate the data, information and digital content.
1.3	Managing data, information and digital content	To organise, store and retrieve data, information and content in digital environments. To organise and process them in a structured environment.
Project examples		Trainers know how to use the internet to search for educational resources (project 5, DS4JI) Graduates know how to use cloud computing to store and organise data (project 2, Orange Digital Center)

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Competence areas and competences	Description
2 Communication and collaboration	
2.1 Interacting through digital technologies	To interact through a variety of digital technologies and to understand appropriate digital communication means for a given context.
2.2 Sharing through digital technologies	To share data, information and digital content with others through appropriate digital technologies. To act as an intermediary, to know about referencing and attribution practices.
2.3 Engaging in citizenship through digital technologies	To participate in society through the use of public and private digital services. To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.
2.4 Collaborating through digital technologies	To use digital tools and technologies for collaborative processes and for co-construction and co-creation of resources and knowledge.
2.5 Netiquette	To be aware of behavioural norms and know-how while using digital technologies and interacting in digital environments. To adapt communication strategies to the specific audience and to be aware of cultural and generational diversity in digital environments.
2.6 Managing digital identity	To create and manage one or multiple digital identities, to be able to protect one's own reputation, to deal with the data that one produces through several digital tools, environments and services.
Project examples	Female entrepreneurs are able to sell products via instant messaging services (project 6, Pro Educação)
	Female job seekers know how to search for jobs and to engage in online job portals (project 6, Pro Educação)
	Young job seekers know how to write work related e-mails (project 10, WRN)
	Young people are aware of the data they share through social media profiles and know how to manage their private settings (project 10, WRN)

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2.4 Detailed framework with project examples

Competence areas and competences	Description
3 Digital content creation	
3.1 Developing digital content	To create and edit digital content in different formats, to express oneself through digital means.
3.2 Integrating and re-elaborating digital content	To modify, refine, improve and integrate information and content into an existing body of knowledge in order to create new, original and relevant content and knowledge.
3.3 Copyright and licences	To understand how copyright and licences apply to data, information and digital content.
3.4 Programming	To plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.
Project examples	Young refugees know how to use a platform for self-publishing (WordPress) and graphic design software (project 14, Life Skills)
	Female entrepreneurs know how to use business efficiency apps (project 6, Pro-Educação)
	Young refugees know how to use html to develop websites (project 14, Life Skills)
	Young university graduates are competent in high-level programming language and app development (project 2, Orange Digital Center)
	Young graduates and start-up employees know how to develop mobile apps (project 19, Coding Iraq)

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2.4 Detailed framework with project examples

Competence areas and competences	Description
4 Safety	
4.1 Protecting devices	To protect devices and digital content, and to understand risks and threats in digital environments. To know about safety and security measures and to have due regard to reliability and privacy.
4.2 Protecting personal data and privacy	To protect personal data and privacy in digital environments. To understand how to use and share personally identifiable information while being able to protect oneself and others from damages. To understand that digital services use a privacy policy to inform on how personal data is being used.
4.3 Protecting health and well-being	To be able to avoid health-risks and threats to physical and psychological well-being while using digital technologies. To be able to protect oneself and others from possible dangers in digital environments (e.g. cyber bullying). To be aware of digital technologies for social well-being and social inclusion.
4.4 Protecting the environment	To be aware of the environmental impact of digital technologies and their use.
Project examples	Out-of-school youth can create safe passwords (project 20, Opportunity 2.0) Out-of-school youth understand their own digital footprint and how to manage visibility of own data (project 20, Opportunity 2.0) Women know how to protect themselves and their data online (project 11, Women going digital) Out-of-school youth know how to identify fake news (project 20, Opportunity 2.0) Young people are able to identify and prevent cyber-bullying (project 10, WRN, project 20, Opportunity 2.0)

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2.4 Detailed framework with project examples

	Competence areas and competences	Description
	5 Problem-solving	
	5.1 Solving technical problems	To identify technical problems when operating devices and using digital environments, and to solve them (from trouble-shooting to solving more complex problems).
	5.2 Identifying needs and technological responses	To assess needs and to identify, evaluate, select and use digital tools and possible technological responses to solve them. To adjust and customise digital environments to personal needs (e.g. accessibility).
	5.3 Creatively using digital technologies	To use digital tools and technologies to create knowledge and to innovate processes and products. To engage individually and collectively in cognitive processing to understand and resolve conceptual problems and problem situations in digital environments.
	5.4 Identifying digital competence gaps	To understand where one's own digital competence needs to be improved or updated. To be able to support others with their digital competence development. To seek opportunities for self-development and to keep up-to-date with the digital evolution.
	5.5 Computational thinking	To process a computable problem into sequential and logical steps as a solution for human and computer systems.
	Project examples	Young graduates are able to use 3D-printers to produce product prototypes (project 2, Orange Digital Center)

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2.4 Detailed framework with project examples

Competence areas and competences		Description
6	**Occupation-related competences**	
6.1	Operating specialised digital technologies for a particular field	To identify and use specialised digital tools and technologies for a particular field.
6.2	Interpreting and manipulating data, information and digital content for a particular field	To understand, analyse and evaluate specialised data, information and digital content for a particular field within a digital environment.
Project examples		Graduates learn programming languages that qualify them for specific jobs in the IT sector (project 2, Orange Digital Center) TVET trainers of electrical mechatronic and automation programmes learn competences related to industry 4.0 in their profession (project 3, RECOTVET III) Apprentices in the tourism sector learn how to use hotel management software (project 9, STEP II)

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3.1 Methodology

This toolkit is set out to provide good practices, lessons learnt and concrete recommendations to guide efforts in TVET and higher education in order to promote digital competences for employment and to support safe and equal access to the opportunities offered by the digital world. The toolkit is based on a practice-oriented study. It mainly draws upon primary research through semi-structured interviews with development projects described below. In addition, desk research was conducted in order to identify secondary sources, including studies and articles, frameworks, standards and policies, educational materials, practical toolkits and other relevant publications by academia, governments, private sector and development cooperation (DC) organisations. An overview of key literature can be found in chapter 6 (Further resources).

The study aimed to include a diversity of different good practice examples of strengthening digital competences in TVET and higher education. As a first step, a long list of potential project examples was gathered through desk research, including but not limited to those linked to the VET Toolbox partners. Projects were screened to identify those with most concrete outcomes that could provide "lessons learnt" and "good practices" (e.g. tools or processes). Furthermore, the selection criteria (see box on the left) were designed to reflect diversity in terms of target groups, geographical focus, technological sophistication and cooperation partners, specifically cooperation with the private sector. Based on these criteria, 29 projects were shortlisted to be contacted for interviews.

Selection criteria for DC projects interviewed

1. Relevant to formal or non-formal TVET or higher education
2. Concrete outcomes (tools or processes) regarding digital competences
3. Diversity of target groups and beneficiaries
4. Diversity of technological sophistication in the promotion of digital competences (low- or high-tech environments)
5. Involvement of the private sector in implementation of the project
6. Project in implementation or finished no longer than 6 months ago

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3.1 Methodology

Projects contacted: 29

Good practice projects for the toolkit: 22 projects

Regional Distribution: 1 Latin America, 5 MENA, 9 Sub-Sahara Africa, 2 Asia, 5 Regional/Global

Education sector: 14 TVET, 8 higher education

Formal/non-formal education: 11 formal, 11 non-formal

The shortlisted projects were contacted via e-mail. 5 projects did not respond and 2 projects were found not suitable for the toolkit based on the initial exchange. Semi-structured interviews were conducted with 23 projects, of which 22 were deemed suitable to be included in the toolkit. The interview were structured through guiding questions and lasted for 45 – 60 minutes. They were hold online. In most of the cases, the project representatives to be interviewed were programme directors, team leaders or technical advisors of the project team, working specifically on the activities that strengthen digital competences. The projects interviewed were linked to six different implementing organisations, including GIZ, Enabel, AFD, USAID, LuxDev and British Council.

The interviews were not recorded, but written notes were taken. The results of the interviews were summarised in a standard structure comprised of 17 categories. This included classifying the projects on the basis of the adapted Global DigComp Framework (Chapter 2) to provide a comparative overview of the respective digital competences targeted. The projects' representatives received a draft for their feedback and approval. Moreover, the projects shared material, additional resources and pictures included in the project examples. The resulting project overviews are presented below.

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3.2 Matrix overview of project examples by target group and topic area

To facilitate the navigation of the reader and to provide an overview, the projects are mapped in a matrix next page. The (abbreviated) project title is hyperlinked to lead to the good practice example with further information.

Projects are categorised[7] based on 3 dimensions: (1) the education area (2) their target group[8] and (3) transversal topics specifically addressed by the project. As can be seen, this toolkit includes a broad range of different approaches of formal and non-formal learning in TVET and higher education. While the majority of examples focus on students and teachers/trainers as main actors in education, other actors such as managing and administrative staff are equally featured. As the global "gender digital divide" remains a challenge, women and girls emerged as an important target group of the projects surveyed. Other notable topics that projects were concerned with are the inclusion of persons with disabilities, economically disadvantaged students and cooperation with the private sector.

7 In the case that a project was relevant to more than one category in the dimensions, only the main one was included for reasons of simplicity.

8 It should be noted that target group is understood here as those groups that the project intervention directly targets. The indirect beneficiaries ultimately impacted by the project are not reflected. For example, projects may directly target educators or trainers, but with the indirect aim to improve the learning outcomes of the students.

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3.2 Matrix overview of project examples (all linked) by target group and topic area

EDUCATION AREA		Target Group (for strengthening digital competences)				Transversal topics		
		Students in general	Girls and Women	Educators, trainers	Managing / admin. staff	Inclusion of people with disabilities	(Economically) disadvantaged students	Private Sector Coop.
FORMAL EDUCATION	TVET	9 – STEP II 8 – MOVE-HET	4 – #eSkills4Girls Ghana 5 – DS4JI 6 – Pro Educação 9 – STEP II	1 – DSAA 4 – #eSkills4Girls Ghana 3 – RECOTVET III 5 – DS4JI 6 – Pro Educação 9 – STEP II 8 – MOVE-HET 13 – ACFPT	3 – RECOTVET III 5 – DS4JI	3 – RECOTVET III		3 – RECOTVET III 8 – MOVE-HET 13 – ACFPT
	Higher Education	8 – MOVE-HET 9 – STEP II 12 – dSkills@EA 16 – ELIFE 22 – ESTI		7 – e-Learning Jordan 8 – MOVE-HET 21 – PAORC 22 – ESTI	7 – e-Learning Jordan		16 – ELIFE	8 – MOVE-HET 9 – STEP II 12 – dSkills@EA 16 – ELIFE 22 – ESTI
NON-FORMAL EDUCATION	TVET	10 – WRN 12 – dSkills@EA 15 – AMAL 14 – Life Skills 17 – SIDP 20–Digital Tayo	1 – DSAA 4 – #eSkills4Girls Ghana 15 – AMAL 18 – EDGE 14 – Life Skills 17 – SIDP	10 – WRN 17 – SIDP		1 – DSAA 17 – SIDP	1 – DSAA 14 – Life Skills 15 – AMAL 17 – SIDP 18 – EDGE 20– Digital Tayo	15 – AMAL 20– Digital Tayo
	Higher Education	1 – DSAA 2 – Orange Digital Centers 12 – dSkills@EA 19 – Coding Iraq	11 – Women Going Digital 2 – Orange Digital Centers	7 – eLearning Jordan	7 – eLearnin Jordan 11 – Women Going Digital	2 – Orange Digital Center		1 – DSAA 2 – Orange Digital Centers 11 – Women Going Digital 19 – Coding Iraq

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3.3 Overview of project examples by type and level of digital competences targeted

The table **on the next page** provides a more detailed analysis of the digital competences addressed by the 22 project examples presented in the toolkit.

All 22 project examples target dimension 1 “Information and Data Literacy”, which has thus emerged as the most important competence category. Furthermore, the competences related to operating devices and software remain important for the majority of the projects surveyed. This might be indicative of the persisting lack of access to digital infrastructure and devices among the target groups in the Global South. The first step of many interventions seems to be the “onboarding” of target groups on how to operate computers, mobile phones or software applications.

The competences least in the focus of the project examples are related to problem solving. What is striking, however, is that less than one third of the projects strengthen competences for online safety and security. As the project examples in this toolkit often work with vulnerable groups, there seems to be a need to ensure that target groups understand the risks and threats related to digital technology, including concerns for data privacy and personal well-being.

In terms of competence levels, basic digital competences remain a milestone for many target groups. Even though digital technology rapidly transforms employment and entrepreneurship around the world, promoting basic competences remains relevant in this toolkit’s sample. The majority of the presented projects (15 in total) strengthen digital competences at the basic and intermediate level. 8 projects out of this 15 exclusively focus on basic competences. Just 7 projects featured in this toolkit target digital competences at an advanced level.

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3.3 Overview of project examples by type and level of digital competences targeted

Overview: Which dimension and level of digital competences are addressed by the project examples?

PROJECT NUMBER AND SHORT TITLE	Dimensions of the adapted Global DigComp Framework						
	0 Devices and software operation	1 Information and Data Literacy	2 Communication and Collaboration	3 Digital Content Creation	4 Safety	5 Problem Solving	6 Occupation-related competences
	Level of digital competences targeted (1 – basic, 2 – intermediate, 3 – advanced competences)						
1 DSAA		3		3			3
2 Orange Center		3		3		3	3
3 RECOTVET III	2	2		1			2
4 #eSkills4Girls Ghana	2	2		1			2
5 DS4JI	1	1					
6 Pro Educação	2	1		1			1
7 E-Learning HE Jordan	1	1	1			1	1
8 MOVE-HET	2	2	2	2			2
9 STEP II	3	3	2				3
10 WRN	2		1		1		1
11 Women Going Digital	1	1	1		1		1
12 dSkills@EA		2	2	2	2	2	1
13 ACFPT	3	3	3	2			3
14 Life Skills	1	1	1				
15 Amal	1	1	2	1			1
16 ELIFE	1	2	1	2			2
17 SIDP	2	3	2				2
18 EDGE	1	1	1	1			
19 Coding Iraq	1	1	1		1		1
20 Digital Tayo		3	3	3	2	2	3
21 PAORC	1	1	1		1		
22 Formapo – ESTI	3	3	3	2			3

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Project 1 | DSAA – Digital Skills Accelerator Africa

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1 DSAA – Digital Skills Accelerator Africa

OVERVIEW	
	Ghana, Morocco, Rwanda, Senegal, Egypt, Côte d'Ivoire
	GIZ
	BMZ
	SDG 4, **8**
	IT graduates, young job seekers (18-35), and additional inclusion of women, people with disabilities and other marginalized groups
	Upskill people for better employment opportunities in companies who need specific IT skilled workers to grow their business.

legend

Tools / processes / approach

International, German and African DSAA member companies provide outsourcing of digital services for local and international clients in areas like software development, tech support or customer service.

Based on the skills-gap the companies identify, training programmes are designed by the companies. The trainings are delivered according to the specificity of each target group (e.g. fresh graduates, young professionals, middle managers), with great care of inclusion (persons with disability, persons living in secondary cities, prisoners, etc.) and gender equity concerns.

AmaliTech programme (Ghana and Rwanda):

- → Upskill training for young graduates with IT or digital background
- → Blended learning: online sessions and on-site training, self-paced with instructor support
- → Specialisation in front-end, back-end, full-stack development and Java programming
- → Duration: 3 – 9 months, depending on country, knowledge and level of skills

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1 DSAA | Digital Skills Accelerator Africa

Tools / processes / approach

Azubi AWS re/Start (Ghana and Rwanda)

- → Aims to prepare youth for entry-level careers in the cloud
- → Blended learning: online coursework, real-world scenario based learning and hands-on labs, support from mentors and trainers
- → IT related skills: Programming, cybersecurity, networking, database skills, data science
- → Soft skills: CV and interview coaching
- → Duration: 3 months

Other Approaches: Software development bootcamps, learning camps for data analytics and machine learning skills, customer service and tech support trainings for the business process outsourcing industry, middle management trainings

Motivational talks and career advice specifically for women

Companies are advised on how to implement barrier-free recruitment processes and how to create inclusive infrastructure, accessible for all. Specific IT trainings for imprisoned people to improve their job market chances after their release (pilot project starting in Rwanda in 2023)

Implementation steps

Ongoing project

Conception in 2018, Implementation started in 2019, Grant Agreement until 2024

1 Cooperate with private companies to learn about their training requests
2 Develop training concept, methods and material according to needs. Trainings are run by the companies themselves in a combination of internal experts (for technical trainings, mentorship, practical exercises, etc.) and external experts (for soft skills and language courses etc.)

Cooperation with private sector

Private sector defines trainings needs, implements the training and supports trainees during training with practical hands-on phases and coaching

Some programmes foresee a paid internship at the companies for the best scored trainees, after the conclusion of the training

Achievements and impact

Since 2019: more than 3000 people trained and 400 people found a job at least for 6 months following the training (more than 2000 preliminary jobs after training graduation)

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1 | **DSAA** | Digital Skills Accelerator Africa

Success factors and lessons learnt

- → Transparent and intensive dialogue support **expectation management of private sector** and job seekers who want quick results on the one hand, **and public and political stakeholders** that need more time in some processes on the other hand
- → **Listening to needs** of partners and being aware of cultural context important to **avoid misunderstandings** in the process of setting up trainings and partnerships
- → **Engage companies to ensure professional mentors and hands-on** training with and in these companies
- → Optional **pre-qualification programme for people with disabilities** improves their successes in the trainings
- → System of **paid internship** at participating companies or companies' customers ensures continuous development of trainees' IT skills **and improves readiness to enter international IT job market** or chance of being taken over by the company itself

Language

French, English

Material/ resources

Project Website:

Information on IT training:

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1 | **DSAA** | Digital Skills Accelerator Africa

© E-SERVICES AFRICA (GHANA)


© CODE OF AFRICA (RWANDA)

© GETINNOTIZED (GHANA)


© ATOS EGYPT

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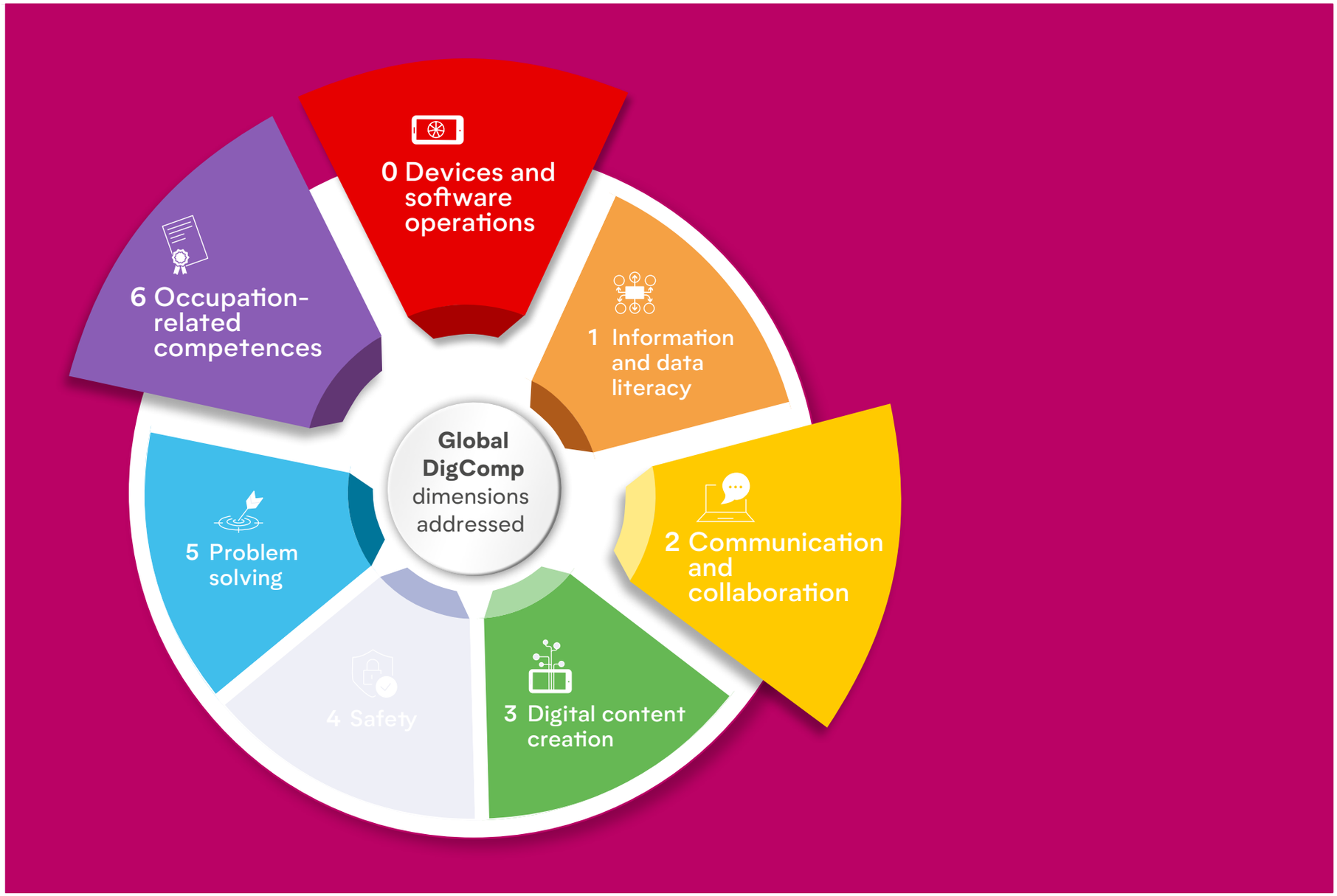
Project 2 | ODC – Orange Digital Center



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2 ODC – Orange Digital Center

	OVERVIEW
	Madagascar, Senegal, Mali, Burkina Faso, Côte d'Ivoire, Guinea, Sierra Leone, Liberia, Cameroon, Ethiopia, Tunisia, Morocco, Egypt, Jordan
	→ GIZ → Orange Middle East & Africa™
	→ Orange™ → BMZ
	→ Ministries (Ministry of Higher Education, Ministry of Employment, Ministry of Women's Affairs and any other ministry related to the projects developed by the ODC), Amazon Web Services, Inc. (AWS), Google, Universities, local NGOs, Development Organisations, etc.
	SDG 4, 5, 8, 9, 17
	Young people and women (graduates or non-graduates, school drop-outs, entrepreneurs undergoing professional retraining, unemployed) Digital literacy workshops are proposed for children from 7 years old
	Train and support digital competences at different levels in young, urban and rural people to boost their skills for better employment prospects, mostly in the IT sector. Also, support and accelerate start-ups to develop their businesses and sign commercial partnerships with Orange and its partners at national and international level.

legend

Tools / processes / approach

Orange Digital Centers are ecosystems that bring together in one physical place all programs supporting youth and entrepreneurship that are **free and open to all**, ranging from training to start-up support, start-up acceleration, and investment in these.

The ODC program is extended to regions through affiliates of the Orange Digital Center deployed inside universities.

Coding Schools

→ Training and internships lasting from 1 day to several months depending on the training and topics, challenges and events (e.g. Hackathons, Orange Summer Challenge), roadmap of activities varies by country

→ Curriculum is adapted to needs of each country's labour market

→ Hard skill topics: e.g. fullstack web development, mobile and game development, Ux/Ui Design, Cyber security, Machine learning, Artificial Intelligence, Blockchain, Cloud Computing, iOT development, DevOps, Digital Marketing

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2 | ODC | Orange Digital Center

Tools / processes / approach

- → Soft skills topics: e.g. project management, CV development, job interview simulation, design thinking, public speaking, business plan preparation, business communication, human skills
- → Participation is free of charge
- → Selection based mainly on motivation, endurance of candidates and space capacity
- → Hybrid learning concept: Trainer do not need to fly to a country to conduct the training but can connect online to the centres and learning groups and a local trainer on the ground supports learning process and training

FabLabs

- → Workshops to create and prototype with digital equipment, e.g. 3D-printers, laser cutters, milling machines
- → Beneficiaries can get trainings and internships on digital fabrication, work on real projects, create and prototype their own products and participate in makethons and different competitions

Orange Fab

- → Start-up accelerator program, offering mentorship trainings for mature start-ups and entrepreneurs with a marketed or marketable service or product and preparing them for national and international commercial contracts with Orange and its partners at national and international level
- → Activities include: coaching, mentoring, promotion and participation in international fairs, demo days

Promotion of innovation ecosystem

Creation of ODC Clubs outside of main cities, inside universities offering various activities: trainings, hackathons, talks

Implementation steps

General overview of curriculum implementation:

1. Sharing of a general activity roadmap and a proposal of concepts to be deployed by the ODC Middle East & Africa (MEA) team
2. Development of a general curriculum including certified courses of ODC partners
3. Labour market assessment to identify needs of local job market in each country
4. Piloting and adaptation of programme based on the most requested training topics in each country, including feedback loops with beneficiaries

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2 | ODC | Orange Digital Center

Cooperation with private sector

Orange is implementing the Orange Digital Center and GIZ is supporting with financial resources and establishing cooperation with other projects and partners

Achievements and impact

Project duration: 2020 – 2023

By 08/2022: 20,000 young people trained (40 % women); placement of 2,250 youth (30 % women) in jobs

Gender equality as core topic included in whole project setup from the beginning: specific indicators for women, specific trainings for women

Success factors and lessons learnt

- → Digital competences change quickly, so the training programme has to remain **flexible** to adapt
- → **Outreach** to potential participants is **best done via universities, social media and Orange** who have a good outreach as a brand
- → Support to the programme by GIZ focusses on financial resources, while the programme set-up and implementation stays in the hands of the private sector partner Orange. This ensures long-term **sustainability** beyond the cooperation with GIZ. However, all training materials are also **intellectual property** of Orange and its partners, and therefore are only accessible for learner within trainings
- → A **physical venue** where learners can meet is **important for peer learning and in-person exchange** and helps to improve participation and completion rates of trainings
- → **The IT equipment** of the centres has a short life cycle (on average 3 – 5 years) and **requires regular investments**

Additional information

Some ODCs such as Jordan, Côte d'Ivoire and Liberia have set up ramps to facilitate access to the ODC facilities for people with disabilities and have also organized training sessions and events dedicated to people with disabilities, e.g. a digital fabrication course, a course on raising awareness of Web accessibility during the International Day of People with Disability

Material/ resources

Homepage:

Facebook page:

Language

English, French and Arabic

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Project 3 | RECOTVET III – Regional Cooperation for the Development of Technical and Vocational Education and Training

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3 RECOTVET III – Regional Cooperation for the Development of Technical and Vocational Education and Training

OVERVIEW	
	ASEAN with focus on Cambodia, the Philippines, Indonesia, Vietnam through bilateral GIZ project; additionally Timor-Leste
	GIZ
	BMZ
	→ ASEAN Secretariat; → Southeast Asian Ministers of Education Organization (SEAMEO) Secretariat; → National Institutions responsible for TVET in each country
	SDG 4, 5, 10
	TVET trainers, instructors and in-company trainers
	Improve the TVET systems in the ASEAN region and adapt them to the requirements of digitalisation

legend

Tools / processes / approach

Training of TVET trainers on digital transformation

- → Mixture of online theoretical input and practical on-site training
- → Digital learning platform hosted by SEAMEO
- → Bottom-up approach whith equal structure for all countries and flexible learner-centred approach to meet needs and demands of participants in each country
- → Joint development of curriculum and training materials by TVET institutions, private sector and relevant stakeholders from ASEAN region for better anchoring into the TVET system as it responds directly to needs of each system
- → Topics such as: Digital content creation, preparation for learning in digital environment
- → Mainstreaming of gender-sensitive topics during training and in materials

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3 RECOTVET III | Regional Cooperation for the Development of Technical and Vocational Education and Training

Tools / processes / approach

Training of change agents

- → Master trainers, TVET teachers and in-company trainers equipped with technical and advisory skills related to digital transformation that advise companies and schools in their digital transformation journey
- → Collaboration with private sector on training of change agents

Industry 4.0

- → Development of training and material specifically for TVET teachers with electrical mechatronic or automation background

Implementation steps

1 Assess the needs of TVET trainers and in-company trainers
2 Develop needs-based content and curriculum e.g. on advisory skills for change agents or professional development of teachers to be fit for industry 4.0
3 Involve subject-matter experts to gather input and to validate developed concept and materials
4 Provide technical assistance and coaching to national institutions and TVET centres to adapt new training to their institutions' context and to anchor the course in the national system
5 Do a progress workshop after the training to gather feedback from participants and from institutions involved and to follow-up on how trainings are implemented on national level

Cooperation with private sector

During the development process, relevant public and private sector stakeholders in ASEAN (the Steering Committee on the ASEAN In-Company Trainer Standards, Chambers of Commerce from ASEAN countries, as well as private training institutes) took part in the workshop series in order to identify needs and demands, develop and validate profiles of change agents and training contents

Achievements and impact

80 hours training on digital competences in a blended learning format for in-company trainers (in progress)

20 people (10 women) trained in advisory skills for change agents in the Digital Transformation Training Course

Specific module on inclusion of disadvantaged groups integrated in in-service training curriculum

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3 RECOTVET III | Regional Cooperation for the Development of Technical and Vocational Education and Training

Success factors and lessons learnt

- → To initiate a **paradigm change** in methodologies and attitudes of teaching **is a long-term process.** To plan for sustainable impact, **regional and national partners that can carry the work forward** beyond the project horizon need to be identified from the beginning
- → **Focus on the topics that are of interest of partners** and match their needs to **ensure their commitment**
- → Adults tend to need more time to adapt to new learning and teaching methods, **so transition to online learning and to new digital teaching methods must be well planned**

Material/ resources

Learning Platform:

SEAMEO VOCTECH Learning Platform:

Standard for In-Company Trainers in ASEAN Countries:

- → Implementing the standard in Thailand: Implementing the Standard for In-Company Trainers in ASEAN Countries (sea-vet.net)
- → Implementing the standard in the Philippines: Implementing the Standard for In-Company Trainers in ASEAN Countries (sea-vet.net)

Regional TVET Teacher Standard for ASEAN:

Regional In-Service Training Modules:

FIT FOR INDUSTRY 4.0 – Innovative Learning and Teaching for Digitalisation and Automation
Fit for Industry 4.0 (sea-vet.net)

Recommendations for Public and Private Partnerships in TVET:

- → Implementing case studies

All publications are also available at:

Language

English

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3.4 Project examples ▶ Project 3

3 | RECOTVET III | Regional Cooperation for the Development of Technical and Vocational Education and Training

Photos above:
In-service training and modules:
Fit for Industry 4.0

Photos below:
Roles and hybrid training of change agents

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Project 4 | #eSkills4Girls Ghana – Programme for Sustainable Economic Development (PSED)

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4 #eSkills4Girls Ghana – Programme for Sustainable Economic Development (PSED)

OVERVIEW

	Ghana
	GIZ
	BMZ
	→ Ministry of Finance (MoF); Ministry of Employment and Labour Relations (MELR) → National Vocational Training Institute (NVTI); Ghanaian-German Centre for Jobs, Migration and Reintegration; National Board of Small-Scale Industries → British Council
	SDG 1, 3, **4**, 5
	Disadvantaged youth, potential and returnee migrants in both rural and urban regions; for #eSkills4Girls the focus is on girls and women
	#eSkills4Girls: Promote access for Ghanaian girls and women to digital professions through ICT-related trainings, to improve the image of ICT occupations among that target group, and to foster ICT-related business development.

legend

Tools / processes / approach

Development of formal, competency-based ICT-related training courses at TVET centres

→ Developed training courses through intense dialogue and communication with project stakeholders

→ Capacity development of six TVET training providers (one school in each project region)

Implementation of non-formal short ICT trainings

→ Cooperation with local non-governmental organisations to enhance IT literacy, particularly among girls and young women

Employment promotion through entrepreneurship and financial literacy trainings, start-up incubation, mentoring programmes and ideas competitions, as well as linkages to opportune financial service providers

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4 | #eSkills4Girls Ghana | Programme for Sustainable Economic Development (PSED)

Implementation steps

1 Development of the training concept, curricula and materials together with implementing partners, according to the needs expressed by the partners and by the target group

2 Training of the trainers in each of the TVET colleges or training of the trainers of partner NGOs

3 Awareness raising and image campaigns to gain participants for the trainings

4 Implementation of the training including a piloting phase to adapt training based on feedback from trainers

Achievements and impact

2018 – 2022:

→ Enhanced access to formalised training for informal apprentices

→ 7 services for women and girls in rural areas introduced, e.g. improvement of digital skills, tailored digital know-how

→ Empowerment for rural women and girls and enhanced productivity in women-led businesses through support of training providers in elaboration and delivery of non-formal digital skills trainings

Success factors and lessons learnt

→ **Social thinking and holistic approach are very important in the development and implementation** of the training course. Don't only focus on technical aspects, but use a **human-centred approach** to best correspond to the needs of the target group

→ Be flexible. **Take care of the beneficiaries' preoccupations and concerns**, when it comes to training modality, logistical challenges, etc., to reach big participation numbers. Address the expressed needs carefully and **maintain a clear and sound communication channel**

→ **Intensive dialogue and communication** with project stakeholders as well as involving them from the beginning, **increases ownership** of trainings

Material / resources

Project website:

Information on #eSkills4GirlsInitiative:

Language

English

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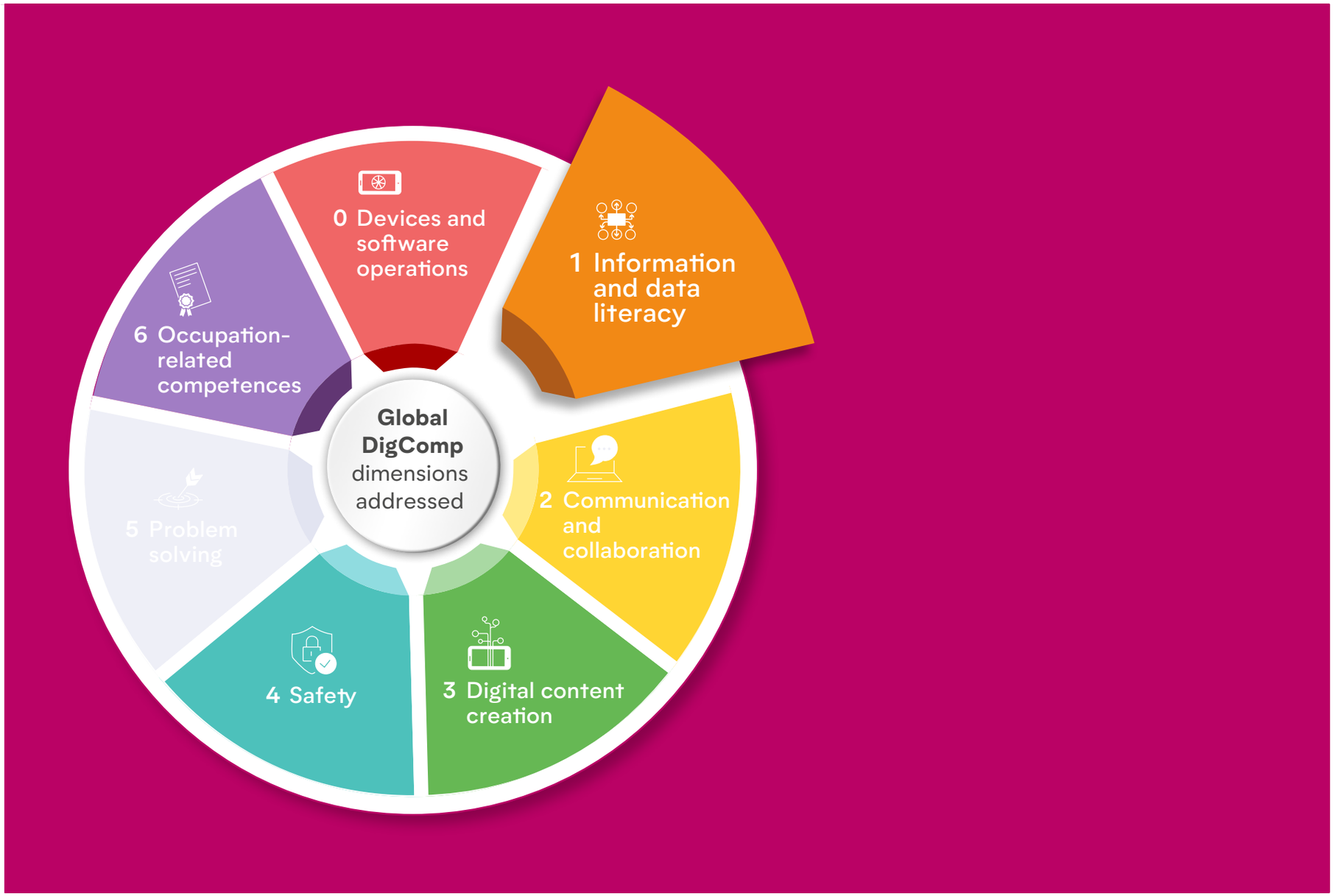
Project 5 | **DS4JI** – Digital Skills for Jobs and Income



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5 DS4JI – Digital Skills for Jobs and Income

OVERVIEW

	South Africa
	GIZ
	BMZ
	→ South African Department of Communication and Digital Technologies and their training agency NEMISA, → South African Department of Higher Education and Training
	SDG 4, 5, 8
	Girls and women, students, management and lecturers of national TVET colleges, human resources experts
	Improve the employment prospect of young South Africans by raising their digital competences, while targeting at least 60 % female beneficiaries

legend

Tools / processes / approach

Needs assessment on digital transformation readiness:

→ Conducted by local university targeting management teams and senior lecturers of TVET colleges in all provinces

→ Basis to develop trainings and strategies to implement digital transformation strategies of the TVET colleges

Based on the needs assessment (in progress):

→ Introduce two methods of improving digital competences in TVET courses

→ Train 1,000 students in digital competences to improve their employability

→ Facilitate the development of a digital transformation implementation plan for each college

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5 DS4JI | Digital Skills for Jobs and Income

Implementation steps

1 Develop needs assessment tool (questionnaire)
2 Data collection with TVET colleges in each province and in urban and rural areas regarding digital readiness of colleges and staff
3 Presentation of results to management levels of participating TVET colleges, political partners and other platforms (public, civil, academic)
4 Selection of TVET colleges for project support, based on needs assessment, the motivation of the TVET colleges and their active participation

Cooperation with private sector

Encouraging private sector partnerships, e.g. supporting DHET to link TVET colleges to Amazon Web Services, Inc. (AWS) for educator training and certification

Achievements and impact

Project in early stage, first achievement: High interest by local stakehold-ers, 70 % response rate to needs assessment

Success factors and lessons learnt

→ Lecturers see activities such as further trainings as extra work, so **management support for the initiative** is crucial (e.g. monitor and encourage participation)

→ Communication with colleges through **political partner** gives more weight to approaches, activities and goals

→ Having a **focal point** in the structure of the implementing partner that supports ideas of the project facilitates communication and implementation of activities

→ Responding to **needs of the target group** and **implementing partners** by **upscaling already existing processes** and products within the TVET system and by avoiding duplication of existing activities makes approaches more sustainable

→ **Involvement of partners in elaboration** and presentation of assessment results increases partners' motivation to participate in next phases (trainings and implementation of digital transformation strategies)

Material / resources

Report: Self-assessment of digital transformation readiness of public TVET colleges in South Africa

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5 | DS4JI | Digital Skills for Jobs and Income

Material/ resources

Executive summary: Self-assessment of digital transformation readiness of public TVET colleges in South Africa

Language

English

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Project 6 | PE – Pro Educação

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6 PE – Pro Educação

OVERVIEW	
	Mozambique
	GIZ
	BMZ
	→ Mozambican State Secretary of Technical and Vocational Education and Training → State Secretary for Youth and Employment → Vocational Training Centres of IFPELAC (National Institute for Vocational Training and Labour Studies)
	SDG 4, 5, 8
	Female apprentices or recent graduates of vocational training centres, young women with or without professional qualification
	Improve the digital competences of girls and women to increase their employability or improve self-employment opportunities
legend	

Tools / processes / approach

Training on basic digital competences and employability or self-employment including mentoring phase

→ Duration of 2 – 3 months, 4 hours per day

→ Content developed based on existing national curricula on basic IT competences and life skills, tested and adapted by GIZ experts

→ Initial programme financing of mentors that implement trainings

→ First module: Basic digital competences. Example topics: How to use a computer, basic hard- and software skills

→ Second module: Choice between employability or entrepreneurship. Example topics: Consultation of job portals, how to write a CV, apps for business efficiency

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6 | PE | Pro Educação

Tools / processes / approach

Female mentorship

- → Duration of 3 months upon completion of training on basic digital competences
- → Female mentors as trainers, coaches and role models (pre-assessment and training of candidates before course starts) and facilitators of peer-to-peer exchange among graduates (online or face-to-face meetings)
- → Support topics such as business development or job search via coaching sessions and regular exchange, after completion of modules

Implementation Steps

1. Mapping existing activities and stakeholders
2. Analysing existing infrastructure of potential training providers
3. Procuring IT equipment
4. Developing training concept and materials together with implementing partners
5. Contracting and training of female mentors (initially by project, in future via Vocational Training Centres)
6. Piloting phase to adapt training based on feedback from mentors and trainees
7. Assessing skills of potential trainees
8. Implementing trainings (ICT and employability/ self-employment)
9. Implementing mentorship and facilitation of peer-to-peer learning via different communication platforms
10. Final evaluation 3 months after course completion

Achievements and impact

- → Between 2019 and 09/2022: 600 women and girls trained
- → Project targets will be overachieved

Success factors and lessons learnt

- → A **business plan jointly** developed by GIZ and the training centres helps to make the training courses viable and sustainable
- → Political support and inclusion of vocational training centres' management team in the development and implementation of the courses increases **ownership and sustainability**. Supporting centres with equipment and a dedicated project staff on the ground can increase their commitment and motivation.

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6 | PE | Pro Educação

Success factors and lessons learnt

- → **Integration of course content** into already existing vocational courses is foreseen to increase digital and life skills of all vocational trainees. In addition, vocational training centres are supported to **continue to offer stand-alone** courses for income generation.
- → Coupling trainings with **follow-up mentorship** has positive impact on employability. However, it rests on careful selection and training of mentors. The integration of **mentors as staff at training centres** is best done from the very beginning.
- → **Start-up capital** is often lacking in the local ecosystem. Setting up cooperation with microcredit institutions supports the success of the entrepreneurship trainings.

Material / resources

Manual de Competências básicas de TIC – eSkills4Girls V.01

Material / resources

Manual do Módulo Orientação ao Emprego – eSkills4Girls V.01

Manual do Módulo de Empreendedorismo – eSkills4Girls

Language

Portuguese

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6 | PE | Pro Educação

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Project 7 | Strengthening National Capacities to Develop and Deliver Quality E-Learning in Higher Education Institutions in Jordan

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7 Strengthening National Capacities to Develop and Deliver Quality E-Learning in Higher Education Institutions in Jordan

OVERVIEW

	Jordan
	UNESCO
	GIZ financed by BMZ
	→ Ministry of Higher Education and Scientific Research (MoHESR) National Centre for E-Learning and Open Educational Resources → UNHCR
	SDG 4
	Staff of Ministry of Higher Education, Teaching personnel of public and private universities
	Improve the sustainability and resilience of the higher education system through the adoption of a comprehensive, systematic, and institutionalised approach to e-learning

legend

Tools / processes / approach

Drafting and piloting **practical guidelines** on e-learning on national level with involvement of the partners

→ Provide teaching staff with comprehensive guidance and training on how to design, manage, implement, and evaluate e-learning programmes while ensuring quality standards

→ The draft guidelines are linked to the capacity development training programme, including references to the course materials and resources

→ The draft guidelines contain seven sections, namely: Context of online learning and teaching, instructional design for online settings, competences and applied methodologies, online open learning settings, support for learners and faculty, ICT to support online learning, ethics and society

Designing and implementing an **e-learning capacity development training programme** to qualify master trainers

→ Duration of 6 weeks with 20 live lectures, two live presentations, two assessments (live discussions and one online questionnaire)

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7 Strengthening National Capacities to Develop and Deliver Quality E-Learning in Higher Education Institutions in Jordan

Tools / processes / approach

- → Individual and group activities and tasks
- → Implemented via Moodle, hosted by the MoHESR/Yarmouk university server
- → Personalised support to the master trainers on how to adapt e-learning programmes to be more inclusive and to address the needs of different learners

Equipping one studio at the National Centre to develop quality e-learning content, in particular with video, audio sounds equipment and content software, e.g. a one-year license for Adobe Creative Cloud Suite for 5 users

Implementation Steps

1. Development of selection criteria for potential participants
2. Pre-assessment to understand participants' previous experience of e-learning
3. Implementation of the training according to availability of participants
4. Final exam after the training to evaluate participants' learnings and competence to work as master trainers

Achievements and impact

Trained staff of MoHESR and master trainers of 23 public and private universities on how to use e-learning content and methodologies in teaching

Success factors and lessons learnt

- → Participants received **full course and training material** to ensure knowledge sharing and to benefit other higher education institutions
- → **Translation of various supportive technical documents** (English-Arabic, Arabic-English) on blended/e-learning approaches and good practices in different countries adds ideas and input to discussions and knowledge of participants
- → Development of selection criteria and course content **together with partner universities and e-learning centre**s ensures commitment of partners
- → **Adjustment of timing and dates of live sessions to needs of participants** ensures higher participation and engagement
- → **Individual support during and after the training** improves use of online tools, participants were not familiar with before the training

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7 Strengthening National Capacities to Develop and Deliver Quality E-Learning in Higher Education Institutions in Jordan

Success factors and lessons learnt	→ Development of training and guidelines takes time and projects should **ensure the project duration is long enough to be able to not only develop them but also pilot and implement them**
Language	English, Arabic

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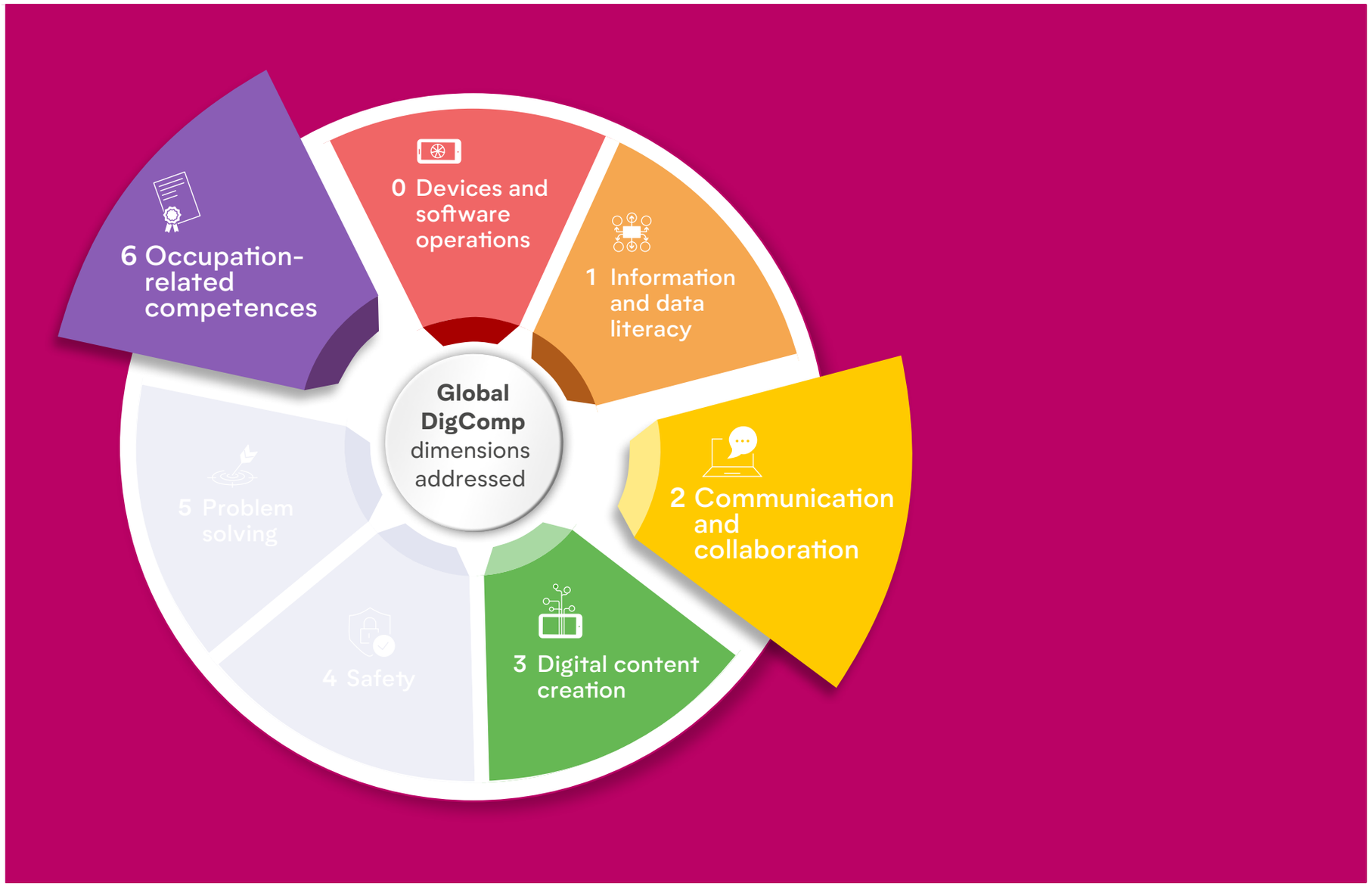
Project 8 | MOVE-HET – Labour Market Oriented Vocational Education, Higher Education and Training



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8 MOVE-HET – Labour Market Oriented Vocational Education, Higher Education and Training

OVERVIEW	
	Jordan
	GIZ
	BMZ
	→ Ministry of Labour → Ministry of Digital Economy and Entrepreneurship → Ministry of Higher Education → Ministry of Education, → Technical Vocational Skills Development Commission → National Sector Skills Councils → Various other universities, training providers, private companies, and labour associations → University of King Hussein
	SDG 1, 3, **4**, 5
	Unemployed youth from 16 years old, students and graduates
	Bridging the skills gap in the Jordanian labour market and improve employability of youth with skills that meet the demands of the labour market
legend	

Tools / processes / approach

Dual Study Programme in Higher Education

- → 7 dual study programmes established at 3 universities, in cooperation with 65 companies (e.g. KPMG, DHL, IKEA, Hapag Lloyd, etc.)
- → 4 – 5 years with interchanging theoretical and practical semesters in majors such as Computer Engineering, Industrial Engineering or Management and Logistic Science
- → Students spend practical semesters working in companies participating in the programme
- → Company pays students monthly compensation during practical phases
- → Final evaluation through university exams and company supervisors
- → Study programmes are partly delivered online on learning platform, some courses run in a blended learning format
- → Programmes developed jointly by universities and company representatives, include occupation-related IT competences

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8 | MOVE-HET | Labour Market Oriented Vocational Education, Higher Education and Training

Tools / processes / approach

Dual Study Programme in TVET

- → Focus on Logistics and ICT occupations
- → Established at 12 TVET institutions
- → IT equipment and internet access provided
- → Involvement of stakeholders at institutional and operational level, including students and parents
- → Training to reach digital literacy and enable youth to adopt work habit using technology

Support for building public-private partnership (PPP)

- → Supporting Jordanian Ministry of Labour and other relevant stakeholders in creating partnerships with the private sector
- → Promoting stakeholder involvement and effective communication and collaboration to improve demand-driven trainings and foster employment and employability
- → Creation of an Orange™ Digital Centre Club with free digital programmes and training opportunities for improving digital skills of students at German-Jordanian University
- → Training of partners in relevant digital communication and collaboration tools (videoconferencing software, collaboration platform)

Implementation Steps

Ongoing project: 2017–2023

PPP

1. Stakeholder mapping, including relevant private sector companies
2. Needs assessment of private sector companies in order to assess feasibility of PPP
3. Creation of National Sector Skills Councils where private sector is represented and that function as advisory bodies for the Jordanian government regarding labour market skills demands
4. Training of private sector partner in relevant online communication and collaboration tools, such as MS Teams to improve digital literacy

Cooperation with private sector

Private sector participates in the establishment of national sector councils. The German-Jordanian Centre of Excellence, a TVET centre, works closely with Orange™ and the National Sector Skills Council to develop a private-sector led board of directors for the centre, making it the first in Jordan to have such a governance model. Private sector also contributes financially to the centre and with equipment

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8 MOVE-HET | Labour Market Oriented Vocational Education, Higher Education and Training

Achievements and impact

- → Since 2018: 76 students enrolled in 7 dual study programmes in higher Education
- → 2000+ graduates from dual study programmes in TVET

Success factors and lessons learnt

- → Commitment from partners is key. **Listen to their needs, but manage expectations:** Communicate budget constraints, for example for ICT equipment
- → **Online collaboration platforms** and virtual meetings help the multi-stakeholder management but are often **not (yet) used by partners.** To move from traditional channels (cell phones) to these tools, the project needed to set up a suitable platform and supported partners with equipment and training
- → For training partners, **blended learning** rather than full virtual learning was more appropriate for the context and culture. The **trainings of the educational institutions** on how to use the digital tools provided and the development of the cooperation platform added value and helped to **improve sustainability and continuity of operations** by creating a **repository of learning resources**
- → Higher education programs often focus more on theory than practice. Dual study programmes with **practical components** can bridge the gap with the labour market demands

Material / resources

Dual Studies at German-Jordanian University:

Jordanian Digital Transformation Strategy

MOVE-HET TVET Cluster Presentation

Language

English

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Project 9 | STEP II – Sustainable Training and Education Programme

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9 **STEP II –** Sustainable Training and Education Programme

OVERVIEW	
	Ethiopia
	GIZ
	BMZ
	→ Ethiopian Ministry of Science and Higher Education (MoSHE) → Ministry of Labour and Skills and Ministry of Education → Selected TVET colleges and universities → Companies, associations of employers and chambers → Public education and industry authorities
	SDG 4, 5, **8**, 9
	TVET and higher education graduates, students, trainers, staff of partner organisations
	Promoting digital skill training as a means for employment for graduates of vocational schools and universities

legend

Tools / processes / approach

Basic digital skills training

→ Developing curriculum as well as teaching, training and learning material

→ For trainers, students and graduates, staff of partner organisations

→ Topics: Computer basics, the internet, cloud service and world wide web, productivity programmes, Office 365, computer safety and security, digital lifestyle

→ Implemented in TVET centres and included in Training of Trainers

Workplace digital skills

→ Skills to operate sector-specific digital technology

→ For trainers and graduates

→ Aims to improve employability of graduates

→ Topics: Sector-specific software such as hotel property management systems (Opera, IDS, CNET), AutoCAD, CNC programmes, Project Management Software, Digital Marketing Tools, Collaboration via digital platforms

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9 | STEP II | Sustainable Training and Education Programme

Tools / processes / approach

Advanced Digital Skills Training for job placement

- → Skills to create, improve and maintain digital technology
- → For higher education graduates
- → Topics: website creation, programming, security, digital databases, cloud computing
- → Combination of theoretical input and internship at IT companies

Digital scout project

COVID response intervention to support TVET colleges and universities to continue training through e-learning options:

- → Supporting trainers to develop digital contents
- → Creating digital resources and library
- → Developing web pages for TVET colleges to connect with their students

Piloting of a blended learning training for TVET trainers that will be a focus for the implementation of STEP III (follow-on project)

Implementation Steps

1. Conduct a digital skills needs assessment, involving the supply (TVET colleges and universities) and demand (employers and companies), political stakeholders, private sector stakeholders and TVET centres
2. Cooperate with private sector and IT companies to design the training concepts and curricula for the different trainings
3. Training of master trainers (trainers of TVET colleges) to deliver basic digital skills trainings to their graduates
4. Contract IT companies/trainers to deliver workplace digital skills training
5. Cooperate with IT associations to place graduates in IT companies for internship, train trainers, conduct stakeholder dialogue and develop digital skills framework and coordinate digital scout project
6. Build a network of engaged IT companies that are willing to take graduates as interns for practical part of training
7. Organising job fair for graduates
8. Tracer study

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9 STEP II | Sustainable Training and Education Programme

Cooperation with private sector

- → Technical and financial cooperation with IT companies and ICT associations
- → Curriculum and training design according to the needs of the private sector, local subsidy contract with private sector companies for development and delivery of some of the trainings
- → IT companies accept graduates for internships and participate in job fairs

Achievements and impact

2019 – 2021

- → Trained 1,778 graduates (61% female) in digital skills (basic, advanced and workplace skills)
- → Trained 336 trainers and ministerial staff in workplace digital skills and basic digital skills
- → Continuous participation of MoSHE led to upscaling of the Basic Digital Skills training as mandatory for all trainers

Success factors and lessons learnt

- → **Digital skills needs assessment** of private sector companies is the foundation for a good demand-driven curriculum
- → **Involvement of all stakeholders** (ministries, students, graduates, companies) in development of trainings ensures that trainings tackle the needs of the sector in line with the national political agenda
- → Digitalisation and its impact in the future world is not known to all stakeholders involved and therefore not always perceived as important. A **continuous dialogue and follow-up** with these stakeholders improve their understanding and engagement for the topic
- → Being close to partners, e.g. having **office spaces in the ministries**, facilitates dialogue and formal and informal communication
- → **"Digital Champions"** as persons that engage for the topic and as role models for students or graduates improves visibility of importance of the topic and the activities implemented
- → **Upscaling of trainings** and integration of topic into policies (e.g. through a framework) is a long process and takes time and regular follow-up
- → **Engaging private companies for internships** is the first step for better employability as take-over rate of interns is very high

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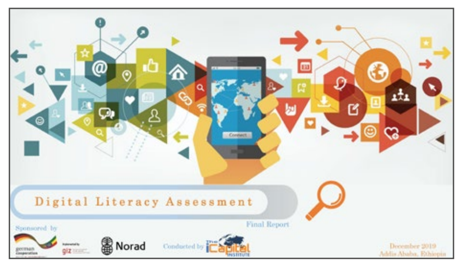
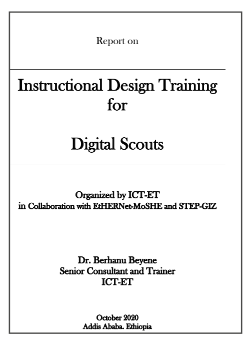
3.4 Project examples ▶ Project 9

9 | STEP II | Sustainable Training and Education Programme

Material / resources



Digital Literacy Assessment



Report on

Instructional Design Training for

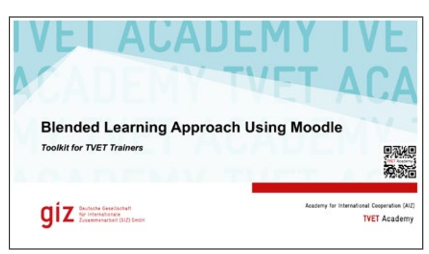
Digital Scouts

Organized by ICT-ET
in Collaboration with EtHERNet-MoSHE and STEP-GIZ

Dr. Berhanu Beyene
Senior Consultant and Trainer
ICT-ET

October 2020
Addis Ababa, Ethiopia

Report on Digital Scouts



Toolkit for blended learning

Language English

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9 | **STEP II** | Sustainable Training and Education Programme

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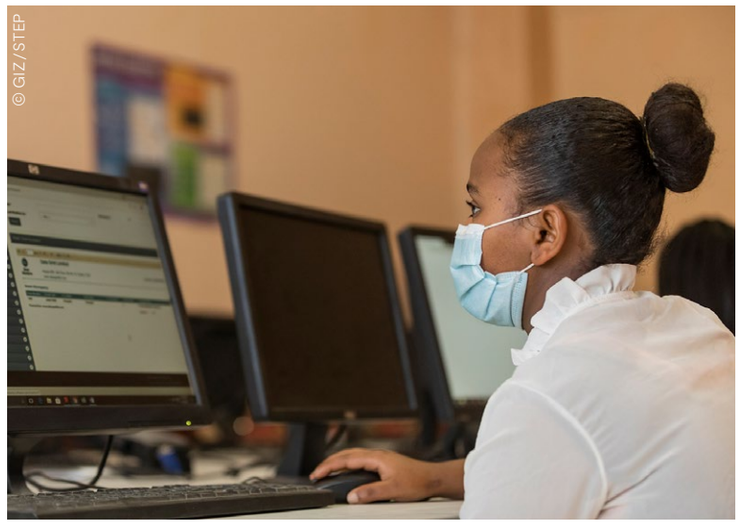
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Project 10 | WRN – Work Ready Now

10 WRN – Work Ready Now

OVERVIEW

	27 countries worldwide
	Education Development Center (EDC)
	→ USAID → Mastercard Foundation → Canadian International Development Agency (CIDA)
	→ National Governments → Ministries for Education → Ministries for Youth → Ministries for TVET → privately managed TVET and Higher Education institutions (depending on the countries) → Mastercard Foundation
	SDG 4, 8
	Local teachers and students in formal education and/or in TVET institutions; students in universities; youth-led organisations that reach youth not in education, employment, or training, or youth in vulnerable situations
	Improve skills of youth needed in today's workplace through a customisable, standards-based work readiness curriculum (addressing both employment and self-employment)

legend

Tools / processes / approach

Work Ready Now course

→ A general curriculum that can easily be customised and adapted to a country's needs, local culture, target population's background (literacy levels, age, etc.), including translation of content

→ Course duration: 100 hours

→ Mandatory and optional modules; including one module of 11 hours on Digital Literacy that gives introduction to basic digital competencies

→ Training-of-trainers to implement the course in target countries

→ Assessment tools (formative and summative) that can be adapted to the local context

Implementation steps

1 Development of the general curriculum according to needs found in projects and objectives formulated (in some cases, includes an analysis of existing offerings to assess complementarities and gaps to be addressed)

2 Curriculum adaptation workshops at the start of each project, with participants from government, youth and subject matter experts

3.4 Project examples ▶ Project 10

10 WRN | Work Ready Now

Implementation steps

3 Training of local trainers and teachers to implement the course based on adapted curricula

4 Implementation duration of course depending on target group needs, total of 100 hours (11 hours for the digital competencies module)

5 Monitoring / support for quality implementation (local capacity built for this purpose)

Cooperation with private sector

→ Cooperation with private sector includes micro, small, medium and large businesses, depending on the context and purpose of cooperation

→ Partnerships with local businesses (micro to large) play a critical role during adaptation of materials and during implementation by providing hands-on practice opportunities for WRN trained youth, such as internships, apprenticeships, visits, shadowing, etc.

→ Strategic partnerships with large-size companies help advance the reach and quality of WRN (some examples include Cisco, Intel)

Achievements and impact

Around 1 million youth reached with the Work Ready Now curriculum since 2009

Module on basic digital literacy taught to about 100,000 youth since 2015

Results of a multi-country survey, the average job placement rate was 68 %

Success factors and lessons learnt

→ Assure **internet access and equipment** for the target group: Sometimes the smart device most used by target groups is a mobile phone and not a laptop, so the course concept has to be designed flexibly enough

→ Learning on digital citizenship and safety and security do not require any practical application or access to internet and can be **implemented without smart devices**, if necessary

→ Differences between competencies of trainers and target groups in different countries makes **local adaptation of Training-of-Trainers approach** very important

→ Use **IT centres of institutions and communities** wherever possible to improve **access** to devices and internet

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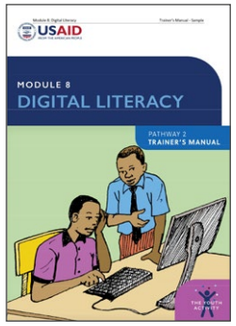
10 | WRN | Work Ready Now

Success factors and lessons learnt

→ Digital skills and digital citizenship are very important for youth and their opportunities in the future labour market, **and a high interest** in learning **how to safely navigate the digital world** and how to best use it for their own purposes **usually already exists within the target group**

Material / resources



Module_Digital_Literacy_examples

Language

English

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10 | WRN | Work Ready Now

Compilation of photos during WRN trainings and adaptations, across continents and with youth in-school including TVET institutions and out-of-school in their communities

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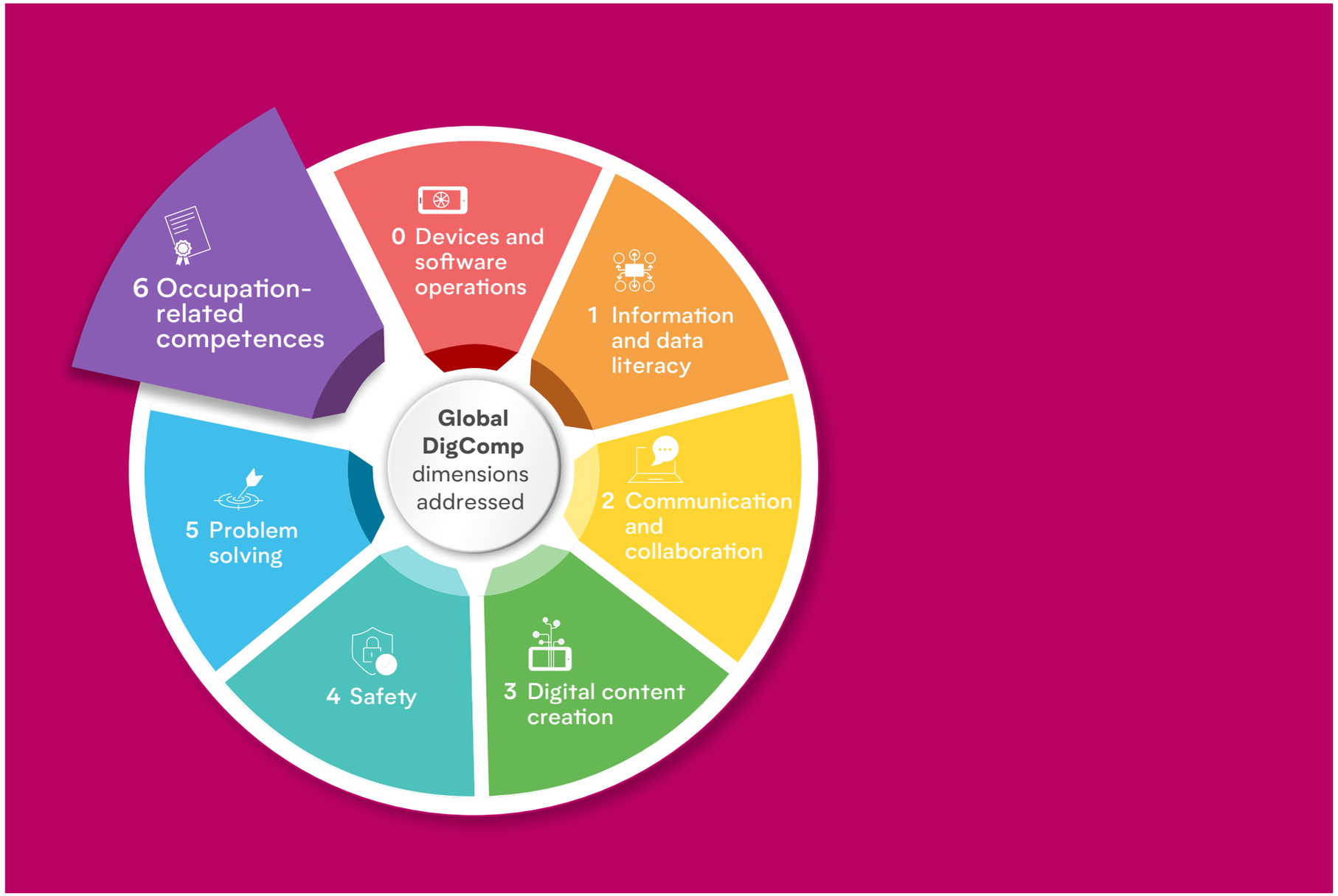
Project 11 | WRD – Women Going Digital



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11 WRD – Women Going Digital

OVERVIEW

	Argentina, Brazil and Peru In 2023 the course will be implemented in Cameroon, Namibia and Rwanda
	→ German Chambers of Commerce and Industry (AHKs) → GIZ Business Scouts for Development Programme
	BMZ
	Private companies, Provincial authorities, Women empowerment groups
	SDG 4, 5, 9
	Women of all ages interested in digital topics; to be able to participate in the course on the online platform they need basic knowledge on how to operate a computer and navigate the internet/e-learning platform
	→ Give women an understanding of digital transformation and on how different topics and technologies are interlinked → Women are underrepresented in digital and tech areas; improvement of their competences improves job prospects of women → Empower women to include women's perspective in development of new technologies

legend

Tools / processes / approach

E-learning course as further training on digital transformation with weekly live online sessions for discussions and additional input:

- → Available on Learning Management Platform "atingi"
- → Content: podcasts, videos, interactive magazines, tests
- → 16 modules, total of 40 hours implemented in 2.5 months
- → Participants can work on the content in their own pace but 2 modules per week are recommended
- → Participants pay a small fee that is used to cover administrative costs of the course, selected participants from partner organization receive scholarships
- → Topics such as: Agile methods, disruptive technologies, Internet-of-things (IoT), artificial intelligence (AI), blockchain, extended reality (XR), automatization, big data, data privacy and data security

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11 | WRD | Women Going Digital

Implementation steps

1 Adaptation and translation of the course originally created for Brazil/Portuguese

2 Kick-off and final meeting

3 Implementation as a blended approach: Asynchronous learning sessions on atingi learning platform are combined with live webinars, moderated by Chamber of Commerce facilitator with guests invited experts to dive deeper into certain topics of the course, weekly meetings of 30 min. to discuss course content

4 Individual follow-up of learners by facilitator

5 Engagement of participants in alumni network

Cooperation with private sector

Cooperation with private companies like Siemens and SAP and other partner organisations to organise webinars and to promote the course

Achievements and impact

→ More than 300 women trained in Argentina, Brazil and Peru in several training rounds so far

→ Women feel more informed and empowered to speak about the topics discussed in the course

→ Alumni participate in live webinars and exchange with current participants

Success factors and lessons learnt

→ **Clear structure** of the e-learning course (detailed schedule of the tasks, time slots of the live webinars and a system for follow-up with the participants) keeps participants engaged

→ Support of the participants in the learning process through **open communication channels** and **individual follow-up** keeps them motivated, especially those participants that tend to be less active

→ Virtual onboarding is easier if participants **possess basic knowledge about computer and ICT**, allows to focus on course content

→ Regular **update of the course content** needed, as topics are recent and information on them change quickly

→ Creation of an **alumni network** promotes peer-learning and engagement of the participants after the course; also serves as a potential source for experts for the live sessions

→ **One staff on the ground needed** for in-person support of the learning process and technical troubleshooting

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11 | WRD | Women Going Digital

Success factors and lessons learnt

→ Good practice from Peru: Participants deliver an elevator **pitch about a topic on digital transformation** at the end of the course – this increases motivation and participation

Material / resources

Cronograma WGD

Women going digital 2022 – AHK – Info Edicion 4

Language

Portuguese and Spanish, 2023: also English and French

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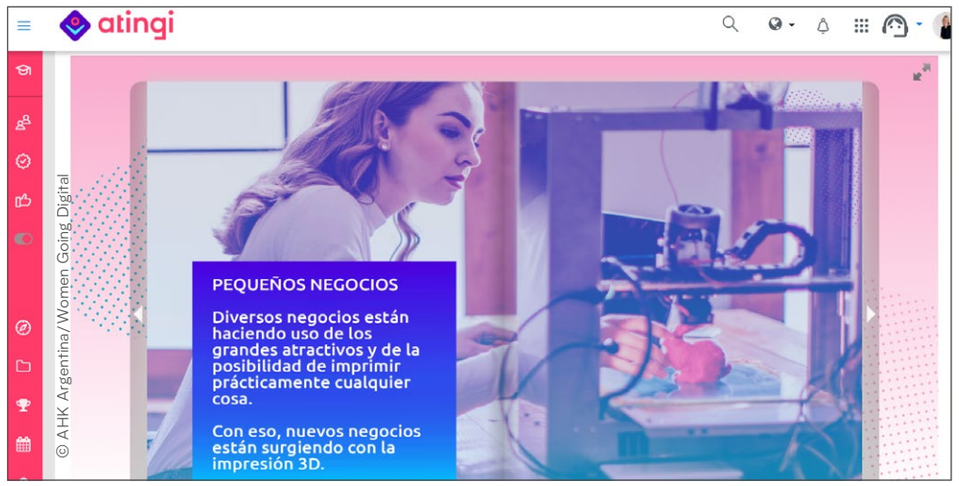

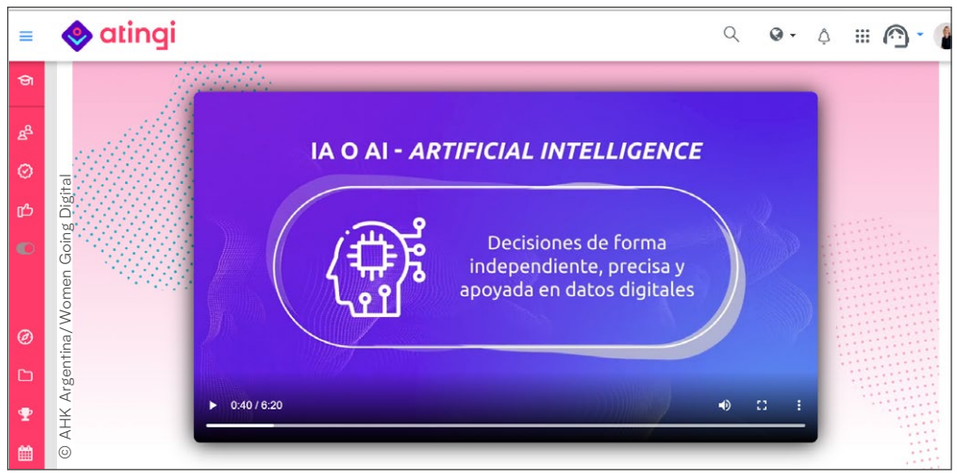

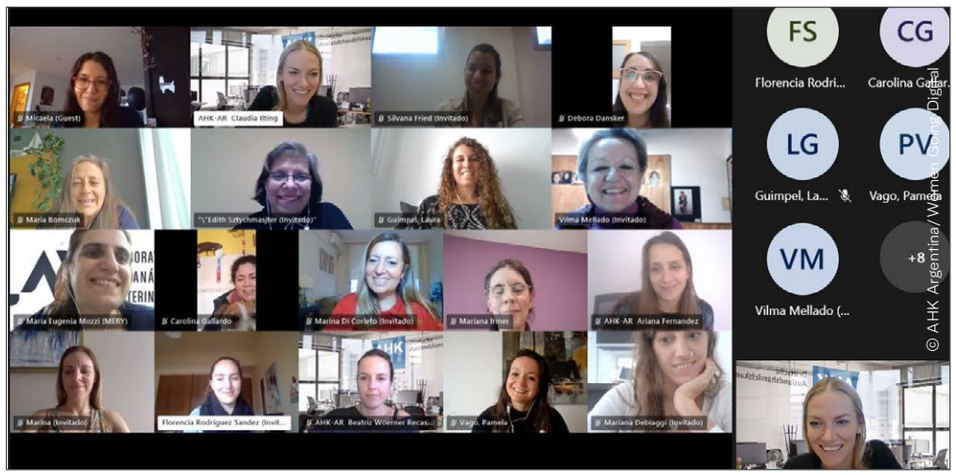

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Project 12 | dSkills@EA – Digital Skills for an Innovative East African Industry

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12 dSkills@EA – Digital Skills for an Innovative East African Industry

OVERVIEW	
	Member States of the East African Community: Burundi, Kenya, Rwanda, South Sudan, Tanzania, Uganda, DRC
	GIZ
	BMZ
	→ East African Community (EAC) Secretariat → Inter-University Council of East Africa (IUCEA) → Nelson Mandela African Institution of Science and Technology (NM-AIST) → University of Oldenburg → German Academic Exchange Service (DAAD)
	SDG 1, **4**, **8**, **9**
	Young students, graduates, young entrepreneurs as well as industry and academia employees
	Employment and innovation-related digital skills of young people in the East African Community Partner States are strengthened

legend

Tools / processes / approach

Development of a Master Programme "Embedded and Mobile Systems (EMoS)"

→ Curriculum developed together with private sector, tailored to their needs; Modules include: Information systems, entrepreneurship, soft skills, embedded systems and mobile computing, data science, cybersecurity

→ Delivered together with an East African-German academic consortium of universities at the Centre of Excellence for ICT in East Africa (CENIT@EA), which is located at the Nelson Mandela African Institution of Science and Technology (NM-AIST), Arusha, Tanzania

→ Duration of 2 years, includes internships and research on digital solutions for companies

→ Aims to fulfil the demand of the private sector for highly skilled graduates in the digital sector by involving businesses, such as through guest lecturers, summer schools, internships, entrepreneurship support

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12 | #dSkills@EA | Digital Skills for an Innovative East African Industry

Tools / processes / approach

Short Course Trainings:

Trainings offered online, blended/hybrid format, or physical

Training delivery through local companies, master students, etc., depending on the topic

- → Short Term Trainings
  - → Developed for staff at companies and universities, ICT professionals, students, lecturers and unemployed graduates
  - → Topics such as: Cybersecurity, data analytics, machine learning, predictive business analytics, online didactics, soft skills, android mobile applications
- → Entrepreneurship courses
  - → Sectors include agriculture, health, banking, digital business analytics
  - → Combination of online trainings and in-person pitching events and bootcamps
- → Job Matchmaking
  - → Development and launch of an online job matchmaking platform “Skillsmatch” for unemployed graduates and businesses

Regional cooperation

- → dSkills@EA and the Centre of Excellence CENIT@EA promote cooperation among universities and companies in the EAC in teaching digital skills and marketising digital innovation
- → Goal is to connect needs of private sector with approaches of university
- → Establishment of a regional digital innovation network with entrepreneurship support organisations

Implementation steps

Ongoing: 2021 – 2025

Master Training Programme:

1. Needs assessment of labour market skills demand, focusing on the digital sector
2. Development of the Master Programme by the universities according to the assessment and together with private sector companies. Integration of “non-digital” skills needed, such as soft skills and project management
3. Pilot Master Programme including regular monitoring and joint adaptation of curriculum and Master Programme structure; students are required to do internships to apply their theoretic knowledge in practical environments

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12 | #dSkills@EA | Digital Skills for an Innovative East African Industry

Implementation steps

4 Regular steering and cooperation meetings among universities and private companies to evaluate programme, existing needs and to flexibly adapt the programme

Digital Skills Trainings:

1 Needs assessment of labour market skills demand, focusing on the digital sector, and identifying training topics
2 Development of training curriculum with international and local experts based on the needs of different target groups
3 Implementation of the training programmes in the EAC Partner States

Entrepreneurship:

1 Overview of the entrepreneurship ecosystem landscape in the EAC
2 Establish cooperation agreements with entrepreneurship support organisations
3 Strengthen the enabling environment for digital innovation at universities
4 Conduct innovation challenges and provide marketisation support to university graduates

Cooperation with private sector

Technical cooperation where universities and companies meet in exchange formats organised in cooperation with the East African Business Council to discuss private sector needs related to digital skills and industry-academia collaboration

Achievements and impact

Until mid-2022:

→ 128 full-time students in the master programme
→ Over 800 people trained in short-term trainings
→ Online learning platform and online job matchmaking platform “Skillsmatch” developed and launched
→ EMoS Master Programme certified and accredited in Tanzania
→ Cooperation agreements signed between CENIT@EA and private sector (e.g. SAP, IBM, Kiira Motors)

Success factors and lessons learnt

→ **Regular Steering committee meetings**, ongoing involvement of technical partners in the **technical committees** and **use of an electronic cooperation platform** for information flow facilitates good cooperation and ownership of involved partners

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12 | **#dSkills@EA** | Digital Skills for an Innovative East African Industry

Success factors and lessons learnt

- → **Work with local institutions for the training delivery** ensures localisation of training material and sustainability of trainings
- → **Regular communication, personal contacts and involvement of partners** right from the beginning builds trust and good working relationships
- → **Focus on real needs (even if they are basic needs)** and do not impose outside agenda or "trends" if they are not suitable for the context and the skills demanded
- → **In-person meetings** are more efficient if remote meetings struggle due to problems of connectivity, lack of appropriate network infrastructure
- → **Monitor students' participation closely** and try to understand the reasons of drop-outs or lagging behind, so training set-up can be adapted according to their needs; **minimum requirements** (e.g. in term of hours spent learning, engagement in online sessions, etc.) also improve participation

Material / resources

Homepage:

Access to online learning platform, not public

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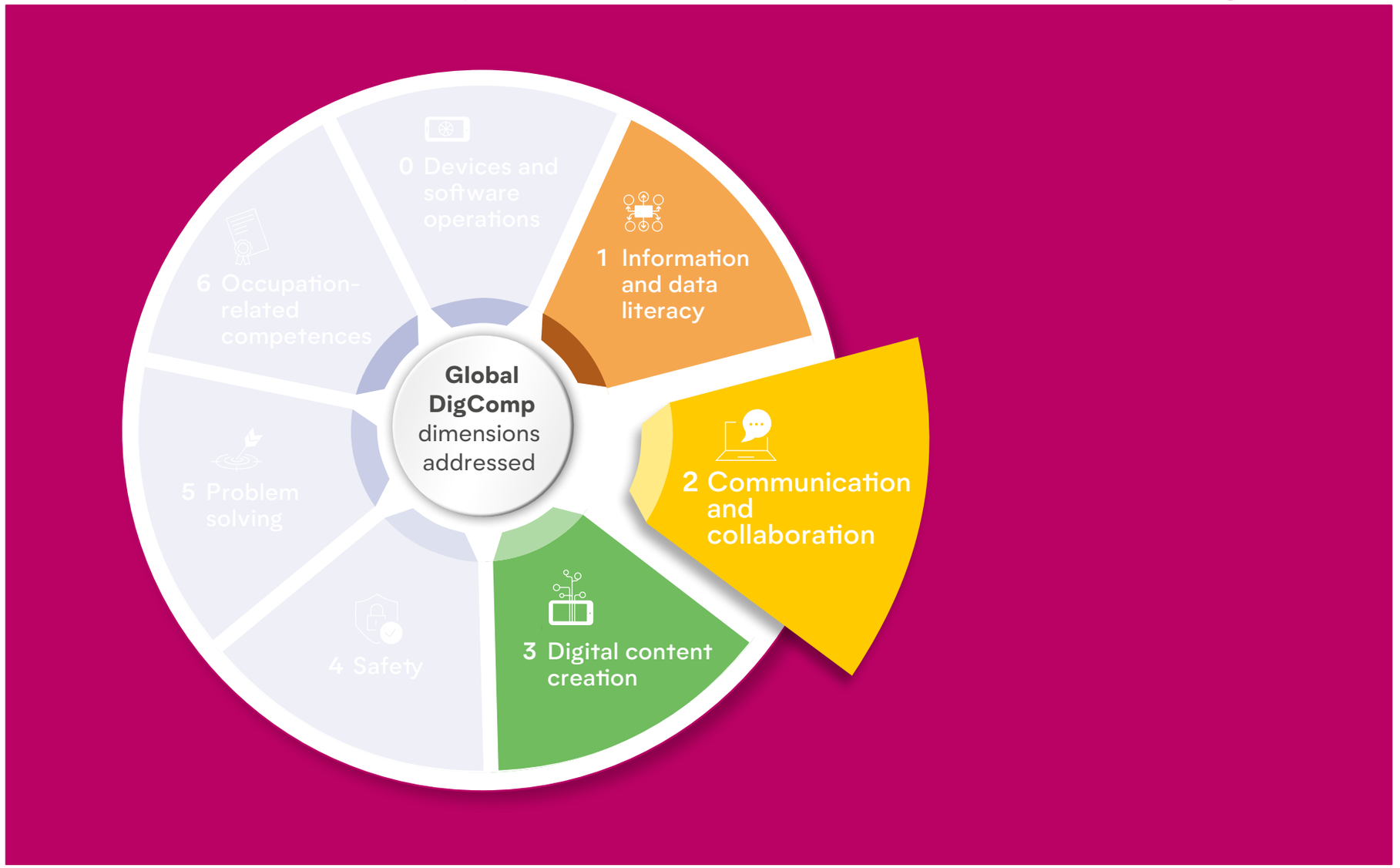
Project 13 | ACFPT – Appui Complémentaire à la Formation Professionnelle et Technique Complementary Support for Vocational and Technical Training



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13 ACFPT – Appui Complémentaire à la Formation Professionnelle et Technique Complementary Support for Vocational and Technical Training

OVERVIEW

	Burundi
	ENABEL
	Directorate-General for Development Cooperation and Humanitarian Aid (DGD) of Belgium
	→ Ministry of Primary and Secondary Education and Scientific Research → Ministry of Public Service, Labour and Employment → TVET centres
	SDG 1, **4**, 8
	34 digital focal points from 17 out of 18 partner TVET centres (Centres d'Enseignement des Métiers)
	Strengthen competences of the trainers on the essential bases of pedagogy and basic digital skills to increase the quality of learning and promote the attractiveness of vocational education

legend

Tools / processes / approach

Training of Trainers "ICT Focal Points" at TVET centres

→ Training of 2 focal points (teachers) per TVET college that are responsible for training their colleagues afterwards

→ Training on the use of New Information and Communication Technologies for Education like internet research, use of open educational resources, use of multimedia rooms as teaching aids, digital learning platforms and digital collaboration tools

→ Training content developed according to the expressed needs of the TVET colleges and validated by trainers and project team

→ The products proposed (training resources and pedagogical support) are validated by local experts and users

Multimedia rooms

→ Equipment of multimedia rooms in each college with computers, tablets, projector and good internet connection for use by trainers

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13 | ACFPT | Appui Complémentaire à la Formation Professionnelle et Technique

Tools / processes / approach

→ Partnership with **Bibliothèques Sans Frontiers** (French NGO) that allows the TVET centres to access a dedicated digital library adapted to their needs in terms of training materials

Implementation steps

Ongoing (2014 – 2024):

1 Joint identification of needs with trainers from TVET colleges, trade and employment representatives and project team

2 Development of training concept with project team and focal points from TVET colleges

3 Training of focal points as “master trainers”

4 Focal points implement training in the TVET colleges and train staff and trainers

5 Focal points available as mentors for their colleagues during the daily routine of teaching at the TVET centres

Cooperation with private sector

Technical cooperation: trade and employment representatives and the Chamber of Art and Artisanate participate in the skills needs assessment and prioritisation of training modules development

Achievements and impact

One extract: 196 trainers were trained by the ICT focal points just before the start of the 2021–2022 school year so that they could put their new skills into practice

Success factors and lessons learnt

→ Conduct **joint training needs analysis**, and elaborate a **concerted and inclusive workplan** with all key stakeholders to improve sustainability and ownership of training

→ Use of **videos for training instead of written documents** improves motivation and learning success of learner

→ It is important to **assess the existing digital competences** of the participants as there is great variety. Training sessions have to be **adapted according to the actual needs**

→ **Consider the context** before starting the implementation of the project to be aware of **possible risks**

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13 | ACFPT | Appui Complémentaire à la Formation Professionnelle et Technique

Material/ resources	Free digital tools for educators (in French) Library without Borders Creation of interactive exercises in line with the TVET courses Teachers create their own pedagogical videos
Language	French

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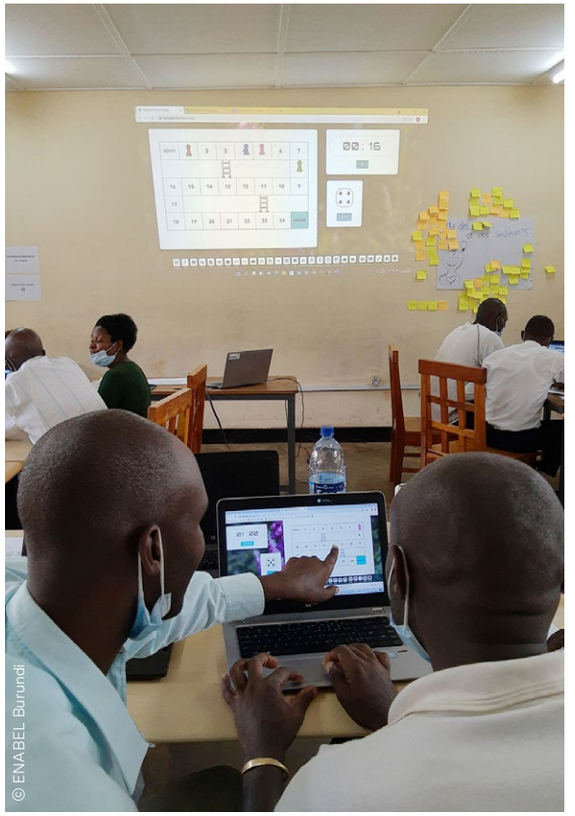
13 | ACFPT | Appui Complémentaire à la Formation Professionnelle et Technique

Digital focal point Jean Berchmans Sinamuziga (CFP Karurama, Cibitoke) explains to his colleague how to play an interactive exercise created with OpenBoard

Video group work exercise for the focal points with the digital libraries “Ideas Cubes”: each group connects to the server and can navigate through the available TVET content



Jean Marie Masabo and Emmanuel Niyongabo (CFP Kanyosha) discover the different possibities of “Digiscreen” (one of the tools of LaDigitale) during a workshop for digital focal points

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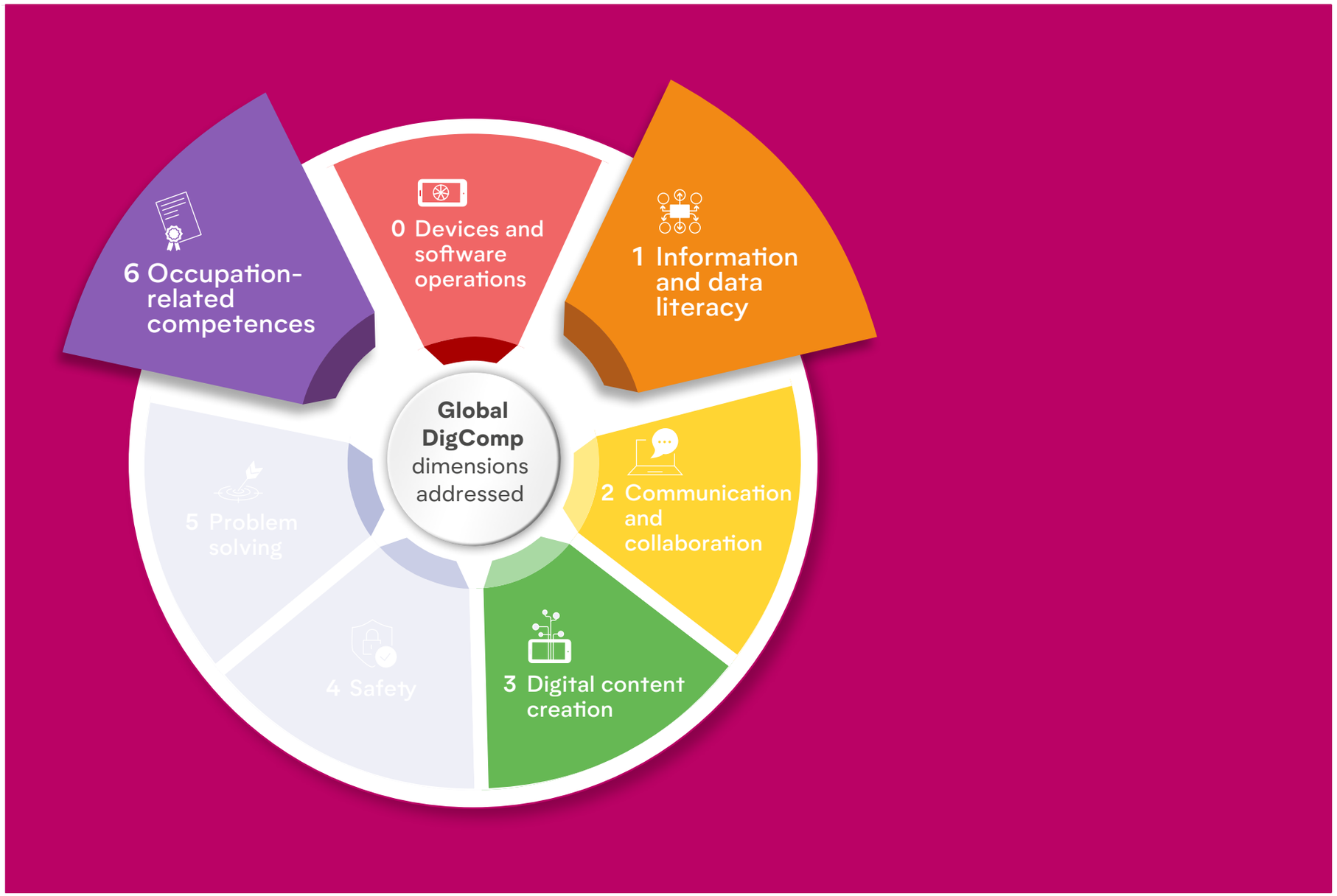
Project 14 | Life Skills and Training for Refugees and Host communities



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14 Life Skills and Training for Refugees and Host Communities

OVERVIEW	
	Kenya (Kakuma region)
	GIZ
	BMZ
	Political Partner → Department of Refugee Services at the Ministry of Interior Coordination Further Partners → Community-based Organizations (CBOs) → Danish Refugee Council → Learning Lions → Norwegian Refugee Council
	SDG 4, 5, 8, 10
	Young people between 15 and 34 years from host and refugee communities, young women and girls
	Enhance digital and life skills that enable youth to improve their decision-making, have better job opportunities and generate income
legend	

Tools / processes / approach

Training of Trainers and partnerships with local CBOs for hosting and conducting training courses:

ICT courses

- → Basic courses: around 3 months. Topics: Basic computer, software (MS Word, Excel etc.) and internet literacy
- → Intermediate courses: 3 – 6 months. Topics: Communication, web development (HTML), WordPress, graphic design, etc.
- → Curricula co-created with local CBO

Complementary “Life skills” trainings

- → Topics: e.g., self-awareness, self-esteem, communication skills, problem solving, interpersonal relationship, decision-making
- → Includes learning through radio dramas broadcasted on the radio and podcasts

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14 Life Skills and Training for Refugees and Host Communities

Tools / processes / approach

"Female-friendly" approaches

- → Dedicated classes for women to create "safe spaces" and raise motivation (ICT and English)
- → Flexible training schedules (incl. evening classes)
- → Daycare facility at training center
- → Hiring of female mentors and trainers

Implementation steps

1. Identify suitable local CBOs as project partners and coordinate with existing support organisations to avoid duplication of efforts
2. Develop curricula with CBOs and local stakeholders
3. Build capacities of CBOs and Training of Trainers

Achievements and impact

Duration: 2019 – 2021

- → Reached 7,000 young people through life skills trainings
- → Trained 800 young people in ICT basic skills and 100 of them in ICT advanced skills
- → Improved access to employment for 3,000 young people
- → Combination of ICT trainings and life skills trainings has biggest impact on youth

Success factors and lessons learnt

- → Implementing partners and project staff should be **from the target refugee and host communities** to understand the context and best resolve issues and to speak the local language to accommodate trainees who are not literate
- → **Involving the local community governance structure**, such as local leaders and chiefs helps to reach the target group and increase sustainability
- → Building a **strong cooperation with local CBOs** is not a one-time activity but requires substantial resources at all stages (e.g. capacity building)
- → **Reliable infrastructure** is a challenge in host and refugee communities (electricity, internet, devices). Local CBO- or NGO-owned centres are equipped with generators, solar power grids and ICT infrastructure
- → **Agile testing, feedback loops and adaptation** of approach yield best results amidst changing circumstances (e.g. pandemic restrictions)

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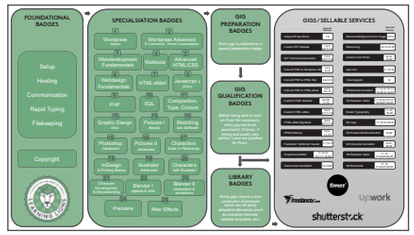
14 Life Skills and Training for Refugees and Host Communities

Material/ resources

A good start Curriculum – Personal development

AAR Japan ICT Curriculum

DRC Advance ICT Topical Guide



Learning Lions Advanced ICT Track Structure

Xavier Basic Computer Training Curriculum

Language English

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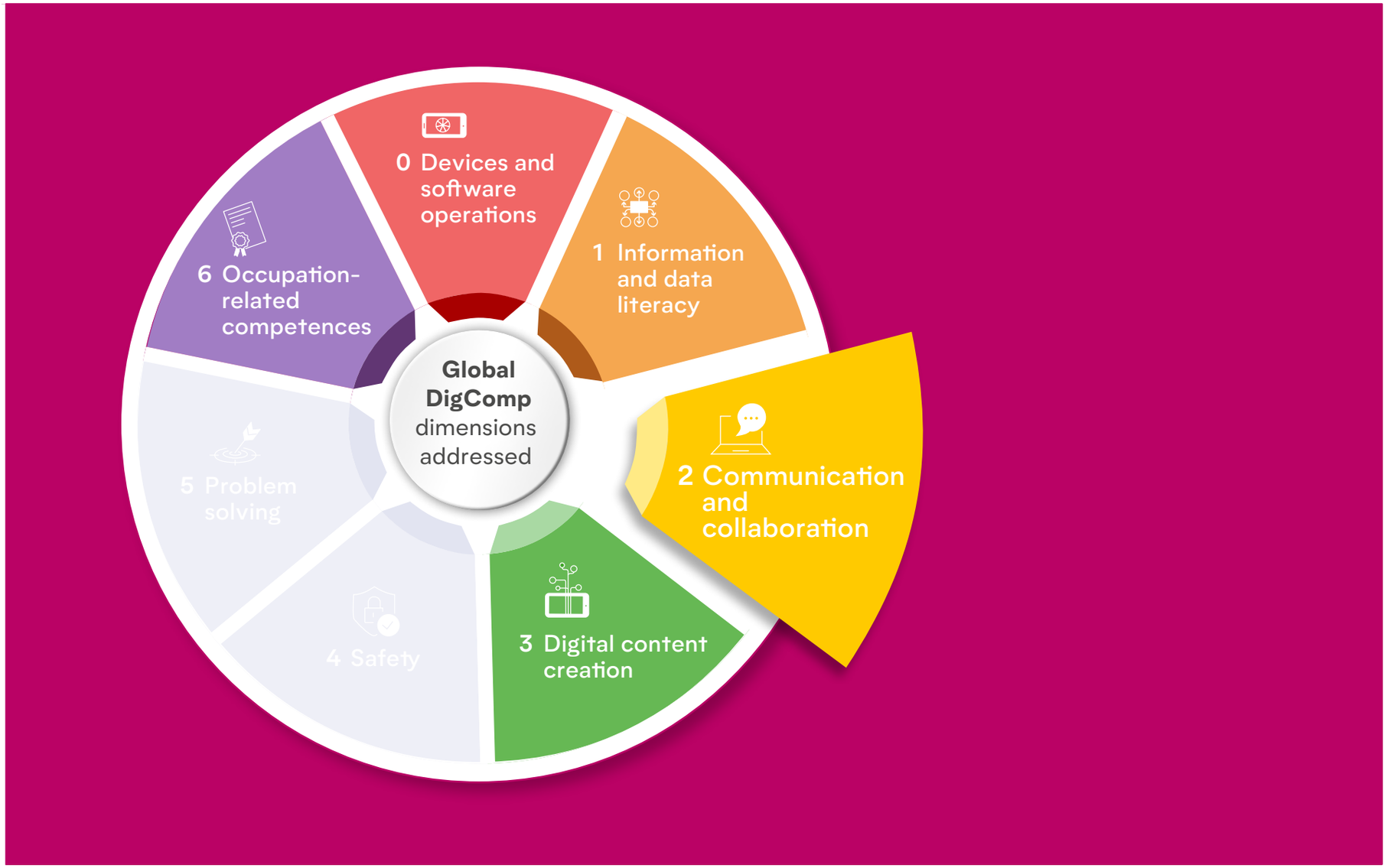
Project 15 | AMAL – Hope: Bringing hope through jobs for young Jordanians and Syrian refugees



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15 AMAL – Hope: Bringing hope through jobs for young Jordanians and Syrian refugees

OVERVIEW	
	Jordan
	Education for Employment Jordan (EfE – Jordan)
	AFD
	SDG 1, 3, **4**, 5
	Jordanian and Syrian youth (37% refugees, 50% female) From 18 up to 35 years old
	Directly support 1,350 young Jordanians and Syrian refugees to increase their employability and help them become economically empowered through market-driven training, job placement and entrepreneurship

legend

Tools / processes / approach

3-track methodology – focus on improvement of employability, job training and placement, and micro-entrepreneurship

- → Design of learning resources and trainings driven by the labour market demand
- → Pre-assessment of candidates' motivation and competences and selection of those who have a low risk of dropping-out of the training
- → Digital competences training implemented via an existing e-learning platform; self-assessment tool on learning platform tailors learning journey according to the needs of the learner; digital literacy is important for all programmes and learners, advanced level trainings reserved for freelancers and entrepreneurs of the gig economy
- → Female micro-entrepreneurs benefited from more advanced trainings to empower their small business and capabilities
- → Monitoring and evaluation platform developed by EfE for the projects monitoring including tracer studies and scoreboards

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15 | AMAL | Hope: Bringing hope through jobs for young Jordanians and Syrian refugees

Implementation steps

Ongoing (2018 – 2022)

1. Labour market needs assessment
2. Development of training material in cooperation with private sector and according to skills demand
3. Training of trainers not only for the technical aspects of the trainings but also in pedagogical skills
4. Selection of unemployed young people through individual interviews where willingness and capacity to succeed in programme is evaluated
5. Training of trainees according to interests and demands (e.g. entrepreneurship for entrepreneurs, job training for unemployed trainees, improvement of employability in different sectors)
6. Monitoring of improvement in employability or income generation via EfE monitoring platform

Cooperation with private sector

Technical cooperation: Labour market assessment and selection of training content in cooperation with private sector companies

Achievements and impact

- → 90 % graduation rate, 1,346 graduates since beginning of project, of which 939 are female (69 % female graduates)
- → 141 persons started generating income by establishing their home-based business; 419 started generating income under the job training programme

Success factors and lessons learnt

- → **Market needs analysis** is very important to understand the demand of the labour market and to develop the training accordingly
- → **Close relationship with donor** supports the implementation of the programme
- → **Reacting to the market demand and the beneficiary's needs** improve matchmaking between trainees and private sector companies
- → A good **monitoring and evaluation systems** supports a constant improvement of training offers
- → **Pre-assessment of candidates** minimizes the drop-out rate of trainees
- → **Local implementer** as the one driving the implementation of activities ensures that project meets real and localised demands of target groups and private sector

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15 | AMAL | Hope: Bringing hope through jobs for young Jordanians and Syrian refugees

Success factors and lessons learnt

- → **A good cooperation within the donor networks** facilitates information flow and exchange of experience, for example on the questions around legal frameworks for non-Jordanian workers working in Jordan and the formalization of work contracts
- → **Training the trainers** to develop good professional and social relationship with the trainees to support them during their training process minimizes dropout

Material/ resources

Language

English, Arabic

Samples of the latest success stories collected by EfE-Jordan communications team

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3.4 Project examples ▶ Project 15

15 AMAL | Hope: Bringing hope through jobs for young Jordanians and Syrian refugees

Sourcing Phase: Sourcing event in the University of Jordan in collaboration with King Abdullah II Fund for Development Career Guidance Office

Trainings: Micro-Entrepreneurship training for women in Ajloun

Job fairs: Job fair for project graduates, who completed hospitality training (kitchen and service) in Amman

Technical training in Amman

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Project 16 | ELIFE Project

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16 ELIFE Project

OVERVIEW	
	Tunisia
	Fondation Tunisie pour le Développement
	AFD and EU
	→ ESPRIT University (Ecole Supérieure Privée d'Ingénierie et de Technologies) → Tunisian association for communication and technology (TACT) → Tunisie Telecom → Ministry of Vocational Training and Employment (MFPE)
	SDG 1, 3, **4**, 5
	Tunisian graduates from 10 most marginalised and disadvantaged regions
	Training young, marginalised undergraduates from technical universities for job opportunities in the growing digital sector

legend

Tools / processes / approach

Establishment of 10 technology and entrepreneurship hubs ("ELIFE centres") in regions with highest unemployment rates

- → **Certified ICT training**
  - → 6 months daily training course on technical, communication and project management skills, followed by 6 months apprenticeship
  - → 4 specialised master degrees: Software Development, Business Intelligence, Community Management, Embedded Systems
  - → Developed and implemented by ESPRIT University, using a problem-based learning approach
  - → Certification of trainees through Conférence des Grandes Ecoles in France on digital professions
- → **Entrepreneurship:** co-working spaces and incubation and coaching programmes
- → **Culture and exchange:** Organisation of cultural events (exhibitions, film screenings, etc.)

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16 ELIFE Project

Implementation steps

Ongoing (2018 – 2023)

1. Identification of the regions with highest unemployment rates of young graduates
2. Creation of hubs as safe spaces for training, peer exchange, start-up incubators and cultural centres and with equipment for the different activities (e.g. fibre optic internet)
3. Identification of the skills needs of the digital sector and the skills gaps of graduates
4. Development of 4 specialised courses together with private sector and university, as they have the pedagogical and technical know-how
5. Piloting of the course and adaptation of the training concept and material according to feedback from participants and private sector
6. Regular self-evaluation of the programme, agile approach to adaptation according to input from private sector and labour market needs

Cooperation with private sector

Technical Cooperation: training modules are developed based on the input and the needs of the private digital sector. Some cooperating private companies offer internships for the graduates

Achievements and impact

Since 2019: 488 students enrolled, 328 graduated

Success factors and lessons learnt

- → **Constant evaluation and adaption** of the approach ensures improvement and better matching of trainees' competence and private sector needs
- → Tackling poverty-related obstacles: e.g. **offering financial support** for transport and housing near training centres for trainees to facilitate their participation in trainings
- → Include **training on mindset, "soft skills", communication and entrepreneurship**, as graduates not only lack technical skills
- → Infrastructure with **solid internet connection** needed to practise during trainings
- → Constant and transparent communication and a **good steering structure** is necessary for involving multiple stakeholders and **to ensure sustainability** of the project (principles of good governance)
- → **Certification** of trainees **by acknowledged institutions** improves chances of trainees in the labour market

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16 ELIFE Project

Material / resources	Homepage:
Language	French and Tunisian Arabic

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Project 17 | SIDP – Skills for Inclusive Digital Participation

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17 SIDP – Skills for Inclusive Digital Participation

OVERVIEW	
	Indonesia (other countries: Kenya and Nigeria) In Indonesia: South Sulawesi, East Nusa Tenggara, Ambon, Banda Islands, Papua and West Papua
	British Council
	→ Foreign Commonwealth and Development Office (FCDO) → UK Government
	→ Ministry of Communication and Information Technology of Indonesia → Civil Society and Education Institutions of Indonesia
	SDG 1, 3, 4
	Digitally excluded individuals with a focus on women and youth with disadvantaged socio-economic background as well as persons with disabilities
	Support the digitally excluded communities to develop the digital competencies they need to take part in digital life and online activities safely, and thus, contribute to enhancing the livelihoods of the target beneficiaries through entrepreneurship that leverages online resources and markets

legend

Tools / processes / approach

Trainings on basic and intermediate digital skills

→ Development of 4 digital training manuals, adapted to each country:
  → Overall trainer manual
  → Pedagogy and Trainer Training Manual
  → Basic Digital Skills (safe use of smartphones, cyber security, etc.)
  → Intermediate General Digital Skills (image editing, online communication, etc.), Intermediate Digital Skills for Economic Opportunity (e-commerce, how to apply for jobs, content creation for social media, etc.)

→ Duration of trainings: 3 days for basic skills and 3 days for intermediate general skills and skills for economic opportunities

→ Delivery by Community Level Trainers (CLT) who are selected out of digitally excluded target group and pre-trained by Expert Level Trainers (ELT) of the programme

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17 | SIDP | Skills for Inclusive Digital Participation

Tools / processes / approach

→ Use of digital communication tools for meetings and training (training of trainers for Community Level Trainers) during COVID lock-down and use of messenger services for follow-ups and coordination within the teams

Inclusive Approach

→ Implementation on weekends and on public holidays to reach those that have jobs, and to make it more accessible to women who have reproductive roles

→ Training sessions on different times of the day

→ Nursing rooms for mothers

→ Day-care facilities for children

→ Training venues with ramps, sign languages interpreters, training assistants

→ Development of inclusive materials: producing material which are more accessible for persons with disabilities: audio book (to support the blind) and large print material (to support those with partial blindness or visual impairment)

→ Co-creation of training material between CLT and ELT together with target group; involving persons with disabilities as trainers, not just as beneficiaries

Implementation steps

1 Selection of Coordinating Facilitator and Expert Level Trainers (ELT) that are familiar with the manuals development and have experience working in the digital space

2 Development of the 4 general digital training manuals and country specific material as “country annexes” of the manuals

3 Selection of local organisations as implementing partner in 6 project locations

4 Selection of Community Level Trainers (CLT) from within the digitally excluded communities that are trained by the ELT and that will implement the trainings

5 Translation of the manuals into local language: Tailoring of manuals to the needs and aspirations of the target groups in each country, together with the target groups, the CLT and the ELT

6 Implementation of the Basic Digital Skills Training and Intermediate Digital Skills Training by the CLT with support and mentoring by the ELT

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17 | SIDP | Skills for Inclusive Digital Participation

Achievements and impact

In Indonesia:

- → 103 community trainers trained
- → 3,202 participants trained in basic digital skills
- → 1,130 participants trained in intermediate general digital skills

Success factors and lessons learnt

- → **Focus on the needs of the target group** instead of producing a sophisticated manual/training that does not correspond to the needs
- → **Co-creation** of trainings and manuals **takes time but is an important** step **for success** of the project
- → Choosing **community level trainers from local communities facilitates dialogue** within the communities and improves participation as people know each other and speak the same language
- → **Communication campaigns** helped **raise awareness** for trainings and **increased interest** in participation

Additional information

The SIDP manuals are also disseminated to 30 civil society and educational institutions in Indonesia, as well as to two other countries; training is provided to the institutions to support them to use the manuals independently with their own target groups

Material / resources

(specific link to the SIDP manuals/English version)

(specific link to the SIDP manuals translated into Bahasa Indonesia including Indonesia country annexes)

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17 | **SIDP** | Skills for Inclusive Digital Participation

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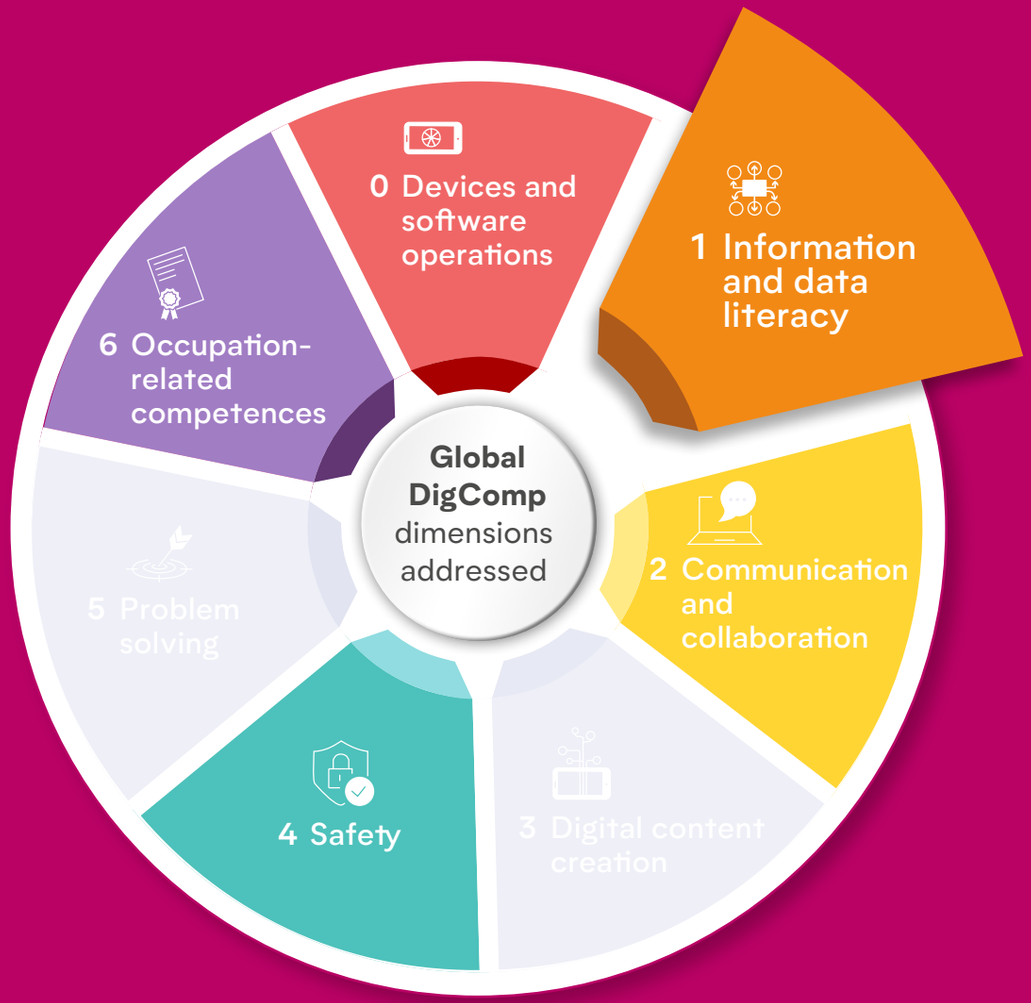
Project 18 | EDGE – English and Digital for Girls' Education



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18 EDGE – English and Digital for Girls' Education

	OVERVIEW
	Bangladesh (with other implementing countries being India, Pakistan and Nepal)
	British Council
	Foreign Commonwealth and Development Office (FCDO)
	→ Hongkong and Shanghai Banking Corporation (HSBC) → Dnet → Spreeha Bangladesh Foundation
	SDG 4, 5
	Marginalised adolescent girls, 13–19 years old
	Improve education and build self-confidence of adolescent girls in socio-economically marginalised communities in Bangladesh to overcome discrimination, reduce the dropout rate and risk of child marriage, and improve life prospects

legend

Tools / processes / approach

Girls Clubs ran by peer group leaders

- → Safe space for exchange and learning
- → Each club has 22 members and 2 peer group leaders
- → Clubs meet on average twice a week for 2 hours, either at schools or in communities
- → Training topics: English classes, social and 21st century skills, enterprise skills and basic digital skills (e.g. Microsoft, Google Maps, e-mail accounts, etc.)
- → Curricula based on local curricula, but including some "taboo" topics, designed for more engagement, adapted to local context
- → Aims to inspire girls with more opportunities in their future (e.g., find work in the formal labour market or attend higher education), as well as to change their perception of their position in society from burden to support for their family
- → Monitoring of Girls Club activities through visits to the clubs' meetings by local implementing partners: 50 ran by Dnet on school level and 50 ran by Spreeha on community level

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Tools / processes / approach

Pilot Phase:

- → During the COVID-19 pandemic, the Peer Group Leaders (PGL) trainings were conducted fully online: PGL received laptops with instructions on how to access MS Teams to participate in training sessions

Full programme – 18 months cycles:

- → 6-months foundation phase
  - → Assessment, selection and training of the Peer Group Leaders
- → 6-months consolidation phase
  - → 4 months of girls club implementation, weekly meetings
  - → Follow-up training of Peer Group Leaders (6 months after 1st training)
- → 6-months social enterprise module on how to generate income

Peer group leaders selection and training

- → Peer leaders are higher skilled girls from target communities
- → Training topics of peer group leaders: Managing and running the "Girls Clubs", implementation of the training curricula
- → Refresher training for leaders after first phase of club implementation

Implementation steps

1. Design of the curricula by the British Council regional academic team
2. Pre-assessment and selection of peer group leaders: English test done by English teachers and test on digital skills by NGOs supporting the implementation of the project
3. Training of peer group leaders; provide each club with a laptop and material for the sessions; peer group leaders receive handbooks to run the clubs on different topics
4. Creation of clubs together with communities and schools
5. Implementation of the clubs with regular weekly meetings, monitoring of meetings through regular observations of club meetings; Participants receive club workbooks on foundation, consolidation and social enterprise; The workbooks guide the PGLs and members to run club activities and build their capacities in different skills areas

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6 Refresher training for peer group leaders after some weeks of running the club, allowing for input, feedback from and exchange between peer group leaders

Achievements and impact

- → 100 "Girls Clubs" set up in 4 marginalised districts of Bangladesh
- → Unintended benefit: Several girls from the "Girls Clubs" stand out in ceremonies or are invited to national and regional conferences and events, which has a positive impact on how the girls are perceived by their parents
- → Based on project data, girls who participate in Girls Clubs tend to have a better achievement in school and their parents tend to become more aware of the importance of education

Success factors and lessons learnt

- → **Access to equipment:** Women and girls own **fewer smart devices** (compared to men), yet Girls Clubs need equipment for their trainings. Furthermore, some skills are highly practical, e.g. digital skills, so girls need access to **equipment to practise** them after the initial training.
- → Providing each peer group leader with a laptop is a big cost factor. **"Mobile-first" solutions** can be more cost-effective and sustainable.
- → Cooperation with public institutions like **IT-Hubs or with internet cafés** can further help to improve access to ICT infrastructure and devices for the "Girls Clubs".
- → **Involvement of local leaders, communities and families** improves support of the clubs, as they become aware of topics and the importance of a dedicated safe space for girls education

Material / resources

Homepage:

Let's start a business

How to get there

Language

English

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Project 19 | Start-up and Coding

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19 Start-up and Coding

This overview focuses on the project activities that strengthen digital competences of the target group

OVERVIEW	
	Iraq (Baghdad, Basra, Erbil, Sulaymaniyah, and Mosul)
	GIZ
	BMZ
	→ Ministry of Planning → Innovation Centres → NGOs → local businesses
	SDG 1, 4, **8**
	University graduates, employees of start-ups
	Equip youth with advanced IT skills to improve their employment prospects and improve the entrepreneurial ecosystem for tech start-ups

legend

Tools / processes / approach

Trainings:

- → Modular, tech-related topics (e.g. mobile app development, coding, cloud computing, AI)
- → Developed and implemented by local companies and organisations
- → Either in-person or hybrid
- → Integrated on-the-job training phases

Matchmaking event (following the training):

- → Bring together trainees and private sector companies
- → Formats such as “speed-dating”, tech festivals, hackathons

Implementation steps

1. Identify topic for training according to private sector needs
2. Identify and contract a local company for development of a specific training module
3. Local company develops module and GIZ carries out quality assurance
4. Implementation of the trainings by the local company, including on-the-job phases
5. Matchmaking event for trainees and private sector companies at the end of the training

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19 Start-up and Coding

Cooperation with private sector	GIZ supports networking of local companies, start-ups and innovation hubs; local companies develop and implement training modules, depending on their specialisations
Achievements and impact	Creation of innovation centres as “innovation hubs” with equipment for e.g. FabLabs and as a “safe space” for exchange between start-ups and trainees, graduates and interested peers, run by local NGOs
Success factors and lessons learnt	→ Rely on local instead of international organisations to **build and keep knowledge in the country** → **Cooperate with private companies:** Universities do not work with labour market-driven curricula and curricula are often outdated. In contrast, companies know the skills the private sector needs, **facilitating matchmaking** between trainees and the labour market → When companies from different districts and different backgrounds collaborate in the trainings, this can also **improve private sector dialogue** within the country
Success factors and lessons learnt	→ **Leverage the interest of international private sector companies** (such as Amazon Web Services, SAP, Siemens and others) to enter the (Iraqi) market and their interest to improve their visibility for establishing Public Private Partnerships – support setting up of projects, matching skills needs with skills supply and generate funding for projects → **Women’s participation** in trainings depends crucially on their access, for example facilitated through offering transport to and from the training centres → Promote **innovation centres** as “places of retreat” for networking and exchange between like-minded people from the start-up scene; former trainees can use it to connect with start-ups and find job opportunities → To increase **interest of and support (investment) from the government and policymakers**, invite them to events and foster exchange on the opportunities within the tech and start-up sector

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19 Start-up and Coding

Additional information

- → Pilot project on Tech Labs with AI Bootcamps, etc.
- → "Educator of Change" (starting now) programme where University lecturers are trained in the use of modern learning strategies and computer science

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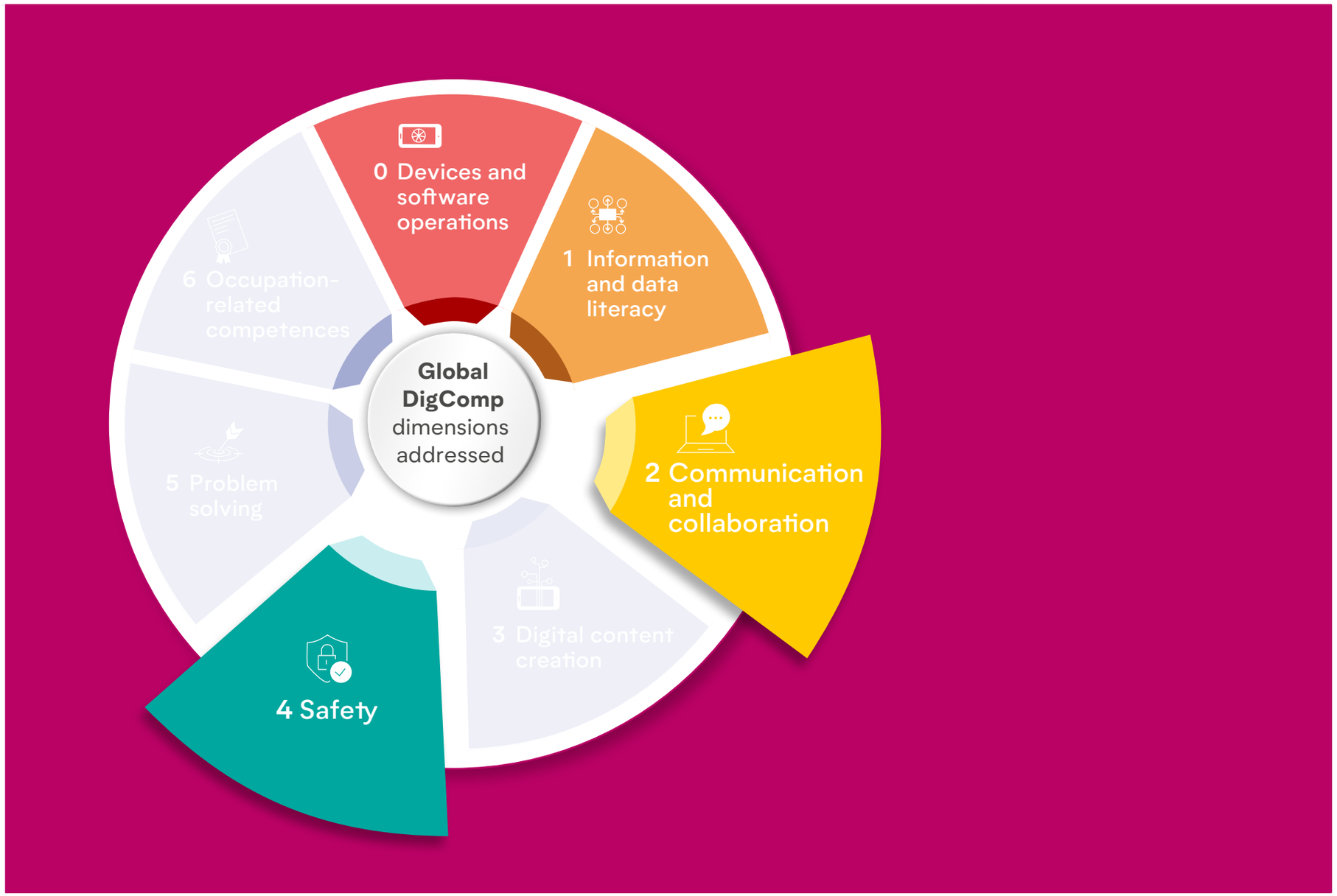
Project 20 | **Digital Tayo** as part of EDC's project Opportunity 2.0



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20 Digital Tayo as part of EDC's project Opportunity 2.0

	OVERVIEW
	Philippines
	Education Development Center (EDC)
	Digital Tayo – Facebook and USAID
	→ Technical Education and Skills Development Authority (TESDA) → Department of South East Asian Ministries of Education Organization's Regional Center for Innovation and Technology (SEAMEO INNOTECH) → Philippines Business for Education (PBEd)
	SDG 1, 3, 4
	Out-of-school youth – EDC trains young people that are already beneficiaries of the project "Opportunity 2.0"
	Improve skills of unemployed youth to safely navigate the digital world and be a responsible digital citizen
legend	

Tools / processes / approach

Digital Tayo Training:

→ 2 modules with 6 lessons each:
Digital Engagement Module (total of 5 hours),
Digital Empowerment Module (total of 24 hours)

→ Topics: Digital identity, safety, identification of fake news, responsible use of social media, content production, digital footprint

→ Online methodology includes videos and quizzes to make it interactive

→ Resources include facilitator guide, lesson plans, additional resources and handouts

Implementation steps

1 Digital Tayo developed digital training material

2 Digital Tayo trained master trainers on how to use their material for online trainings

3 Master trainers implemented trainings using Digital Tayo training material, either for online or in-person training

4 Monitoring and evaluation is done via messenger service through a comparison of results of the pre-assessment and the post-training test

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20 | **Digital Tayo** as part of EDC's project Opportunity 2.0

Cooperation with private sector	Facebook developed the Digital Tayo training concept and the material and engages organisations to implement the trainings all over the Philippines; Digital Tayo is a local adaptation of the programme "We think Digital"
Achievements and impact	The goal of Digital Tayo is to train 1 million young Filipinos in cooperation with its several implementation partners
Success factors and lessons learnt	→ Implementing trainings on **topics that are relevant for targeted populations** secures their engagement and motivation → The material used for the trainings is very **easy to understand, broad, simple and has an engaging design** which makes it easier to use it in the training and more attractive for learners → **Targeted young people are familiar with the platforms** used for the training (e.g. facebook), so access is easy and given → Trainers have to be able to **translate material and give examples in local language** as learners might be more comfortable in talking in their native language → Investing time to ensure participants can **access the online sessions** increases long-term participation
Material / resources	Access to all modules and manuals
Language	English

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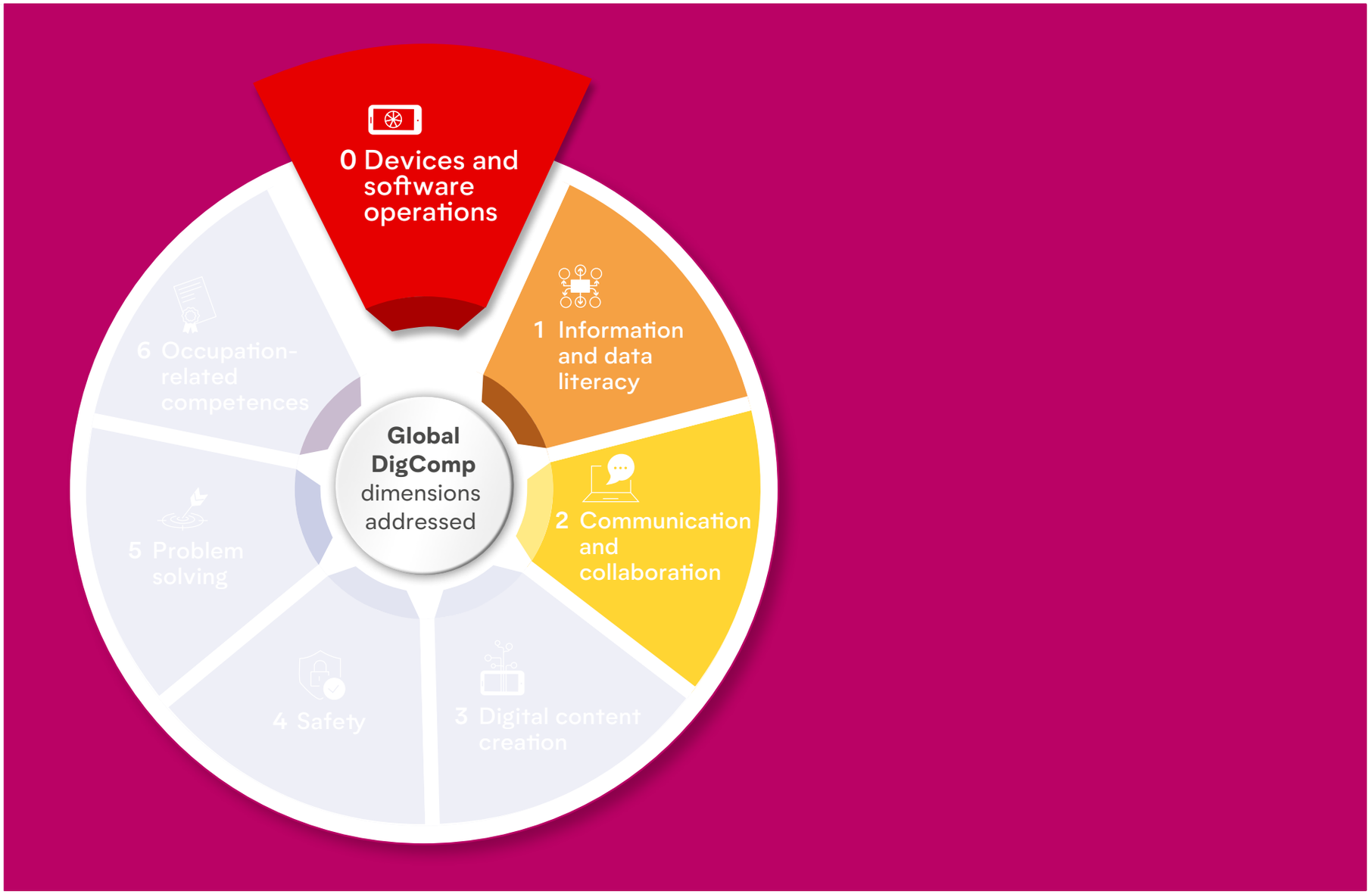
Project 21 | PAORC – Project to Support Burundian Organisations through Skills Building



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21 PAORC – Project to Support Burundian Organisations through Skills Building

OVERVIEW	
	Burundi
	ENABEL
	Directorate-General for Development Cooperation and Humanitarian Aid (DGD) of Belgium
	→ Burundi Formation → Bureau internationale en education et formation (BIEFOR) → 4 initial training institutes for Individualized Education Programme (IEPS) teachers; → Faculty of Psychiatry of Educational Sciences → Institute of Applied Pedagogy (IPA, public) → ENS École normale supérieure (ENS, private)
	SDG 4
	Lecturers at universities who train future secondary school teachers
	Strengthening the quality of initial training (in higher education institutes) for future teachers in the field of Integrative Pedagogy (IP)[9]
legend	

Tools / processes / approach

Development of a **Competence Acquisition Pathway (CAP)** for Training of Lecturers

→ Baseline study ▶ training cycle of 6 modules ▶ classroom experimentation by lecturers ▶ post-training coaching and remediation ▶ final evaluation of changes in teaching practices

→ Combination of online and offline learning sessions (offline session happening in the universities of the lecturers)

Online sessions

→ 6 modules over a period of 6 weeks, available on a Moodle Platform

→ Topics of the modules are:

1. organising, supporting, and supervising students during their internship using Integrative Pedagogy (IP)
2. active and student-centered pedagogy
3. assessment of learning
4. understanding and implementing curriculum and using the Digital Library
5. professional gesture and posture
6. use of contextualisation for learning

9 The pedagogy of integration is based on the principle of integration of the learner's knowledge, which leads him/her to be able to face complex situations. It offers concrete bases to approach in a simple, deep and contextualised way the programmes of study, the organisation of learning or the evaluation devices

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Tools / processes / approach

→ Introductory training done to show lecturers how to navigate on the Moodle platform and how to access online learning sessions, including a handbook

→ 200 lecturers of 4 universities were trained initially to be able to roll out the training in their courses for future primary teachers once they passed the training

→ Institutes were equipped with computer rooms and good internet connection to facilitate online learning – use of Raspberry PI-based Nano serves for better internet connection

Digital Library

→ Lecturers are encouraged to share their teaching and learning materials in a digital library hosted by the Ministry of Education

Implementation steps

Ongoing (2020 – 2023)

1 Identification of the universities and the e-learning companies to design the course
2 Provide equipment to the universities and design of the hybrid training
3 Elaboration of a handbook on how to access Moodle and the online modules
4 Pre-assessment of participants' knowledge
5 Implementation of online and offline sessions with e-learning specialists for the online guidance and offline sessions with facilitators in the 4 universities
6 Post-assessment of participants, evaluation

Achievements and impact

→ All 200 participants know how to access and use Moodle

→ Participants are able to follow the online sessions that are provided

Success factors and lessons learnt

→ To participate in e-learning trainings, **participants must be self-disciplined, autonomous in their learning and serious in their commitment**

→ **Peer-learning** facilitated more through in-person exchange and face-to-face training, so training cannot be shifted to fully online

→ Ensure **good technical onboarding of participants**, especially if they do not have previous knowledge on how to learn and teach online – this avoids technical problems during the training

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Success factors and lessons learnt

→ A **well designed and participatory training format** motivates participants to finish the course

Additional information

In its phase from December 2022 to October 2023, the project will revitalise the Massive Open Online Courses (MOOCs) to make the e-learning training less theoretical with more exercise of application of the various IP standards; It will use more diversified and playful resources that the Moodle platform offers (wiki, games, digital portfolio, ...)

Material/ resources

Project Information:

How tu use Enable Open Learning Platform

Presentation of a MOOC

Language

French

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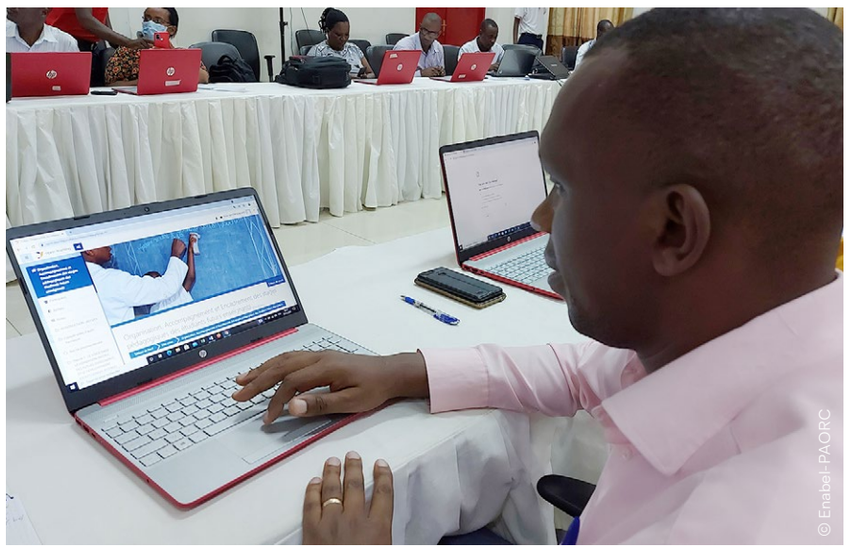

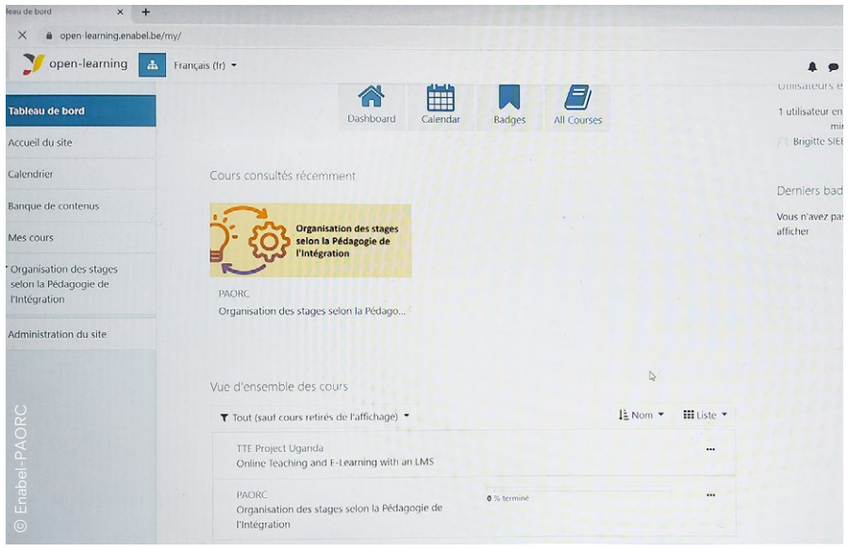

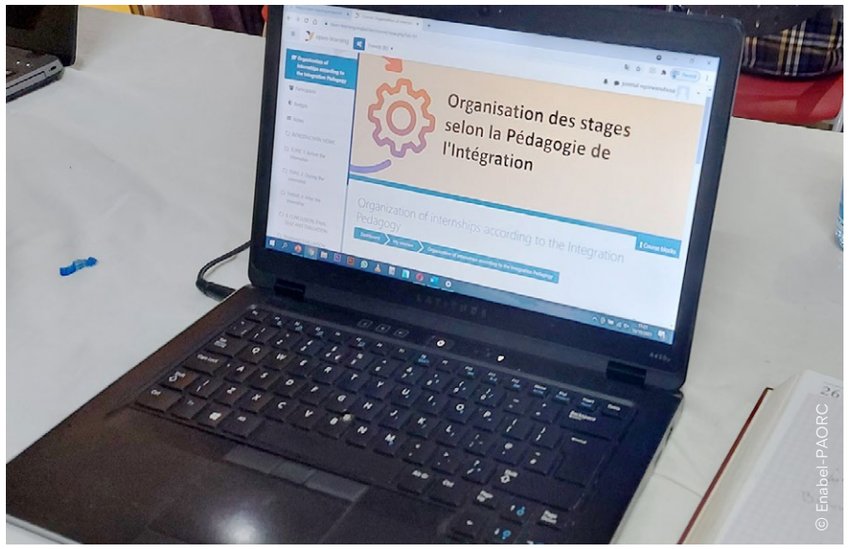

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Project 22 | ESTI – Formapro

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22 ESTI – Formapro

OVERVIEW	
	Madagascar
	Centre National Emploi-Formation dans les métiers du Bâtiment et Travaux Publics (CNEF BTP)
	AFD
	→ Ministry of Higher Education, → Paris Chamber of Commerce and Industry, France → Electronic Tele-Communications (ETCIA) Paris
	SDG 4, **8**
	Young students (Bac+) and employees of companies in need of qualified IT staff
	Provide quality training that meets the needs of the labour market

legend

Tools / processes / approach

Formal IT training:

- → Jointly developed by private sector companies and TVET colleges and institutions
- → Focus on IT competences relevant for jobs in the IT sector
- → Provide formal certificates, that open doors to master and doctoral degrees
- → Alternate training method to maximise learners' contact with the professional environment, where trainees spend time at colleges and have practical working phases directly in the companies participating in the programme

Implementation steps

Ongoing project (2016 – 2024)

1. Stakeholder mapping
2. Needs assessment for capacity building and training needs
3. Selection of direct beneficiaries for project support, based on needs assessment, their motivation and active participation
4. Production of training content by TVET colleges and companies and uploading of training content on learning management system

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22 ESTI | Formapro

Implementation steps	5 Capacity building of trainers 6 Implementation of training and accompaniment of trainers and trainees
Cooperation with private sector	Technical cooperation between the project and Chamber of Commerce and Industry of Madagascar (COTICOM). The IT school was created by companies to meet their needs for a skilled workforce in the field of IT
Achievements and impact	261 students enrolled in 2021 and 2022, 31 of them in the Master classes, 33 graduates in 2021
Success factors and lessons learnt	→ **Close collaboration with companies** is crucial as the integration of graduates into the labour market depends closely on it, as does the quality of training → Intensive communication and cooperation between stakeholders such as TVET colleges, political partners and private companies during development of training **strengthens ties with professional community** → A **regulatory and legal framework for the alternate training mode** facilitates its institutionalised implementation, otherwise measures depend on motivation of individual stakeholders only
Additional information	Project information: Article about the project:
Language	French

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4. Recommendations –

a step-by-step guide for promoting digital competences

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4 Recommendations – a step-by-step guide for promoting digital competences ▶ Step 1 – Start with a vision

The hands-on experience collected in the project interviews as well as the lessons learnt and the success factors can be translated into recommendations for setting up good projects to strengthen digital competences of different target groups. Some recommendations tackle all systemic levels (macro, meso and micro), others address specific levels. Additionally, the recommendations refer to the projects and the hints and tips they provided.

Step 1 – Start with a vision

- → Start with building a broad vision of what you want to achieve. A vision that inspires you and possible cooperation partners. **Include (potential) partners, stakeholders and local experts** in building that vision. By meeting their needs you successfully involve them in the long term.
- → Define your overall **priorities** and think of **possible trade-offs.** For example, if promoting equal access to employment opportunities is the most important goal, you might want to focus on reducing educational and labour market obstacles for specific groups of marginalised persons. In contrast, if the vision is rather about tapping into opportunities at the technological frontier (e.g., Industry 4.0); the resulting intervention is likely to focus on state-of-the-art competences of few graduates that will not be accessible to everyone.

Graphic 3
6 steps to strengthen digital competences

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TIP

Developing a vision of opportunity

A common pitfall is to treat digital competences as an end in itself, instead of a means for opportunities in the labour market. Consider the following points as examples of how to improve your draft vision:

(Macro-level) Policy makers, international organisations, and donors
Poor example: “Build training hubs and tech incubators”
Improved vision: "Equip youth in a country with the digital competences for employment in the global ICT sector"

(Meso-level) TVET, higher education, and continuing education institutions
Poor example: "Set up a coding school"
Improved vision: "Become the leading institution for specialized ICT education that links young people with opportunities in the private sector"

(Micro-level): Individual educators, staff, and learners
Poor example: "Teach how to use a computer"
Improved vision: "Promote the right set and level of digital competences that will equip students with the competences they need in tomorrow's world and labour market"

→ Graphic 4 below shows basic building blocks that can be used for spelling out a meaningful vision. The formulation of the vision will be a starting point and likely to be adapted after implementing further research activities (see next step).

Graphic 4
Building blocks for a vision

WHO	**(Your role and possible coalition partners)**
WHAT	(Higher education/ TVET intervention on digital competence)
WHY	(Enhanced opportunities in the labour market)
FOR WHOM	(Target group)

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Step 2 – Assess needs and context

"Training for the purpose of training is not worth anything. Start with the assessment and proof of needs" (project 1, DSAA).

Research the needs and context that your vision is targeting. This means assessing the target group's needs, the wider policy and programme context, and the stakeholder landscape.

Target group and needs analysis

- → Define your target group as **specifically** as possible. This can include demographics such as age or gender, the geographical area, level of education (see below) but also the types of previous qualifications needed, access to IT devices, and more.
- → Think of **width versus depth** of reach: Linking back to your vision, do you prioritise accessibility for the largest number of people, or catering best to the needs of a narrowly defined specific group?
- → Validate the concrete **opportunities in the labour market** (the "Why" of your vision). What digital competences are in demand by the labour market? Can you identify a concrete competence gap?

TIP Think of current and future developments in the labour market and plan for flexible adaptation!

- → Research the **educational or training needs of the target group.** What digital competences do they lack? What other digital competences do they need to improve their employability and income?

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→ Analyse **learning capabilities and context.** What is their educational level? What is their level of relevant digital competences? What other competences do they possess or need (e.g., related to "learning how to learn", general life skills, soft skills).

→ Consider the **local reality and context.** What is the social, cultural or economic reality of the target group? What are barriers to learning (e.g., gender discrimination, ability to pay for classes, remote location)?

LESSONS LEARNT "Meet the basic needs first, before implementing complex things" (project 12, dSKills@EA).

Only if you understand the local reality of your target group, you can set realistic goals and expectations for competence development.

→ Pay attention to **specific needs of vulnerable target groups.** For example, refugees (disrupted education or lack of formal certificates, less access to smart devices, weak or missing internet, electricity and education infrastructure, conflict potential with host communities), women and girls ("gender digital divide", less access to devices, conflicting household and childcare duties, need for safe spaces) or persons with disabilities (social stigmas, special needs for accessibility and training setup).

Inventory of relevant policies, programmes and frameworks

→ How does the planned intervention relate to relevant policies or programmes in higher education, TVET, the economy and labour market?
Can the efforts be coordinated and harmonised?

→ What policies or conceptual frameworks, employment and labour market analysis pre-exist to guide you?

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Stakeholder map

→ Who are the actors from the public, private, academic and civil society sector that have a stake in the planned intervention? What are their interests and capacities?

Step 3 – Set strategic objectives and indicators

→ Use the needs and context assessment to define specific objectives and target indicators.

TIP Benchmark your objectives against similar programmes or projects as a “reality check”!

(Micro): Individual educators, staff, and learners

→ **Define concrete goals on the level of learners.** For example, these could be related to employment (e.g. "find a job in a certain sector six months after graduation"), professional experience ("launch own business") or improving career prospects ("navigate online job portals and complete a recruitment profile")

→ Ideally, goals are **co-developed with learners** to set and manage **expectations**. Being clear about why they are learning what they learn also increases **motivation**.

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→ Make sure to include both:
  → **Economic and labour market objectives** (e.g., closing a competence gap, improving employability, increasing income)
  → **Educational objectives with regard to digital competences** (the adapted Global DigComp Framework (Chapter 2) is a useful framework to base your objectives on)

(Meso): Higher Education and TVET institutions

→ Make sure to **align** institutional objectives with **overall policy objectives** (see policy inventory in step 2).

LESSONS LEARNT Digital literacy does not only include "hard" knowledge, but often requires soft skills and a shift of "mindset" (project 16, ELIFE).

By using the adapted Global DigComp Framework, you can specify the needed skills, knowledge and attitudes (see Chapter 2).

→ Once you have defined your objectives, set indicators for each with base level (status quo) and target level (objectives)

TIP Use SMART indicators: They should be Specific, Measurable, Achievable, Relevant, Time-bound.

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Step 4 – Plan actions and resources

- → Plan short- and medium-term **actions** required to implement your TVET or higher education project (or policy).
- → For each action, make an estimate of the **financial, human and time resources** required.
- → Define and design your **training approach**. *"Focus on pedagogical approaches that create learning activities that are meaningful and relevant – not on the technology"* (project 21, PRAOC).
- → How can you create a learner-centric experience that best caters to their needs?
- → What are the best ways to make the training engaging and effective? For example, problem-based learning (project 16, ELIFE) or practical learning through professional internships (project 9, STEP II) can increase motivation and learning impact.
- → Plan an appropriate mode of delivery. What is most suitable for the learning capabilities and local context of your target group?

TIP For the majority of learners, blended learning is easier to engage with and more suitable than fully remote learning.

However, even blended learning has to be well planned in terms of access requirements (e.g., internet, devices).

GOOD PRACTICE Additional support may be required to make on-site training more accessible.

Examples could be childcare services and flexible hours to accommodate the typical demands placed on women (project 14, Entrepreneur Kenya) or on-site accommodation for learners unable to afford the daily commute (project 16, ELIFE).

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- Define the **training content or curricula.** How do you want to achieve the digital competence objectives defined in step 3? The adapted Global DigComp Framework offers guidance to plan a comprehensive training on digital skills, knowledge and attitudes (Chapter 2). Take the level of training, the cultural context and accessibility requirements of the target group into account.
- **Avoid duplication.** Which existing curricula and content can you re-use and adapt, what input do you need to develop from scratch? While building on existing content and integrating digital competences into the existing national TVET or higher education curricula is the first choice for sustainability, in practice, this might not always be feasible.

LESSONS LEARNT Curricula may already be at the limit of the content that can be covered (project 6, Pro Educação), lack the structures to align with private sector demands (project 19, Start Up and Coding), or the target group may be excluded from traditional national education systems (project 14, Life Skills).

- Consider **intellectual property rights** from the start.

LESSONS LEARNT Cooperating with a private sector partner can help build a successful training programme, but may limit your ability to share materials (project 2, Orange Digital Center).

For a selection of digital libraries hosting open educational resources (OER), please refer to Chapter 6 (Further resources).

- Set your **budget and cost model.** The cost of training delivery is a key factor for the sustainability of the project.

LESSONS LEARNT Make sure to factor in recurrent costs (project 2, Orange Digital Center).

Digital devices need to be replaced every 4 – 5 years, and training content on digital competences needs to be regularly updated.

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→ Define **risks and mitigation** strategies for your project. Often, this means opting for an incremental approach that allows you to test and adapt your strategy based on your learnings (see Step 6).

TIP

How to reduce the cost of implementing trainings?

→ **Peer-driven instructional approaches,** e.g. non-formal training such as code boot camps, can be quicker and cheaper to implement than formal learning.

→ **Refining or expanding the existing formal curriculum**, e.g. introducing digital competences as transversal competences to supplement all current training regulations or a new occupational training position for a TVET programme, can save costs in the long term. However, the process of integration of new training content might be lengthy and complex short- to mid-term, depending on national systems for accreditations.

→ **Upscaling and adapting pre-existing training material** is often quicker and cheaper than developing new content from scratch. Examples for recommended free online resources are Code Academy (CodeAcademy.com) or Open Educational Resources (OER) initiatives such as OERAfrica.org. A collection of recommended resources can be found in Chapter 6 Further resources.

→ **Cooperation** on training material development or delivery with other actors or institutions working in the same sector avoids duplication of efforts and reduces costs.

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Step 5 – Build partnerships, collaboration and communication

TIP

Do's and Don'ts of cooperating with tech companies

- → **Analyse interests and potential conflicts prior to cooperation.** In many low- and middle-income countries, ICT has emerged as an important sector driving local employment. Companies in this sector are potential employers for TVET and higher education graduates. However, the interests of the private sector partner should be spelled out clearly and made transparent before engaging in a partnership. While some might be mutually beneficial (e.g. tailor educational programmes to private sector needs to improve employability of graduates), other interests such as access to the data of beneficiaries or promoting a specifically restricted standard might need a critical review (see "Promote open strategies" below).
- → **Source local.** Local companies know the context requirements (e.g. designing for low bandwidth), can offer on-demand services such as maintenance and repair and can serve as potential employers for TVET and higher education graduates focused on digital competence.
- → **Promote open strategies and avoid vendor lock-in.** In line with the Principles for Digital Development, promote the use of open standards, open data, open source, and open innovation (see Chapter 6). In the field of education, this extends to Open Educational Resources (OER). When using proprietary resources, be particularly mindful of future switching costs such as software interoperability or retraining to use a different tech solution.

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Do's and Don'ts of cooperating with tech companies (continued)

- **Data sharing based on informed consent.** Prior to the intervention, beneficiaries need to understand what data will be collected, how it will be collected, used, stored and/or shared, the purpose and the risks it may entail – especially, but not exclusively, when tied to persona identities. Communicate clearly that data sharing is voluntary and how consent can be withdrawn in future. Make sure to tailor the form of asking for consent to the beneficiaries' capacity to understand (e.g. educational and literacy level).
- **Comply with both local regulation and international standards.** In many countries, the laws governing digital data and the digital economy are less strict or less enforced than in the European Union (see GDPR and other relevant EU regulation in Chapter 6). This is not only relevant to many low- and middle-income countries, but also cooperation with US- or China-based companies. On a global level, the *Principles for Digital Development* act as a guidepost for the sustainable and ethical use of digital technologies.

GOOD PRACTICE *"Focus on people and humans, not the tasks"* (project 1, DSAA).

Building ownership and **creating a functioning, collaborative environment** is not only key to implementation, but also for long-term sustainability.

- Reach out to and **engage the key actors** based on your first stakeholder map (Step 2). Identify potential partners that are motivated to bring the project forward and that have the capability to implement the project in a sustainable way.

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LESSONS LEARNT Work with the interest of the partners, not (only) your own (project 3, RECOTVET III).

Involve partners from the very beginning and listen to their needs. This is particularly crucial for multi-stakeholder alliances that bring together diverse political, private and social interests.

LESSONS LEARNT Creating a common understanding is key (project 22, IEDCb).

It may help to implement a **communication campaign** targeting key beneficiaries and stakeholders. The goal is to not only to raise awareness, but also to include them in the project design and implementation. In the context of diverse stakeholders, make sure that the language and the vocabulary used is well understood by all.

(Meso-Level): Higher education and TVET institutions

Setting up a cooperation with private sector companies, e.g. for internships of learners, can improve employability and skills matching (see project 9, STEP II).

(Micro-Level): Individual educators, staff, and learners

Mentorships can help to promote the professional skills and networks of learners. Furthermore, they are especially suited to help groups underrepresented in the ICT sector, such as women and girls (see project 6, Pro Educação).

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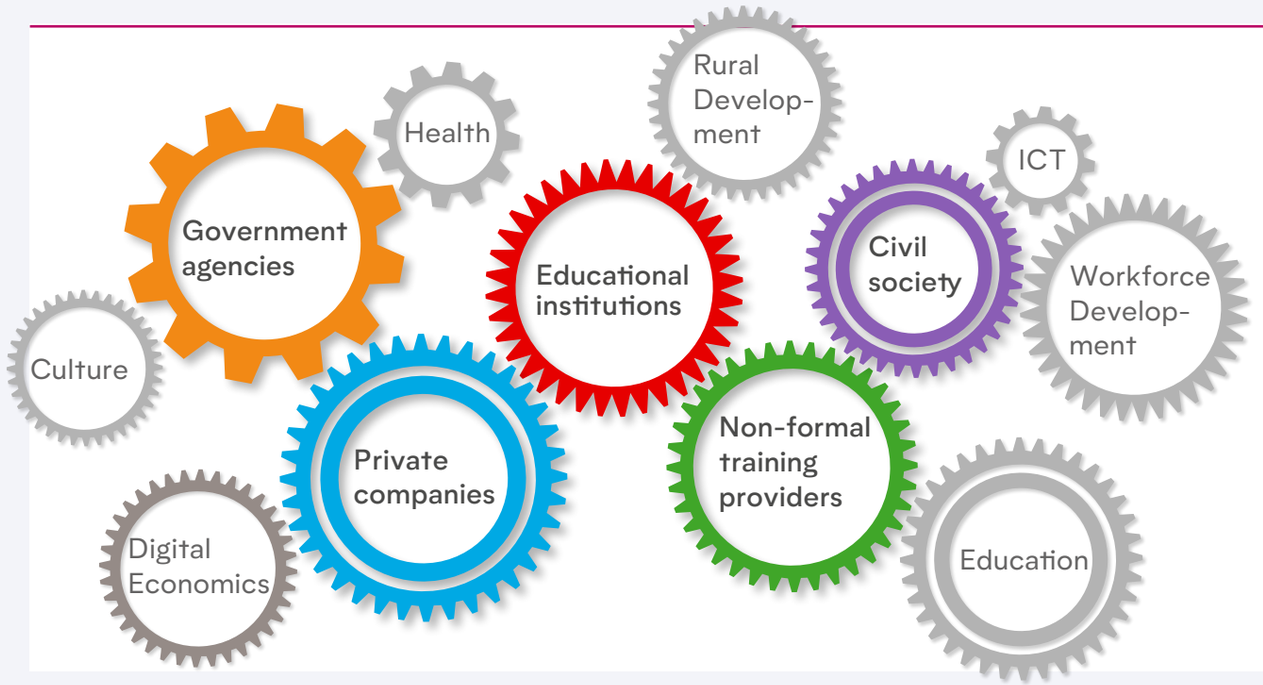
→ **Define the roles and responsibilities** needed for the success of the project. For example, this could be political partners, technical partners, partners for outreaching to target groups.

LESSONS LEARNT Plan for the role of a partner or individual "(wo)man on the ground" who acts as a local focal point and liaison for implementation (project 5, DS4JI).

→ Agree on **governance and cooperation modalities.** For example, set up a coalition, a steering committee or a sounding board and define the rights and responsibilities for each member.

GOOD PRACTICE Transparency is a core principle of good governance, and important in order to create trust in the cooperation (project 16, ELIFE).



Graphic 5:
Stakeholder engagement: aiming at building representation

Given the degree to which digital competences touch very aspect of work and life, the goal of many countries is to ensure that a broad and representative group of stakeholders engage in the digital skills strategy development process.

The graphic showcases the interaction of the different entities, in colored gears, and economic sectors in gray.

Source: ITU (2018): Digital Skills Toolkit. Chapter 3, Stakeholder engagement: aiming to build broad represention

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Step 6 – Implement, monitor and adapt

- → **Test your training concept through** implementing a **pilot**. Barriers to success, for example real-life challenges of learners that limit their access to your training, often only become clear once the project is launched.
- → Prepare to **constantly collect feedback and adapt.** The project action plan (Step 4) should be flexible in order to be adaptable in the short-term. Furthermore, expect that labour market demands, technology and the needs of the target group will evolve and change over time, so make sure to revisit your assessment and objectives (Step 2 and 3) regularly.

TIP Foster a culture of trial and error.

Share challenges and mistakes as a ground for learning and encourage partners to participate.

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5.1 Summary of findings

This toolkit set out to develop a hands-on guide for practitioners of TVET and higher education in development cooperation on how to best promote digital competences. Based on the adapted Global DigComp Framework for understanding and measuring digital competences (Chapter 2), it offers a systematic overview of the experiences and "lessons learnt" of 22 current projects from around the world (Chapter 3). Based on these insights, a practice-oriented guide proposes concrete steps and recommendations on how to strengthen digital competences on micro, meso and macro level (Chapter 4). This chapter concludes by placing the findings in the context of global developments and future trends in the digital transformation of economies, labour markets as well as in TVET and higher education.

The 22 project examples featured in this toolkit provide a glimpse of the diverse landscape of initiatives to promote digital competences in TVET and higher education around the world. Based on a qualitative analysis using the adapted Global DigComp Framework, the main observations are the following:

1 The need to **strengthen digital competences** at the basic level remains high. While more and more sophisticated digital technologies emerge and advance, the gap between those at the frontier of digitalisation and those with few or no opportunities to strengthen their digital competences is widening. Some projects promote advanced and specialised digital competences (for example, related to software programming) to tap into new opportunities. Yet, target beneficiaries often lack access to digital devices and infrastructure, meaning basic-level "onboarding" to digital technologies is often required as a first step of strengthening digital competences. Furthermore, there is a high need to focus on the inclusion of vulnerable and marginalised groups, such as those most affected by poverty, gender inequalities, disabilities, regional disparities or migration, in order to close this *"digital divide"*.

2 The 22 project examples paint the picture of a **diverse landscape of approaches** for strengthening digital competences. This reflects the differences in the needs of target groups, local contexts and demands of potential employers in the private sector, and points to the need of careful and constant adaptation. While cooperation with the private sector is necessary to respond the actual skills demand, national education systems play a crucial role in assuring the quality of such trainings. National education systems or non-private organisations tend to include topics such as security and digital well-being more often, while trainings responding the demands of the private sector focus much more on occupation-related skills. The big challenge is to integrate non-formal approaches into the formal education system in order to make those approaches more sustainable and to

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ensure formal qualification and certification for students, graduates and other target groups attending e.g. trainings. In general, the fact that the projects are strengthening digital competences, does not automatically mean that trainings can be done fully online. Especially when it comes to strengthen basic digital skills, in-presence trainings have a higher impact.

3 Nevertheless, TVET and higher education practitioners need to strike a balance between adaptation to needs and harmonising efforts in a **standardised and comparable competence framework**. While different frameworks exist around the world, this toolkit applied an adapted version of the Digital Literacy Global Framework (Global DigComp Framework) while looking at the 22 project examples. For practitioners in TVET and higher education, Global DigComp Framework, EU DigComp or DigComp Edu are frameworks that can serve as the basis for planning, implementing, measuring and benchmarking digital competence initiatives.

4 While all digital competences summarised in the adapted Global DigComp Framework matter, those related to **safety and security** need to be highlighted. Issues such as protecting data and devices, personal well-being, combatting online gender-based violence or reducing the environmental impact of digital technologies are not (yet) a focus concern of TVET and higher education interventions and if included, they are mainly covered by non-private training institutions. When looking at overall trends (see 5.2), these topics are likely to increase in importance in the future.

5 **Cooperation with the private sector plays a crucial role** in projects and can be roughly structured in two different setups: Firstly, working with the private sector as a potential employer helps to better tailor the promotion of digital competence to actual labour market needs. Students and graduates gain practical hands-on skills through e.g. internships, apprenticeships or dual VET that directly improve their employability. Secondly, TVET and higher education systems seek cooperation with companies in the **tech sector**, such as those providing software, hardware or technical advice needed to implement education or training mediated through digital technologies (e.g. e-learning or blended learning formats). These companies play an equally crucial role when it comes to strengthening digital competences. The depth of cooperation can range from onboarding on how to use specific digital tools to co-creating joint education programmes in which private companies design and implement capacity development interventions. This is particularly important as traditional education institutions struggle to keep up with the rapid innovation of digital technologies. However, managing diverging interests of academia and private companies, navigating data protection vis-a-vis global tech companies or negotiating intellectual property rights of education material are just a few examples of challenges that education institutions face (see “Do’s and Don’ts of cooperating with tech companies”, Chapter 4).

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6 While the lessons learnt and success factors are as diverse as the approaches of the projects themselves, a good **assessment of the needs of the labour market** as well as **skills gap analyses** are crucial to build digital competences that improve employability of the different target groups. A good cooperation with local partners and institutions is the key for sustainable interventions and listening to target groups' needs in terms of skills and training modalities will improve the reach of interventions such as those found in the 22 projects.

5.2 Trends and outlook of digital competences in TVET and higher education

As labour markets are transformed by digitalisation, it places new demands on TVET and higher education institutions aiming to prepare students for future jobs (see Chapter 1). At the same time, the rapid development of technologies also transforms education systems, including traditional modes of teaching. Online and blended learning are already common in many education programmes around the world. Immersion in virtual, augmented and mixed realities or the use of artificial intelligence to tailor the speed and content of learning to each individual are emerging approaches likely to become mainstream in tomorrow's classes. These technological advances can offer new opportunities to improve the inclusion of marginalized learners, increase the quality and reduce the cost of teaching and learning.

While this toolkit is not focussing on the use of digital technologies in TVET and higher education, the toolkit "The use and implementation of XR in VET teaching, a practical guide", published complementary to this toolkit by the VET Toolbox Coalition, offers practical guidance on how to implement extended reality in TVET. Further helpful resources to guide TVET and higher education practitioners interested in digital technologies can be found in Chapter 6).

In light of the digital transformation of both employment and education systems, digital competences are gaining a firm hold in traditional curricula. However, a key challenge is to keep up with the rapid speed and dynamic changes of digitalisation: knowledge, skills and attitudes to navigate today's digital world might be outdated tomorrow, while the emergence of new technological advances poses new demands.

Despite these changes, some key trends can be observed that are likely to define the digital competences needed in TVET and higher education in future. First, digital competences that address the **digital safety, security and wellbeing** of students and teachers will be increasingly important. These include data security, digital threat awareness and digital ethics. Over the last years, a range of controversies

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have erupted from data leaks violating the rights of individuals, new forms of digital attacks and online violence, and ethical questions of the way data algorithms shape the digital world. As this toolkit shows, promoting digital competences linked to safety and security need to occupy a more central role in TVET and higher education programmes in development cooperation.

Second, a handful of **global tech companies** are in control of key channels and platforms that educators and learners use. Examples are digital devices such as tablets and mobile phones as well as software used in education and the workplace. As each of these comes with its own data policy and potential lock-in effects, education systems need to promote digital competences related to informed choices on using specific hardware or software. Beyond these, navigating an increasingly digital economy often requires the understanding of software distribution platforms such as app stores, data storage and servers, cloud computing platforms, social media platforms or advertisement systems, just to name a few. The digital economy is not only complex, but also rapidly changing. This is likely to pose a central challenge for TVET and higher education practitioners that aim to prepare learners with the right competences for future jobs.

Lastly, the digital transformation is linked with the **global threat of climate change**. As these megatrends are equally affecting the future of education and employment, they need to be addressed in a complementarity, in an isolated way. The adapted Global DigComp Framework includes awareness of the environmental impact of digital technologies and their use as a digital competence related to safety (see Chapter 2). However, future digital competences are likely to go beyond understanding the environmental footprint and include a more strategic understanding of the climate change mitigation and adaptation opportunities and risks that the digital transformation holds. Complementary to this toolkit on strengthening digital competences, the VET Toolbox Coalition has also published the “Skills for Green Transformation Toolkit”, with innovative approaches, tools, and initiatives that contribute to developing the skills needed to achieve the green transformation.

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As labour markets and education systems are transformed by digitalisation, the success of initiatives to strengthen digital competences often hinges on strong collaboration between multiple and diverse actors. Effective public-private cooperation, such as between universities or training centres on the one hand, and private tech companies on the other, remain a central concern. Furthermore, while the digitalisation of the world of work generates new employment opportunities, practitioners in TVET and higher education need to equally pay attention to the negative effects. This includes fostering competences for managing safety and security risks and the link with the growing threat posed by climate change.

In the spirit of the VET Toolbox Coalition, this toolkit aims to contribute to an overall knowledge exchange, to peer learning and innovation across the diverse actors of TVET and higher education in development cooperation. As digital competences evolve and change dynamically, a constant exchange of experiences for learning, iterative adaptation and innovation of approaches is required. This toolkit seeks to encourage an open conversation with practitioners in TVET and higher education to share and discuss approaches and learnings and help to build upon them in future.

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6.3 Assessment of digital competences and competences

6.4 Other articles and papers

6.5 Open Educational Resources (OER)

6.6 Regulation and standards of digital data, digital economy and digital development

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6.1 Digital competences and competence frameworks

Competency framework for teachers / educators

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6.2 Toolkits related to digital competences and digital transition in TVET and higher education

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6.3 Assessment of digital competences

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Khan Academy https://www.khanacademy.org/

Merlot https://merlot.org/merlot/index.htm

OER Africa https://www.oerafrica.org/

OER Commons https://oercommons.org/

OER Metafinder https://goo.gl/GKflqN

OpenStax https://openstax.org/

SDG Academy https://sdgacademy.org/

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Global

Principles for Digital Development https://digitalprinciples.org/

European Commission

General Data Protection regulation https://gdpr.eu/

Digital Services Act (DSA) and Digital Markets Act (DMA):
https://digital-strategy.ec.europa.eu/en/policies/digital-services-act-package

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