

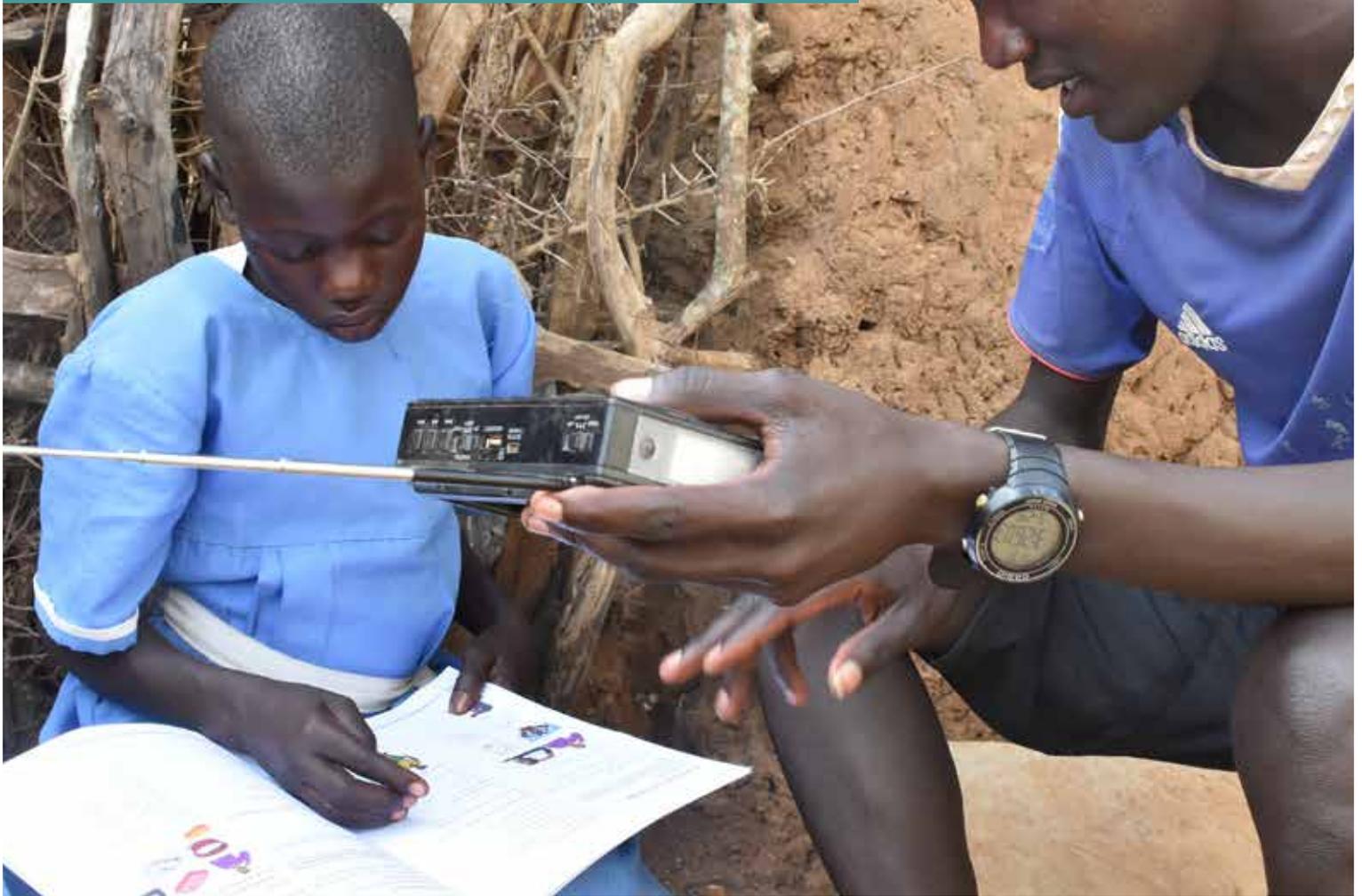
# TechGuide

Supporting quality learning for inclusion  
with information and communication  
technologies (ICT)

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A technical guide for the design and management of ICT-enhanced  
basic education, lifelong learning and vocational training

Findings from three SDC Communities of Practice



We wish you  
an inspiring  
reading!

## Finding new ways of ICT-supported inclusive learning

The Covid pandemic and the resulting restrictions have fundamentally changed learning and teaching all over the world. The context for learning has become more complex and dynamic. Educational managers and teachers are challenged to find new ways to foster inclusive quality learning and to leave no one behind. They need to innovate teaching practices and the use of digital technologies to overcome new restrictions of conventional forms of face-to-face learning and teaching.

To tackle this additional challenge, this guide provides practitioners in the field and decision makers with practical advice on how to develop effective and sustainable ICT-based educational solutions. You can learn how to use information and communication technologies (ICT) to support participative learning. The document can help you answering three questions:

1. How can we design effective ICT-supported educational solutions? (Chapter 2)
2. How can we manage a sustainable use of these solutions? (Chapter 3)
3. Which lessons have pioneers learned that we can benefit from? (Chapter 4)

This guide draws from the experience of a variety of projects that the Swiss Agency for Development and Cooperation (SDC) has implemented together with its partners in the last two years. The Education Network and the IED Network have supported together with the Swiss Educational Innovation Network (SNBI) three communities of practice (CoP) in basic education, lifelong learning and vocational education and training (VET).

How to find quickly what you are looking for in this document:

- Chapter 1 helps you navigating the document to find answers to concrete questions.
- In chapters 2 and 3 you will find short descriptions of key aspects of ICT-supported learning. Many links lead you to presentations and findings of some 16 CoP sessions, as well as to 16 cases in the Appendix which will give you a deeper insight into projects and help you to connect with experienced project leaders.
- In chapter 4 you find 10 valuable "lessons learned" of our CoP-discussions and practical tips.

**We wish you an inspiring reading!**

Your IED Team & EDU Network, SDC

December 2021

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## Abbreviations

BE	Basic Education
CoP	Community of Practice
e-content	learning content in digital form
ICT	Information and Communication Technologies
LLL	Lifelong learning
MoE	Ministry of Education
SDC	Swiss Agency for Development and Cooperation
VET	Vocational Education and Training (used in this document also for TVET (technical VET) and VSD, Vocational Skills Development)

# 1 Overview: Questions that are being addressed in this Guide

This document aims to help you finding answers to the following questions.

## 1.1 How can we design effective ICT-supported learning solutions?

- 1) Defining the goals and needs: What are the most pressing challenges and the most relevant goals for the learners and other stakeholders? (Chapter 2.1)
- 2) Identify effective learning/teaching activities and methods in our team and together with partners: How can learners achieve the learning goals? (ch. 2.2)
- 3) Analyse the potential and restrictions of your context (ch. 2.3):
  - 1) Organisation: Which resources and commitment do we have as organisation?
  - 2) Human Resources: What are the skills and motivation of learners and teachers?
  - 3) Technology: On what hardware, software, connectivity, power supply can we draw on?
- 4) Selecting ICT-tools to enhance learning and teaching: Which tools help us best in supporting the identified learning/teaching activities in your context? (ch. 2.4)
- 5) Designing digital learning content: Which e-content is needed to foster participative learning and teaching? (ch. 2.5)

## 1.2 How can we manage the sustainable use of ICT-supported learning solutions?

- 1) Strategy development: On which fields of action will we focus together on a national/regional scale in the next 2-5 years? (Chapter 3.1)
- 2) Implementation: How can we test our ideas and learn and improve in a pilot? How can we integrate infrastructure, training, and support when up-scaling? (ch. 3.2)
- 3) Building an effective team: How do we combine the necessary expertise? (ch. 3.3)
- 4) Sustainable budgeting: What does our solution cost in the long run? (ch. 3.4)
- 5) Communication: How do we foster interaction with our stakeholders? (ch. 3.5)
- 6) Training and support: How can teachers be trained and supported effectively in the application of pedagogical, technical and management skills? (ch. 3.6)
- 7) Managing change: How do roles, processes and knowledge sharing change? (ch. 3.7)
- 8) Quality assurance: How do we evaluate your ongoing work and the results to continuously improve our solution? (ch. 3.8)
- 9) Managing goals and controls: How do we plan to achieve a high impact? How do we measure outputs and outcomes? (ch. 3.9)

### 1.3 Where to start? How can I develop a concise proposal from my project idea?

If you are a novice in the field of digitalization, we recommend that you start with studying our guide of the design and management of effective online learning/teaching solutions ([see annex](#)). It shows how you can integrate the aspects discussed in this TechGuide step by step when launching a project.

You find different versions of this document online:



[ICT4education](#) (Guide of the design and management of effective online learning/teaching solutions in French)

ICT4VET (E): Guide focusing on VET-specific aspects  
([PDF](#) and [recording of webinar with Swisscontact](#) [1 hour, 400 MB])

[TIC para FP](#) (ICT4VET-guide in Spanish)

The following project outlines can help you to document the answers that you develop in discussions with your team, as a basis for discussions with decision makers and potential sponsors.



“[1 ICT4edu project outline template](#)”: Word document with general structure of key aspects to be considered in a proposal (4 pages)

“[1 ICT4VET project outline template](#)”: The same document with a focus on VET (4 pages)

« [1 ICT4VET plan du projet modèle](#) » (4 pages, document en français)

# Put the learner at the center!



Do not start  
with a tool,  
reflect on  
your goals!

## 2 Designing effective solutions

In this chapter we discuss the following aspects of the design of ICT-supported learning and teaching.

1. Defining your project goals and learning goals
2. Identifying effective learning and teaching activities
3. Context analysis: Identifying potentials and restrictions
4. Selecting ICT-tools: Enhancing learning and teaching
5. Designing digital content

### 2.1 Defining your project goals and learning goals

Discussing the focus of your project in your team and with stakeholders will help you to refine “SMART” goals in your context analysis (ch. 2.3). The project goals will guide the development of learning goals for your target group (e.g. focusing on school curriculum vs. non formal life skills). The needs of the beneficiaries need to be analysed carefully, based on strategic goals, such as gender and social inclusion or access to promising markets.

The thorough description of learning goals, describing learners’ measurable, expected behaviour, will be an essential basis for the development of learning and teaching activities, as well as the selection of appropriate digital media and ICT-tools.



#### Presentations

Defining project goals: “[Decision Matrix](#)” (slides 3-4): Three steps to develop project goals, based on needs, interests and overarching strategic goals.

Defining learning goals: “[Learning Landscape](#)” (slides 3-5): Simplified overview of Bloom’s cognitive learning goals as a basis for identifying adequate learning methods and media.

Examples of project goals in our case collection (see appendix)	Case
The goal is to improve the health and living conditions of the rural communities and to address the national problem of the high number of un- and underemployed youth.	> <a href="#">Case VET 2</a> Training community paramedics in Bangladesh
The Project has the goal to reach 170'000 students in basic education and to enhance inclusion and equity in basic education for the hard-to-reach, and digitally disadvantaged children and youth.	> <a href="#">Case EDU 1</a> TV + self-instructional material in Bhutan
The goal is to reduce poverty, boost economic growth and contribute to sustainable development. To achieve these goals, the project supports 72 VET providers, fighting against the devalued image of VET and improving their online presence (aim: to improve the image of VET)	> <a href="#">Case VET 3</a> Training Bolivian VET providers in online marketing

The goal is to improve market entry and enhance qualifications and employability of hospitality workers group through upskilling and certification.	> <a href="#">Case VET 5</a> Online cooking sessions
To provide access to educational resources for 3,600 students in high security risk areas, digital resources will be provided.	> <a href="#">Case EDU 2</a> Tablettes et plateforme au Burkina (in French)
To offer education and vocational training alternatives to children and adults who have dropped out of the national education system in the context of a multifaceted crisis with the participation of local actors.	> <a href="#">Case EDU 3</a> Applications Android au Mali (in French)
<b>Examples of learning goals</b>	<b>Contact</b>
The students can set short-, medium- and long-term goals. In their feedback and behaviour, they demonstrate positive aspirations, optimistic perspectives, and a vision to learn.	> <a href="#">Case VET 6</a> Blended learning with psychosocial support in Honduras
The farmers acquire skills on how to cultivate and market medical plants and learn to “think outside the box”.	> <a href="#">Case VET 7</a> Online training and coaching via Viber in Kosovo
Participants are able to read, write and calculate in one of the local languages (Fulfulde, Songhai, Bamanankan). (Case in French)	> <a href="#">Case EDU 3</a> Applications Android au Mali



© Save the Children

Involve the learners, keep them engaged!

## 2.2 Identifying effective learning activities and media

Once the project goals and learning goals are clearly defined, experts in the area of pedagogy and pedagogical media can develop together with teachers different options, which learning-, teaching- and coaching activities and which media could help the learners achieving these goals.



### Presentations and findings from CoP sessions

[Overview](#) of learning activities (working paper)

Findings from our ICT4VET CoP-session on “[Supporting learning in practice](#)” gives you an overview of several approaches how to support the preparation of practical learning, online- and onsite practical learning as well as reviews after practical phases (5 pages). With contributions of Sabine Roth, Sidita Dibra, Stefan Butscher, Urs.

Examples of learning activities, use of media and tools in our case collection	Case
Students used the MesoVET platform (providing online teaching material, assignments, assessments, and mock exams) and the other ICT-tools extensively, they liked the online offer, showed increased motivation, and improved their ICT-skills. In short, they learned to use ICT not only for pleasure, but also for learning.	<p>&gt; <a href="#">Case VET 1</a></p> <p>Comprehensive blended learning in Albania</p>
Teachers recognised the importance and effectiveness of communicating to students, reading assignments, and giving feedback. They “rediscovered” their students online, who showed a different behaviour online compared to the classroom.	<p>&gt; <a href="#">Case VET 1</a></p>
The availability of self-instructional material with illustrated texts, assignments, and assessments in addition to video lessons broadcasted on TV significantly reduced barriers to learning during the pandemic, according to 78% of interviewed students.	<p>&gt; <a href="#">Case EDU 1</a></p> <p>Bhutan</p>
Android applications for literacy and skills training supported non-formal training with presentations, exercises and assessment. 73% of learners passed the final assessment tests.	<p>&gt; <a href="#">Case EDU 3</a></p> <p>Mali (in French)</p>
Careful design of a digital learning setting to foster active learning, using open questions and assignments, some with automated scoring. Blended learning in flipped classroom settings: cover theory online and discuss questions in class.	<p>&gt; <a href="#">Case VET 5</a></p> <p>Online cooking sessions in Cambodia</p>
The project managed to incorporate the platform “Capacitate Para El Empleo” with existing online learning material, assignments, and assessments.	<p>&gt; <a href="#">Case VET 6</a></p> <p>Blended learning in Honduras</p>



<p>Not all participants were equally participating, and some needed more “nudging” to engage in conversations. A future measure will be the design of a more dynamic facilitation of the instant messaging groups, such as having conversations with individuals before beginning the training, to explain to the training participants the concept of such online training, its potential, the importance of active participation and what is expected of them.</p>	<p>&gt; <a href="#">Case VET 7</a></p> <p>Online training and coaching via Viber in Kosovo</p>
<p>The pairing of students with higher and lower levels of knowledge and skills (to leverage peer support) and the organisation of groups of four students has promoted the learning process.</p>	<p>&gt; <a href="#">Case VET 6</a></p> <p>Blended learning for 1'200 youth in Honduras</p>
<p>Just as in the face-to-face approach, every child is assigned to a virtual classroom of max. 25 students. Each day, teachers develop and share educational videos, worksheets, voice messages and other learning material via WhatsApp with the students. The students are then able to call their teachers, send them pictures or audio messages to ask questions on the lesson received or ask for additional support in completing the tasks assigned.</p>	<p>&gt; <a href="#">Case EDU 7</a></p>
<p>60 “educational series” drawing on principles of edutainment and gamification have helped learners to acquire digital skills. Some 230'000 learners have succeeded in the certification procedure.</p>	<p>&gt; <a href="#">Case EDU 4</a></p> <p>Ukraine</p>



## 2.3 Context analysis

Once the project team has clarified the goals and has identified 2-3 promising approaches to support learning and teaching, a thorough analysis of the human resources, the organisational- and technological context related to these approaches is pivotal. Profound knowledge of the strengths and weaknesses in these areas will be an indispensable basis for assessing the feasibility and expected potential of your approaches.

The context analysis is a valuable basis for the identification of resources the project can draw on, the planning of preparations and project interventions, as well as a first estimation of cost drivers (s. chapter 3.4).



### Presentations and findings from our CoP

Introduction to the context analysis: Presentation of the “[Decision Matrix](#)”, providing examples of organisational-, HR- and technological aspects that are pivotal for the development of ICT-supported solutions.

Findings from our ICT4VET CoP-session on “[How to reach the most vulnerable groups](#)” analyses on 3 pages, which aspects must be given special attention in the context analysis to understand the needs of vulnerable learners.

# Analyse your restrictions – and potential

Examples of benefits of the context analysis in our case collection	Case
<p>A close partnership spearheaded by the Ministry of Education helped align efforts of local governments, community leaders, parents, media (national and private TV stations), private firms, and donors.</p> <p>The Ministry has developed minimum curricula and initiatives to ensure educational continuity for students supported by new technologies.</p> <p>Government support and political will at the national level helped to incorporate into the Digital State initiative, this gave additional promo opportunities making the project nationwide. One of the most popular national TV channels and streaming service MEGOGO could be involved.</p>	<p>&gt; <a href="#">Case EDU 1</a> Bhutan</p> <p>&gt; <a href="#">Case EDU 2</a> Burkina (in French)</p> <p>&gt; <a href="#">Case EDU 4</a> Ukraine</p>
<p>Result of analysis of organisation: There was no national plan how to tackle this situation. School directors did not know what to do in this situation. The vulnerability of the system was exposed through the crisis.</p>	<p>&gt; <a href="#">Case VET 1</a> Blended learning in Albania</p>
<p>The analysis of requirements and contextual solutions led to the organisation of orientation workshops on e-learning tools for the trainers and teachers. These workshops contributed to a fast and targeted dissemination of expertise and solutions on conducting and managing distant learning methods by using various ICT applications and online tools.</p>	<p>&gt; <a href="#">Case VET 2</a> Training community paramedics in Bangladesh</p>
<p>Understanding the user-perspective can take a lot of time. User context and motivations need to be carefully analysed to avoid a lack of engagement or drop-out. Understanding this perspective is an important prerequisite to create awareness, trigger motivation and facilitate learning activities. It is pivotal to analyse the limitations and restrictions that the target group faces and spend enough time with the team and experts to develop creative solutions.</p>	<p>&gt; <a href="#">Case VET 2</a> (also <a href="#">EDU 4</a> lifelong learning and <a href="#">EDU 7</a> basic education)</p>
<p>It is vital to understand the needs of the learners to be able to communicate the purpose of the training effectively. In the future, it is planned to have one-on-one conversations with participants at the very beginning of planning.</p>	<p>&gt; <a href="#">Case VET 7</a> Coaching farmers in Kosovo</p>
<p>Students can be a great inspirational resource on which teachers can draw. Skilled students were even involved successfully in national forums together with instructors, where they brought in their perspectives and developed innovative ideas. (comm. Urs: when analysing human resources, do not forget this resource!)</p>	<p>&gt; <a href="#">Case VET 6</a> Blended Learning in Honduras</p>
<p>Based on the identified local resources and needs of the partners, lacking infrastructure was provided: computers, laptops, Office 365, internet connections, and headphones.</p>	<p>&gt; <a href="#">Case VET 4</a> Training TVET teachers in BiH</p>

## 2.4 Selecting ICT-tools

Only if the previous steps have been thoroughly conducted, you have the necessary basis for an informed decision on how to support learners and teachers effectively with ICT.

The defined learning goals and learning/teaching methods help to specify the requirements for the selection of ICT-tools. They will help you to decide, which tools support best the planned activities and forms of interaction (such as feedback or discussion). Compare the expected benefits with expected cost (see chapter 3.4). This step concludes the design phase of many projects. Usually there are several possible ICT-tools. Do not jump too quickly to the “first best” offer a provider might offer you. Discuss alternatives in your team!



### Learning Landscape

Presentation "[E-Learning Landscape](#)": Visualization showing which digital media is usually used to support which learning activities and forms of interaction.

Examples of different results of tool selection in our case collection	Case
Lesson learned: Innovation is not about using the newest technology, but about finding the right tools that have an effect on people's learning and lives.	> <a href="#">Case VET 7</a> Supporting farmers in Kosovo
A total of 44 video lessons for all subjects based on adapted curriculum were broadcasted via national and private radio stations, social media and websites. The blending of traditional TV, 4'500 onsite education hubs and digital spaces has expanded the reach of the national platform with educational "soap operas" to 630'000 users.	> <a href="#">Case EDU 1</a> , Bhutan  > <a href="#">Case EDU 4</a> , Ukraine
The ad-hoc support of health practitioners on Facebook resulted in quick answers to a huge number of questions and queries.	> <a href="#">Case VET 2</a> Bangladesh
Acquisition of 12 „e-classroom kits“ (36 tablets for classes in primary school / 15 laptops for post-primary and secondary schools; tablet, laptop, video projector and management software for the teacher, WIFI access point, solar system). An e-learning platform has been developed and equipped with pedagogical content. Development of mobile applications.	> <a href="#">Case EDU 2</a> Burkina (in French)
12 Android applications for literacy and skills training in 3 local languages (Bamanankan, Peulh and Songhai) can be accessed from a mobile app or on a learning management system (Moodle) in the browser of a tablet or laptop.	> <a href="#">Case EDU 3</a> Mali (in French)
In an initial phase, WhatsApp and Google Classroom were used to provide some 340 learners with digital learning material (...) after one month the project incorporated the platform "Capacitate Para El Empleo". Some adaptations were made regarding content and length in different subjects. (comm. Urs: valuable experience for discussion: using different platforms, customizing platforms, adapting content for different platforms, content management)	> <a href="#">Case VET 6</a> Platforms for 1'200 youth in Honduras

For both teachers and students, the use of Google Classroom and Zoom was new and satisfying. They realized that online learning is possible. Most of them were impressed when experiencing breakout rooms or taking small quizzes in Zoom.	> <a href="#">Case VET 2</a> Training community paramedics in Bangladesh
The design options of the free tools for video production were limited. For future productions the purchase of the professional video tool will be considered – as will be the involvement of a videographer. This also depends on the budget available.	> <a href="#">Case VET 7</a> Video clips for female farmers in Kosovo

## 2.5 Designing digital learning content (e-content)

For some projects, the design of e-content is a major task. They have to “digitize” a lot of existing content or develop new e-content. It is pivotal to design e-content in a way to foster (inter-)active and participative learning developed in chapter 2.2. There are many options of procuring and adapting existing e-content, (co-)producing e-content together with subject matter experts, pedagogical media experts, editors, industry experts, teachers etc. Continuous quality assurance and updating content are vital to ensure that your e-content is technically correct, didactically meaningful, curriculum-aligned and user-friendly.

Important aspects of e-content development in our case collection	Case
In several workshops, 50 teachers and educational supervisors have produced 435 digital resources in 15 subjects as part of the curriculum for primary, post-primary and secondary examination classes.	> <a href="#">Case EDU 2</a> (in French)
Converting the textbook into digital materials was intensified, focusing on 3D modelling, visualisations, interactive features on selected human anatomy and organs, and virtual reality components.  Lessons learned: Online content needs to be engaging and targeted to the very different ways in which people acquire information and learn.	> <a href="#">Case VET 2</a> Training community paramedics via FB and platform (also <a href="#">EDU 6</a> non-formal education Bénin (in French))
The project managed to incorporate a platform with existing online learning material, assignments, and assessments. Some adaptations were made regarding content and length in different subjects such as sales, cooking, motorcycle mechanics, networks, graphic design.	> <a href="#">Case VET 6</a> Blended Learning in Honduras
The e-content was produced in three steps: 1) involving experts to draft a sophisticated base of training material, 2) simplifying and shortening this content, and 3) designing attractive presentations.  The production of e-content led to “mobile” training material which supported its application and dissemination in several ways: Family members and neighbours also watched the videos and benefitted from this form of training. Moreover, the training association reused the videos also on their Facebook-site and their website. The online material was printed and used for local training by one woman.	> <a href="#">Case VET 7</a> Training farmers via Viber in Kosovo

Experiment,  
test and  
improve  
continuously!

## 3 Management of sustainable solutions and services

Using ICT to support learning and teaching requires specific management know-how. In this chapter you will find a few valuable hints on relevant aspects in the following areas:

1. Strategy development: Design for scaling up
2. Implementation: Piloting and up-scaling
3. Building an effective team
4. Sustainable budgeting
5. Communication and coordination
6. Training and support
7. Managing change
8. Quality assurance
9. Measuring outputs and outcomes

### 3.1 Strategy development: Design for scaling up

If you can coordinate ICT-solutions at a large scale and over a longer period of time, e.g. together with the Ministry of Education (MoE), an international NGO or national assemblies, the design of an ICT-strategy will strengthen the impact and sustainability of your efforts. It will provide a valuable basis for design and selection of projects, as described in chapter 2.



#### Documents

[Template](#) to support the development of an e-learning strategy (10 pages)

### 3.2 Implementation: Piloting and up-scaling, continuous change

Innovative ICT-solutions are mostly implemented and evaluated in pilots. This phase focuses on involving selected learners, teachers and other stakeholders. The needed tools will be customized, e-content produced, teachers trained and strongly supported. This is a time of intensive mutual learning, formative evaluations, knowledge sharing and improving.

Once a solution has been implemented and improved, it can be applied with the entire target group, and even with further target groups beyond the initial scope of the project. This phase focuses on the transition from temporary project collaboration to continuous partnerships and integration into existing structures.

In both phases a continuous process of designing-experimenting-testing-improving leads to gradual changes and improvements.



#### Presentations and findings from our CoP

The findings of our CoP session "[Supporting partner governments and institutions](#)" give you an overview of approaches how to guide and support partner institutions. With contributions of Sidita Dibra and Ivana Georgievska.

Examples of piloting in our case collection	Case
Several schools and companies piloted the use of social media and digital collaboration applications in various subjects. The Moodle-based online platform "MesoVET" was launched and used by about 300 users in 6 partner schools. Intensive support via phone and on site helped trainers to use the platform and to solve problems. In communities of practice teachers share their experiences. Several evaluations helped involving teachers in piloting, everyone learned a lot. "Power users" passed on their experience to peers in communities of practice.	> <a href="#">Case VET 1</a> (BL in Albania)
Communicating with partner schools, identifying pilots with learning management systems and providing the solutions and IT infrastructures for all the partners.	> <a href="#">Case VET 2</a> Bangladesh
A pilot programme to support cooking practice: 15 students participated in a training for the occupation "cook assistant". The students had to buy and present their ingredients and preparations, do the cooking in their homes, and present their completed meal in a Zoom session with 2-3 other students and a trainer. The trainer guided the students and assessed their activities. He also demonstrated activities and theory via Zoom.	> <a href="#">Case VET 5</a> (online cooking course)
Activities such as training of actors, experimentation of contents and approaches, monitoring and evaluation and capitalisation are planned. ... A formative face-to-face evaluation should be planned.	> <a href="#">Case EDU 2</a> Burkina (in French)
A close partnership spearheaded by the MoE helped align efforts of local governments, community leaders, parents, media, private firms, and donors on a national level. The project has realized for the first time the broad use of self-instructional materials combined with video lessons in Bhutan and teachers have learned to support learners online and to coach them locally.	> <a href="#">Case EDU 1</a> Bhutan
Sociological research allowed to identify needs and gaps of different focus groups in areas such as digital skills, fraudulent activity, or abuse. Optimizing wide public outreach, the project partners were also successful in presenting the courses at "1+1", one of the most popular Ukrainian TV channels, and streaming service MEGOGO. A public awareness campaign has helped to promote the course.	> <a href="#">Case EDU 4</a> Ukraine

Examples of upscaling in our case collection	Case/contact
In our CoP of September 2021, we discussed challenges and lessons learned of two different approaches to upscaling: <ul style="list-style-type: none"> <li>- EGAP-Programme: "From zero to hundred" in one year: nationwide training of schoolteacher and educational managers in Ukraine.</li> <li>- Skills for Jobs: Blended Learning for VET Students in Albania. Starting with pilot VET schools, upscaling within 5 years to a nationwide offer.</li> </ul>	> <a href="#">Case EDU 4</a> > <a href="#">Case VET 1</a>
In our CoPs in May and June 2021, we elaborated different approaches how to achieve sustainable solutions <ul style="list-style-type: none"> <li>- <a href="#">large projects with a nationwide scope</a> (see also the two cases above), and</li> <li>- "<a href="#">light and effective solutions</a>", using approaches that can be disseminated in many different contexts.</li> </ul>	

### 3.3 Building an effective team

In complex and dynamic contexts, it is very important to build an effective team with the needed expertise and the "right spirit" to tackle challenges and change. Most projects combine their own expertise with local, national and international experts and consultants (looking for partners in this order), also involving private sector partners. Some also involve students with strong ICT skills in ideation and support.

Examples of project goals in our case collection	Case
The expertise that you need depends on the focus of your solution, your decision to buy or create solutions yourself, and the size of your project and budget. Possible fields of expertise: <ul style="list-style-type: none"> <li>- Pedagogical expertise of the project team and the external providers <ul style="list-style-type: none"> <li>• to design online or blended learning solutions.</li> <li>• to train, coach and support teachers in the design and facilitation of online learning.</li> </ul> </li> <li>- Psychosocial support for teachers, parents and children to deal with change, risk and crisis situations</li> <li>- Subject matter expertise for curriculum development and e-content development (e.g. mathematics, engineering, life skills)</li> <li>- Educational media expertise to produce e-content and/or to train, coach, and support teachers in the production of interactive online learning content.</li> <li>- ICT expertise of project team and of external providers to customize, host and maintain ICT-tools and platforms.</li> <li>- Project management expertise to manage a complex network of stakeholders.</li> <li>- Communication skills to facilitate stakeholder engagement and the co-development of effective solutions.</li> </ul>	All cases, with different mix of experts, depending on their approach  (see sub-chapters "Impact and success factors", last subtitle)

Combining expertise as success factor: It is important to reconcile the different perspectives concerning visualisation between the views of the directors of the technical training centres (with a focus on “technical” content) and marketing/social media experts (with a focus on user needs and communication habits).	> <a href="#">Case VET 3</a>  (online course to train VET-providers in digital marketing)
Lessons learned: Developing expertise during the project:  - As this situation has been new for everyone, the project team had to learn while doing. E.g. through online workshops including a big number of stakeholders where complex issues in the context of a TVET reform were discussed.  - The adaptation of learning processes and materials take a lot of time. Flexibility of the instructors is a key point during the transition. The role of the instructor changes fundamentally in the online learning process. Instructors need continual support after the training to assure a high quality of teaching. Some institutions could not react quickly, but the project played an important role in developing a crisis response within a few weeks.	> <a href="#">Case VET 4</a>  (online courses to introduce teachers etc. to digital pedagogy and tools)  > <a href="#">Case VET 6</a>  (Blended learning)
Involvement of the expertise of students: Students can be a great inspirational resource on which teachers can draw. Skilled students were even involved successfully in national forums together with instructors, where they brought in their perspectives and developed innovative ideas. The innovation process has been an exciting experience, giving students the opportunity to create new things and it has also prompted great teamwork! (s. also 3.7, knowledge management)	> <a href="#">Case VET 6</a>  (Blended learning in Honduras)
Messages on how to prevent the spread of Covid-19, how to keep safe and child protection concerns were sent by teachers to caregivers and children via the WhatsApp groups. This was particularly important as the ongoing crisis in Lebanon has placed children and families under significant stress, with an increase in the cases of children in need of mental health and psychosocial support, as well as child protection services. ... Further investment in teacher’s wellbeing, through mental health and psychosocial support (MHPSS) sessions for example, is needed so that the teachers can better deal with the impact of the different crises affecting the country.	> <a href="#">Case EDU 7</a>  Lebanon
To apply principles of edutainment and novel gamification elements in an innovative format of “educational soap opera” for to specific target groups, expertise in the area of adult education methodologies and the design of public awareness campaigns is pivotal.	> <a href="#">Case EDU 4</a>  Ukraine
A close partnership spearheaded by the MoE helped align efforts of local governments, community leaders, parents, media, private firms, and donors.	> <a href="#">Case EDU 1</a>  TV and local coaching Bhutan
The project raised awareness in regional educational authorities about the importance of promoting equitable STEAM education in rural areas and motivating girls to study science and pursuing technology careers as a pathway to contribute to regional development. The project also encouraged to the most important university of the region to collaborate with the non-profit foundation to offer certified training to schools’ educators in STEAM subjects.	> <a href="#">Case EDU 5</a>  STEAM education in Colombia

### 3.4 Sustainable budgeting

Sustainable budgeting of ICT-solutions can be challenging. Some cost items are often underestimated. A thorough budgeting of cost, including continuous support, maintenance, hardware repairs and replacement, e-content revision, quality assurance etc. builds the basis for a sustainable impact.

**Presentations and documents**

This [Excel](#) with common cost items of ICT-supported learning can support you in establishing a rough budget and compare different options, once you have identified possible approaches (see ICT4education (E), second step).

Findings from our ICT4VET CoP-session on “[Financing of ICT4VET](#)” gives an overview on 3 pages of monetary and non-monetary contributions of different stakeholders to different cost categories of projects. With contributions of Boris Trimcev, Daniela Lilja, Fation Dragoshi, Kurt Wüthrich, Lukas Brück, Ralf Rothe and Urs.

Examples of cost drivers in our case collection	Case
<p>In our case collection you find an overview of the most important cost items.</p> <p>Most of the projects invest a significant part of their budget in training and supporting trainers.</p> <p>Depending on their focus, size and initial situation, main budget items are also:</p> <ul style="list-style-type: none"> <li>- Hardware purchase and maintenance</li> <li>- Software implementation and customization or licences</li> <li>- E-content</li> <li>- Connection cost</li> <li>- Change management and project management</li> </ul>	all cases, end of sub-chapter “ICT-supported response ...”



New technologies require additional skills

### 3.5 Communication and coordination

Big ICT4education projects involve quite a variety of experts and practitioners with different interests and sub-cultures. The careful planning and continuous support of communication among the key actors and the coordination of their activities has obviously a strong effect on the processes and deliverables of a project.

Examples of communication/coordination efforts in our case collection	Case
<p>Examples of stakeholders who need to be informed and connected.</p> <ul style="list-style-type: none"> <li>- National ministries (of Education, of economics, IT-departments, and related ministries)</li> <li>- Teacher training colleges / universities/ continuous education provider</li> <li>- National IT providers</li> <li>- School directors</li> <li>- School administration</li> <li>- School IT</li> <li>- Trainers</li> <li>- Company coaches</li> <li>- Students</li> <li>- Parents</li> <li>- Practitioners/former students</li> </ul>	Different cases

### 3.6 Training and support

Training and support of teachers, coaches, school directors, as well as administrative, technical- and pedagogical staff is a core element of most projects. Without intensive skills development in areas such as participative learning/teaching approaches, digital media use and production or meaningful use of online tools, projects will usually not achieve their goals and quality of learning.



#### Presentations and documents

The findings of our "[ICT4VET CoP-session on Training of Trainers](#)" give you an overview of proven approaches to train the trainers on 4 pages, and how challenges have been tackled by the CoP-members.

Examples of training needs and approaches in our case collection	Case
<p>Overview of possible areas that need to be trained</p> <ul style="list-style-type: none"> <li>- Online learning design: guiding participatory learning online</li> <li>- Adapting and uploading materials (technical assistance, embedding in learning activities)</li> <li>- Facilitation of content development</li> <li>- Online classroom management: time schedules, recreation, tips for self-directed learning etc.</li> <li>- School management: information, support</li> <li>- Monitoring learning and teaching activity</li> <li>- Platform administration and technical support</li> <li>- Training and supporting students to use technology effectively</li> </ul>	Most cases
<p>Possible form of training</p> <ul style="list-style-type: none"> <li>- Online video-tutorials for self-directed learning</li> <li>- Guides, checklists, studies (text)</li> <li>- Online courses for bigger audience (50-100 participants, e.g. Webinar-presentation with Q&amp;A)</li> <li>- Interactive Workshops online or on site (10 – 20 participants)</li> <li>- Communities of Practice</li> </ul>	Several cases
<p>Working in big groups is not very helpful. Reaching many people in a short time seems tempting, but it is not effective. As an introduction to new topics, it is okay, but coaching 1:1 and in small groups is the key to learning and change! The teachers demonstrated increased online teaching skills in a very short time. Their online engagement increased significantly, e.g. in communities of practice or in Facebook groups.</p>	<p>&gt; <a href="#">Case VET 1</a></p> <p>(training of about 400 teachers)</p>

Workshops to learn to create and improve e-content, and to capitalise and disseminate good practices through different communication channels: media, platforms, websites, social networks and educational journals.	> <a href="#">Case EDU 2</a>  Burkina (in French)
The creation of courses with about 10 people per course (instead of 50) would allow to target the content better and involve the participants – if possible, within budget and organisation.	> <a href="#">Case VET 3</a>  (training about 100 teachers and directors)

### 3.7 Managing change

The implementation of comprehensive digital solutions usually has a strong impact on the organisation: some roles are new (e.g. IT-support), some roles change (e.g. teachers as coaches and content producers), processes and communication change (e.g. training and support, innovation). Projects need to manage this change continuously. The anticipation, design and reflection of changes helps to understand and manage this change. This is usually very time intensive. It has the potential to improve the project results significantly and helps the organisation to become more effective.

Examples of knowledge management in our case collection	Case
Teachers from across different schools worked in groups to design and develop digital learning content. Teachers participated widely in online knowledge sharing events sharing challenges and experiences.	> <a href="#">Case VET 1</a>  Albania
Students can be a great inspirational resource on which teachers can draw. Skilled students were even involved successfully in national forums together with instructors, where they brought in their perspectives and developed innovative ideas. (s. also 3.3, team)	> <a href="#">Case VET 6</a>  Honduras
In several workshops, 50 teachers and pedagogical supervisors have already produced 435 digital resources in 15 subjects as part of the minimum curriculum for primary, post-primary and secondary examination classes. The resources have been validated by inspectors. The teachers have developed skills in the scripting of educational resources.	> <a href="#">Case EDU 2</a>  Burkina (in French)
The workshops with regional authorities, managers and teachers represent a remarkable strategy to socialise the benefits of the STEAM methodology. Change of roles: Activities and experiments to develop in family, enabled the dialogue between students with their parents and caregivers, likewise generated significant learning and greater motivation in the learning process.	> <a href="#">Case EDU 5</a>  Colombia

### 3.8 Quality assurance

During implementation (ch. 3.2) continuous evaluation and improvement helps to analyse student and teacher activities and deliverables. There can be seen a tendency to formative evaluation in the pilot phase and summative evaluation in the up-scaling phase. Both types of evaluation build an important basis for the implementation of improvements.



#### Findings from CoP sessions

Findings of the ICT4VET CoP-session in July 2020 on “[Measuring learner’s progress](#)” with contributions of Erka Caro, Franz Kehl, Ivana Georgievska, Katrin Ochsenbein, Sidita Dibra, Urs

Findings of the ICT4VET CoP-session in July 2020 on “[Evaluating projects](#)” with contributions of Boris Trimcev, Daniela Lilja, Erka Caro, Kurt Wüthrich, Ivana Georgievska, Roman Troxler, Sidita Dibra, Urs

Insights related to quality assurance in our case collection	Case
User feedback deserves very high attention, but it requires time: listening to what users say, considering their needs, reflecting on the perspectives of team members.	> <a href="#">Case VET 1</a>  Developing a national platform MesoVET in Albania
Frequent contact and frequent exchange with local partners were most important! (Comment Urs: If possible as part of a systematic formative evaluation.)	> <a href="#">Case VET 4</a>  Online courses in Bosnia & Herzegovina
An evaluation by an independent national consultancy helped to assess the availability of learning materials and to identify the most popular deliverables (self-instructional learning material, video lessons and printed version).	> <a href="#">Case EDU 1</a>  TV & guided self-directed learning
73% of learners passed the final assessment tests.	> <a href="#">Case EDU 3</a>  Mali (in French)

### 3.9 Measuring outputs and outcomes

There is a wide range of well-known and reliable instruments to measure the achievement of project goals and learning goals (see chapter 2.1). A few examples: Expert evaluation of e-content or interactive software features. Surveys, interviews and tests to assess effects of events such as training workshops. Logfile-analysis, e.g. of software performance. To measure outcomes, observation, interviews and surveys can generate meaningful insights into learning and teaching activities and learning results. With sufficient and adequate participants and control groups, standardized tests can generate reliable data on learning outcomes. In addition to controlling-oriented measurement, different forms formative evaluations can allow deep insights into how different processes are managed and perceived.

Lessons learned and results of measurement in our case collection	Contact
Lesson learned: Continuously monitor the effects of the activities! If one is in a hurry, opportunities to tailor the offer are missed out.	> <a href="#">Case VET 1</a>  BL in Albania, constantly improving a national platform and practical learning
Kahoot and Mentimeter were used for interaction and engagement during the synchronous learning sessions (quizzes, games, etc.), as well as for the evaluation of the course modules.	> <a href="#">Case VET 5</a>  Cooking courses in Cambodia
It is important to monitor the activities of students, as they cannot be observed in the same way as in the classroom.	> <a href="#">Case VET 6</a>  BL in Honduras, offering psycho-social help
An external evaluation created a valuable baseline and reliable findings. It led to the following results: 95% of the teachers and 78% of students confirmed in interviews that the availability of learning materials significantly reduced barriers to learning during the pandemic. The self-instructional learning material was the most popular alternative for continued learning. They are together with video lessons an alternative to continuing learning during the pandemic. The printed version was pivotal for students with no or limited access to digital technologies.	> <a href="#">Case EDU 1</a>  Bhutan
The online resources have been validated by inspectors. Activities such as training of actors, experimentation of contents and approaches, monitoring and evaluation and capitalisation are planned.	> <a href="#">Case EDU 2</a>  Burkina



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## 4 Lessons learned of pioneers – practical tips

Intensive discussions in 16 CoP sessions have led to valuable lessons learned that might also help you when starting your project planning.

### 4.1 With technology alone you achieve little, but you can support pedagogy effectively

Pedagogical design is often underestimated, when talking about ICT-supported learning. A platform or a learning app alone does not lead automatically to better learning activities and results. BUT technology can be very effective and adding value if it supports a sound pedagogical design and different forms of interaction, or if it helps overcoming existing boundaries.

> Hint: Focus on pedagogical questions first, before discussing tools (chapter 2.2). Always look for 2-3 alternative solutions to select/combine (chapter 2.4)

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### 4.2 The platform is not your goal – performing learners are!

Projects can get easily trapped on the wrong focus, concentrating for example on the design of a platform, the delivery of devices or e-content – and neglecting the learning activities in the local context of the learners. It's sometimes helpful to remind developers of simple questions such as: How many learners use our platform/content? How? Do they really engage in participative learning? How do we give them feedback and measure learning results?

> Hint: Always consider the perspective of an individual learner and groups of learners, when defining the goals, learning activities and context analysis (chapters 2.1-2.3), and when evaluating and measuring results (chapters 3.8 and 3.9)

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### 4.3 “e-learning” does not mean “one-way” – it can be cooperative and motivating!

Many people think of endless texts and videos when they hear terms such as “e-learning” or “digital media”. However, several projects have shown that the use of tools such as social media, interactive apps or conferencing software have led to even more exchange among students, interaction with trainers and even a change of mindset towards participatory learning. This is motivating for learners and encourages them to participate regularly, reducing drop out.

> Hint: When defining learning activities, make sure to create opportunities for learners to interact with each other and to work actively with learning content (chapter 2.2). When selecting ICT-tools (chapter 2.4), look for solutions to support these learning activities in a meaningful way, supporting different forms of cooperation (1:1, n:1, n:n), interaction, feedback, self-reflection etc.. The cases VET 2, VET 7, or EDU 1 have found innovative solutions in this area.

#### 4.4 Watch your cost-drivers from the very beginning.

Depending on the focus of your project you will be confronted with cost drivers in different areas, such as e-content production, purchasing devices, licensing specialized software or training different stakeholders on a large scale. Those are areas that deserve special attention in the context analysis: On which existing solutions and stakeholders can you draw on in these areas? Are there cheaper options that also support the planned learning activities?

> Hint: While you develop 2-3 possible options of ICT-supported solutions (step 2 in the 1-page Guide), keep the cost drivers in mind. The costing tools in chapter 3.4 can support first cost estimates, as well as the selection of the solution and project budgeting.

#### 4.5 We have many options when planning hardware use – try the less expensive ones!

The “one tablet per child” (1:1) approach is only one (in literature often criticised) option of using technology to support learning – and a rather expensive one! As hardware is one of the bottlenecks of project funding, it's worth considering the use of radios, simple phones or smartphones of learners.

> Hint: If you have to purchase devices that support interactive features, such as smartphones, tablets or laptops, consider to develop lesson plans or coaching offers that also work with a “student – device” ratio of “6:1” or 12:1. There are several options to do this, such as group work in class with different tasks and media, coaches with portable sets of tablets offering to several groups of learners a certain number of learning hours per week each, or organizing group work with one device.

#### 4.6 The difference between a textbook and online resources is bigger than you think

Teachers are often overwhelmed with the task to produce “e-content”. They are usually not qualified as editors! We need to establish teams with the right mix of media experts, instructional designers and teachers; and define production-, deployment-, and maintenance-processes that lead to effective production and use of high-quality e-content (a good example is case EDU 6, Burkina).

> Hint: In the context analysis (chapter 2.3) look for stakeholders (organisation/HR factors) with expertise in the field of e-content development. During piloting (chapter 3.2) test e-content with learners and teachers and plan enough time to improve e-content design. If you plan to involve teachers in e-content development, thoroughly prepare them in training and support (chapter 3.6) and develop with expert quality assurance processes (chapter 3.8).

#### 4.7 You cannot buy “all in one” – you rather start an exciting and rewarding journey

Some providers will try to convince you that everything will be OK, once you have bought or licenced their solution. In our experience it usually takes a lot of analysing, discussing, experimenting, innovating, trying and failing, learning, (re-)organising, revising, evaluating and improving until you have reached an effective and sustainable solution. During this process your team might be transformed if you are patiently learning together.

> Hint: This challenge has to be addressed in all aspects of design and management described in this document. Most project members in the case collection can tell you some inspiring stories of this sometimes nerve-wrecking, but also exciting and rewarding journey.

#### 4.8 Organizational change matters – and absorbs a lot of our attention.

The use of ICT in education can have a strong impact on your training/school organisation. Some examples: Devices need to be maintained and managed, the role of teachers change (e.g. regarding communication with students, production and management of e-content, cooperation and communication with practice coaches), experiences need to be reflected with different stakeholders, national platforms need to be managed. All these changes need to be carefully anticipated and managed. This requires a lot of planning, management attention and many meetings. Experimenting with new forms of ICT-supported training might even lead to a digital transformation of your organisation.

> Hint: Strategic- and organisational aspects have to be considered from the very beginning, starting with the definition of project goals (chapter 2.1), and the context analysis (chapter 2.3, organisational and HR factors). In all of the Management aspects (chapters 3.1-3.8) organizational change needs to be fostered. Cases such as VET 1 or EDU 1 showcase the organisational focus nicely.

#### 4.9 Learners can contribute more than you might think.

Some projects have managed to involve learners in different ways in the testing, improvement, support and design of online tools. Try to identify power-users among your learners. There are usually a handful of young people who can help you to find a different perspective, inspire you with new ideas and sometimes support other learners very effectively.

> Hint: In context analysis (chapter 2.3) focus also on the potential of learners (not only on their needs and limitations). They can play a crucial role in the ideation and formative evaluation of pilots (chapters 3.2 and 3.8) and sometimes even in support (chapter 3.6). Case VET 3 describes a nice example of teachers drawing on learners as “power users”.

#### 4.10 Outlook: new solutions for education in complex and dynamic contexts

The Covid crisis has increased the need to develop educational solutions that can be used in low-resource context. We expect that actors in the educational sector need to be able to react quickly to changing contexts, changing from face-to-face to online learning and vice versa. This will have a strong impact on the design and management of ICT-supported education. Some examples: The design of digital tools and e-content needs to take into account different scenarios of usage such as in the classroom, blended learning or distance learning. Teachers and coaches need to be trained to be able to teach effectively in these different scenarios. Directors and school administration needs to re-design management processes and train their staff to react quickly to changes.

> Hint: Strategic- and organisational aspects have to be considered from the very beginning, starting with the definition of project goals (chapter 2.1), and the context analysis (chapter 2.3, organisational and HR factors). In all of the Management aspects (chapters 3.1-3.8) organizational change needs to be fostered. Cases such as VET 1 or EDU 1 showcase the organisational focus nicely.

# Appendix

## ICT4learning Guide: Three steps to launch ICT-supported quality education

The following questions can help you to determine the feasibility of ICT-supported inclusive learning in your context. It can guide you in designing effective online learning/teaching solutions in a short time, avoiding some of the most common pitfalls.

### 1. As-is analysis and needs analysis

- a) Analyse Goals and needs: What is most important for children/youth, teachers and schools?" (learning goals, curricular objectives, project goals etc.)
- b) Identify key learning activities: How can learners achieve relevant goals?
- c) Analyse your context: Do the teachers have the necessary pedagogical skills and media skills? Does the school management and administration support online teaching/learning activities? Which hardware, software, connectivity and electricity services can the school, learners and teachers draw on?
- d) Which partners can support us? Who could we cooperate with?

### 2. Define your approach

- a) Which tools, features and content help us best to support which key learning/teaching activities and to address the most important goals and needs?
- b) Risk management: How can we foster inclusion, privacy, sustainability etc.?
- c) Pre-selection: Which project ideas are most promising?

### 3. Selection and Planning:

Define and budget core activities in a rough timeline:

- a) Setting up/customizing infrastructure: How do we intend to use the tools? Which curriculum aligned e-content do we need?
- b) Information: How do we keep schools, teachers, learners, parents and other stakeholders up to date?
- c) Training and support: How can teachers and coaches be trained and supported hands-on to apply the needed pedagogical, technical and management skills?
- d) Selection: Which projects will be launched?
- e) Plan for iterative growth
  1. Piloting: Can we test our solution with a small group of "champions"? Which training and support do they need? Which controls will be evaluated to improve?
  2. Up-scaling: How can we improve infrastructure, training & support of all the teachers and learners? How do we launch the offer with all the stakeholders?
  3. Continuous monitoring and evaluation: Which controls will be evaluated to improve the existing solution? How can we transform our solution in a long-term service?

# Cases in Vocational Education and Training

## VET 1

### Skills for Jobs Albania: comprehensive blended learning

Rich forms of blended learning and practical learning of 7'000 students on a national scale have led to increased motivation, a change of learning and teaching behaviour and skills development of learners and several other stakeholders.

### Background, Covid-19 challenge: abrupt shut down, severely restricted practical learning

Skills for Jobs (S4J) aims to offer about 7'000 young people in 9 schools and 1 VET centre in Albania effective vocational education and training. Better skills will help young people to get a job that they love and that will make them thrive. At the core of S4J are work-based learning, the use of technology in the classroom, blended and individualized learning, making the VET offer relevant for students, training on industry standards, and the application of a business mindset in the management of VET institutions.

In the first phase, before the emergence of Covid-19, several ICT-supported solutions have been implemented. Examples: In 2018, the Moodle-based online platform "MesoVET" was launched and used by about 300 users in 6 partner schools. The platform serves as an all-inclusive solution that replaces classroom teaching and supports independent learning of students and apprentices. Several schools and companies piloted the use of social media and digital collaboration applications in various subjects. E-content has been produced by professionals and some teachers.

In spring 2020, schools were closed literally within a day. The situation was marked by high levels of uncertainty. VET schools lacked learning materials (books, electronic materials) and many students, especially in rural areas, had inadequate digital infrastructure at home including poor or no internet connection. Both students and teachers had limited digital skills. Learning and teaching could not be monitored. There was no national plan how to tackle this situation. School directors did not know what to do in this situation. The vulnerability of the system was exposed through the crisis.

As most of the companies were closed during the full lockdown for 3 months, the lack of practical learning was a big issue. Extracurricular activities were seen as

"luxury" and did not take place any longer.

All these developments impacted the outputs of the project: Employability was heavily impeded. Schools were closed for the remaining academic year and learning took place sporadically and via WhatsApp. Placements could not be realised and the number of companies that offered apprenticeship diminished.

### ICT-supported response: Reinforcing a broad ICT-support

The project reacted with an immediate adaptation and extension of their online solutions and support. Two out of several interventions are described here.



A student during online classes with MesoVET

The online platform "MesoVET" supported the preparation for the Matura and level exams, providing online teaching material, assignments, assessments, and mock exams, facilitated by the teachers. The level exams were successfully carried out on the MesoVET platform by S4J partner providers. The platform was not offered only to the 9 partner schools, but to all 34 public VET-schools in Albania. After 3-4 weeks, 62% of the teachers at project partner schools were using MesoVET exclusively or in combination with other tools such as Zoom or Google Classroom. Initially, most of the students used WhatsApp with its limited features to support online learning. However, as 80% of students were able to access the MesoVET platform, the total number of users rose from 400 to 4'000 within weeks (March 2021: 8'000).

Several schools and companies supported practical learning with the tools outlined before. Some examples are:

- IT teachers from different schools implemented various extra-curricular activities to motivate the students. In the Kolin Gjoka school for example, a hackathon targeting 150 ICT students was organized. In this activity, individuals or groups of students developed 25 projects to provide innovative solutions related to health/Covid-19 issues, such as a smart

device to measure temperature or smart disinfectant bottles. In this competition, three winners were selected by a jury of teachers representing different VET schools.

- Economics teachers gave assignments related to current economic problems to 6 groups of students. The solutions were discussed in an online session.
- In a hospitality competition/challenge, students had to prepare meals at their homes with a given set of ingredients within a given time. They were very eager to participate and presented their preparation via Zoom. A mentor coached them through each challenge. Two apprentices made it to the finals and got the opportunity to present their skills in a local TV broadcast.

The implementation of the above solutions and services required a considerable re-allocation of funds within the existing budget. Because of the lockdown many costs could be reduced, such as travel and accommodation expenses, conference rooms and per diems. The type and modality of training and support offered to partner providers was re-designed. Inputs and activities were reconceptualised, such as using resources to improve the virtual learning platform instead of investing in face-to-face blended learning classroom. The reduced costs were then used to cover other aspects and interventions, such as the development of teaching materials.

To continue the development of digital learning content for around 85% of the students in the public VET system in Albania (about 15'000 students), the project team estimates the need for an investment of about CHF 250'000 over 3 years for activities such as training & coaching, e-content development, and platform maintenance.

## Impact and success factors

### Observed effects

- Students used the MesoVET platform and the other ICT-tools extensively, they liked the online offer, showed increased motivation, and improved their ICT-skills. In short, they learned to use ICT not only for pleasure, but also for learning.
- Some 400 teachers demonstrated increased online teaching skills in a very short time. Their online engagement increased significantly, e.g., in communities of practice or in Facebook groups.
- The trust of school directors in the potential of blended learning has grown. This has led to a reinforcement of teacher activities in this field.
- The boost of ICT-use has led to an integration of the MesoVET platform into the teaching activities of partner schools. The platform has been endorsed by government representatives.

### Innovation

- Teachers and students learned to leverage the platform for active, self-directed learning and teaching – not only as a repository of learning material.
- Teachers recognised the importance and effectiveness of communicating to students, reading assignments, and giving feedback. They “rediscovered” their students online (who showed a different behaviour online compared to the classroom).
- Teachers were surprised that students could also learn online and “got what they needed”. There was a change of mentality: blended learning is now seen as helpful by many teachers.
- Teachers from across different schools worked in groups to design and develop digital learning content. Teachers participated widely in online knowledge sharing events sharing challenges and experiences.



Students at 'Hamdi Bushati' school in 'Tourism-Hospitality' working with MesoVET platform after return to class

### Contributing activities

- In three surveys for teachers and students, challenges, needs and expectations were analysed systematically. The feedback was used to improve and tailor the interventions.
- Training of teachers in producing and using online learning content included: Applying meaningful pedagogical designs to online teaching, creating assignments and assessment, uploading materials on the platform, and accompanying students online.



Webinar for teachers on online and blended learning

- Coaching of teachers: started out with Zoom webinars with a high participation but low interactivity and shifted to smaller groups of 2-4 teachers from the same subject or field of application, or even 1:1 coaching, achieving much more intensive participation, peer-interaction, and observable increase of skills.
- Involving teachers in piloting. Everyone learned a lot. “Power users” passed on their experience to peers in communities of practice.
- In weekly meetings school directors and administrative staff learned how to organize and support online training from a management perspective.
- Digital content was created and improved for future use. Digital content for practical subjects was developed by teachers offering online materials to 67% of students in the public VET system in Albania.

### Expertise that was pivotal for the project:

- Pedagogical expertise of the S4J-team and the external provider to train, coach and support teachers in the design and facilitation of online learning.
- Educational media expertise (external provider: LerNetz) to train, coach, and support teachers in the production of interactive online learning content.
- ICT expertise of the S4J-team and an external provider to customize and upgrade Meso-VET.
- Communication expertise of the S4J team to facilitate communities of practice for the exchange of experiences and challenges and the co-development of efficient solutions.
- Project management expertise to manage a complex network of stakeholders on different levels.

## Challenges and lessons learned

### Challenges

- ❗ Lack of digital skills of teachers and students
- ❗ Lack of willingness of teachers to get involved in participatory training and use of ICT. There was a need for a mentality shift.
- ❗ Lack of monitoring and reporting modalities from and towards national agencies, making it not imperative for teachers and directors to provide online learning.
- ❗ Lack of clarity and of endorsement from governments, poor top-down support for changes in teaching, learning and collaboration with companies.
- ❗ Lack of infrastructure, e.g., laptops in schools, smartphones and internet access of students and teachers, to access learning content and participate in communication and interaction.

### Lessons learned

- ✅ User feedback deserves very high attention, but it requires time: listening to what users say, considering their needs, reflecting on the perspectives of team members.
- ✅ Continuously monitor the effects of the activities! If one is in a hurry, opportunities to tailor the offer are missed out.
- ✅ Working in big groups is not very helpful. Reaching many people in a short time seems tempting, but it is not effective. As an introduction to new topics, it is okay, but coaching 1:1 and in small groups is the key to learning and change!



One-to-one coaching through the platform

- ✅ Blended learning: The use of ICT can be very effective, but face-to-face contacts are still very important. Going to the classrooms, meeting teachers and students, and discussing their views, questions and problems will lead to essential insights.

## Links and contact

The following links lead you to interesting and valuable resources of the project:

### Online tools and content

- MESOVET platform: [www.mesovet.al](http://www.mesovet.al)
- S4J position paper: Starting an academic year in the new reality.
- 12 Best Practice cases of distance learning by S4J (Booklet, 17 pages)
- Great variety of interesting case studies, reports, and leaflets
- Webinar recording: S4J experience on developing digital learning materials
- YouTube Playlist on S4J presenting its experience in online learning to international communities

### Project websites

- <https://skillsforjobs.al/>
- Promoting communities of practice on Facebook
- Website on cooking competition (in Albanian)
- Frymeso YouTube Vlog
- YouTube Playlist of S4J partner schools featuring in the A2 TV morning show

### Contact

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Expertise: monitoring and results measurement,  
action research, project design



Eltjana Plaku, MRM specialist of S4J,  
Expertise: monitoring and results measurement



## VET 2

### Training young adults as health workers in Bangladesh

Using Facebook has helped to reach practitioners in a very short time. The training of teachers and the provision of infrastructure have opened new opportunities for online learning and teaching.

### Background, Covid-19 challenge: Closure and delays

The project ASTHA (Achieving Sustainability Towards Healthcare Access) has been facilitating the training of some 5'000 young adults as skilled health workers since 2011. ASTHA seeks to promote the development and growth of a nationally accredited course called Community Paramedic (CP) that enables students to become mid-level healthcare professionals and, in so doing, caters to the primary healthcare needs of rural people. With the intention to create an enabling environment for this profession in the healthcare sector, ASTHA also focuses on the capacity development of graduate trainees (CPs). It creates awareness and influences stakeholders as well as policy makers.

The goal is to improve the health and living conditions of the rural communities and to address the national problem of the high number of un- and underemployed youth. ASTHA also facilitates and supports continuous education of graduate trainees across the country in partnerships with 23 training providers. In the context of curriculum improvement and training, different forms of ICT use, such as virtual reality, e-content, and a learning platform, have been piloted and implemented before the pandemic.

The biggest Covid-19 related restriction was limited mobility, which led the students into an unprecedented educational crisis. A nationwide shutdown closed all the schools and training institutes and, for a few months at the beginning of 2020, the entire education system was on hold. However, on-the-job training (6 months of a 2-years course) continued in different hospitals and clinics.

Continuous medical education training for graduates and practitioners stopped. On the other hand, the need for such seminars increased during pandemic to suppress the spread of Covid-19 in rural communities. However, during the pandemic it was not possible for the project and the partners to organize face-to-face training sessions because of the mobility restrictions. The

restriction led to huge delays. Some training institutes resumed classes online through Facebook Messenger and Zoom. However, the number of students participating in class was not satisfactory and they faced difficulties with adjusting to the 'new normal' and subsequently, the quality of training was compromised. Additionally, the shortcomings of the IT-infrastructures of the schools also became apparent during this time. All the teachers and 80% of the students have smartphones, but they have little knowledge on how to effectively use these tools for learning and many do not have money to buy airtime.

### ICT-supported response: social media, training, and infrastructure

The project had to respond very quickly to the new situation, taking several immediate measures:

- Supporting licenced graduates (Community Paramedics/CPs) in communities in Covid-19-related training in an existing Facebook-page with some 800 members. The project team uploaded recorded PowerPoint presentations and answered questions of CPs. The videos had more than 2'000 views on average.
- Providing 3 days on-site "orientation meetings" for 40 trainers from 12 schools, giving them hands-on orientation training on how to effectively support online learning with tools that some schools had started to use, such as Google Classroom, Zoom or Padlet. Focusing on online pedagogy (assignments, assessments etc.) in practical training and 1:1 trouble shooting.

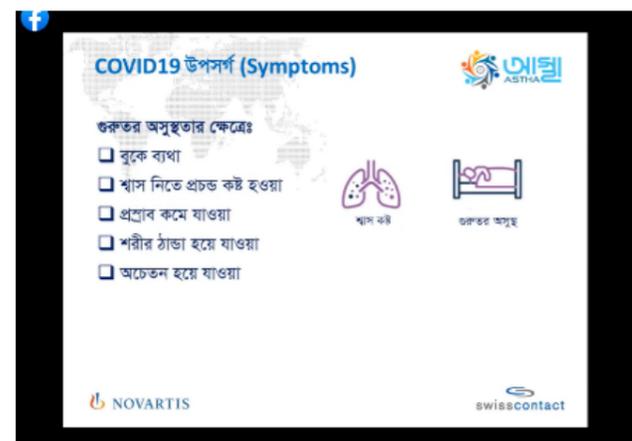


Orientation meeting on e-learning tools

- Improving IT-infrastructure in 23 partner schools, implementing conference systems, laptops for teachers and projectors.

E-content development by converting the textbook based curriculum into digital materials was intensified,

focusing on 3D modelling, presentation of existing textbooks by implementing visualisations, interactive features on selected human anatomy and organs, and virtual reality components.



Online content on Facebook

To create the right balance between face-to-face and online training, the project has also started working on the creation of an e-learning platform for continued medical education of graduate trainees in a partnership with digital education service providers.

Additional funds of about CHF 40'000 were used for the purchase and support of the hardware for 23 schools, and some minor expenses for pedagogical training. The project mainly used existing budget lines:

- The facilitation of the Facebook page required about 2 days of work, which was performed in the context of current activities of continuous education. A central source on this page was a video, which was initially an hour long but was later shortened to smaller clips of 20 minutes.
- Content development required 3.5 man-months for the development of the first 2 modules, and 2 classes for each topic to cover in the classroom.



IT equipment distribution ceremony

## Impact and success factors

### Observed effects

- The ad-hoc support of practitioners (graduates) on Facebook resulted in quick answers to a huge number of questions and queries regarding the provision of primary healthcare services, creating awareness on how to restrict the spread of the virus in the local communities. Many of the practitioners went back to Facebook to look up and request specific information. These healthcare guardians have a strong influence in their local environment and communities, which is why it was imperative to update them about the new virus and recommend immediate courses of actions.
- Quick analysis of requirements and contextual solutions led to the organisation of orientation workshops on e-learning tools for the trainers and teachers. These workshops contributed to a fast and targeted dissemination of expertise and solutions on conducting and managing distant learning methods by using various ICT applications and online tools.
- Power users: Teachers, who participated in the orientation meetings, passed on their knowledge to the peers in their own and neighbouring schools.
- Schools have discovered the potential of online tools and have, for example, started to use Google forms for online assessment.
- Distance learning helped the teachers/trainers rediscover the importance of e-content (3D modelling)

### Innovation

- For both teachers and students, the use of IT tools such as Google Classroom was new and satisfying. They realized that online learning is possible. Most of them were impressed when experiencing breakout rooms or taking small quizzes in Zoom.
- For most teachers and the management of the schools the e-learning approach was a novel experience that they have never thought of before.



Students experiencing virtual reality in the classroom

### Contributing activities

- Analysing existing channels of practitioners (former students) and using them purposefully to boost ICT communication and adaptation.
- Communicating with partner schools, identifying pilots with learning management systems, and providing the solutions and IT infrastructures for all the partners.
- Observing students' behaviour and reacting to it, e.g., shortening video presentations.

### Expertise that was pivotal for the project:

- An IT-company provided pedagogical expertise on remote learning.
- Partners with vast experience in media and ICT production in other educational and commercial sectors implemented the digitisation of the content.
- A Continued Medical Education training expert was hired as a consultant who prepared and presented the contents of the online Scientific Seminar on the Facebook page.
- The project team with a holistic view of the training programme provided partners with a thorough understanding of the context and the needs of the target groups and stakeholders.

## Challenges and lessons learned

### Challenges

- ⚠️ Airtime is expensive. It is tricky to find fair solutions on how to support students in poorer communities without allowing or creating inequalities.
- ⚠️ The use of ICT requires the development of a new business model with additional stakeholders and the investment in effective innovative activities, capitalizing on economies of scale.

The following Lessons learned are most valuable for the project team:

- ✅ Understanding the user-perspective can take a lot of time and thought. User context and motivations need to be carefully analysed to avoid a lack of engagement or drop-out. Understanding this perspective is an important prerequisite to create awareness, trigger motivation and facilitate learning activities.
- ✅ It is pivotal to analyse the many limitations of the target group and spend enough time with the team and experts to develop creative solutions that overcome the limitations.
- ✅ Use of social media as an immediate response has been very fruitful. The reach of the videos exceeded the project's expectations and responding to practitioners was easier via Facebook in the context of continuing education.

- ✅ Measuring learning activities is very important! It helps to understand the situation of learners, teachers, and schools in their local context.
- ✅ Online content needs to be engaging and targeted to the very different ways in which people consume information and learn.
- ✅ There is a need to find a healthy balance between face-to-face interaction and online interaction.

## Links and contact

The following links lead you to interesting and valuable resources of the project:

### Online tools:

[www.facebook.com/swisscontact.org](https://www.facebook.com/swisscontact.org)

### Project websites

- Project website
- Website of partner for e-learning tools orientation
- Partner for developing e-content-VR and 3D modelling

### Contact

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## VET 3

### Online course for VET-providers in digital marketing in Bolivia

An online seminar helped VET teachers and directors to enhance their online and social media marketing which allowed them to attract and recruit new learners in unprecedented ways.

### Background, Covid-19 challenge: Marketing of VET schools severely restricted

The “Technical Vocational Training project” fosters equal access to technical training and lifelong education and promotes youth employment. The broader goal is to reduce poverty, boost economic growth and contribute to sustainable development.

To achieve these goals, the project supports 72 VET training providers in their marketing activities, fighting against the devalued image of VET in the country and improving their online presence. VET providers are being trained in workshops in these and other aspects.

Before Covid-19, some of the face-to-face courses were supported by state or private e-learning platforms but this was not a constant or systematic practice.

In spring 2020, most of the marketing activities of VET institutions, such as trade fairs, presentation of training offers to schools, or specialised courses were restricted to door-to-door visits or to occasional radio broadcasts in selected areas. Online communication and marketing became vital with the changing context and the pandemic.

Only a few centres were using websites and social media pages and most centres did not maintain sufficient or up-to-date information in these spaces. Key products and services were not described, descriptions were not gender-sensitive and there were many irrelevant personal messages posted on social media. Many institutions did not have a Facebook (FB) page, although Facebook is used by 7.5 out of 11.59 million people in Bolivia.

### ICT-supported response: Online courses on digital marketing

The project offered two online courses in which 100 directors and teachers from 72 technical training centres

and alternative training centres participated, using the conferencing system “GoToWebinar”.



Webinar: trainer in action

The goal of the courses was to help the participants in the creation of valuable and convincing content to attract young learners: not only information on courses and careers, but also the description and visualization of special activities, success stories of graduates or the presentation of products that are sold by the schools, such as honey from beekeeping.

The participants learned how to improve their social media offer and present their training offers on Facebook in 4 modules of 3 lessons each: 1) Basics of FB, such as how to set up a followers page, get more followers, set up page information and relevant data, 2) advanced FB-skills, such as paid or free ads, visitor statistics 3) designing e-content (graphs, videos etc.) and 4) follow-up on FB for visitors retention. To foster active learning the course offered Q&A sessions and the participants had to do homework. A competition on the design and content of Facebook pages of participating schools and institutes encouraged engagement and learning to improve their visibility in the medium and to their audiences.

The solution was implemented within the existing budget: The course fees for online course costed USD 5'000 for about 100 participants. Because classes for the centres were initially suspended by the Bolivian government due to the health crisis, the teachers could allocate their time during the pandemic period. This was favourable, but teachers also would need to be paid for their additional time; however, because of the lock-down, there was no compensation needed, as they had free time.

### Success and contributing factors

#### Observed effects

- The participants proved their learning achievement: A competition among the technical training institutes and centres has led to the creation of new Facebook-pages or a significant improvement of existing

pages. Some have attracted up to 1'000 followers, they could communicate much faster, received quick responses to their posts and saved a lot of time, compared to face-to-face campaigns.



Teachers and directors participated from their offices

- The project has won the 1st prize in an international competition on the use of social media (s. link below) confirming that training for teachers on the virtualisation of their offerings is a trend that needs to be addressed to generate value.
- Participating in an online course as learners, teachers obtained a better understanding of the student interaction they need to facilitate. And the visibility they need so that professionals from the centres can enter the world as recognised or valued professionals in the field.

#### Innovation

- The online course was a creative reaction to challenging restrictions generated in the pandemic. The virtual learning activities were novel to most of the participants. The participants had time to participate and were interested in the new form of training, showing a lot of enthusiasm.

#### Contributing activities

- A careful analysis of the context helped to identify the needs of the institutions, defining the purpose of training, tender and to analyse 2-3 offers of external providers to select the provider responsible for the webinar.
- The use of an existing Facebook page with 9'000 followers and WhatsApp groups permitted the project to communicate quickly with potential participants and to stay in informal contact.
- Teachers consulted some students as power-users to support their marketing activities.

Expertise that was pivotal for the project:

- Two project members had good communication skills such as graphic design for social media, writing valuable content and knew the context and needs of the partnering schools very well.
- The project could mandate an experienced Colombian company with more than 14 years of experience in e-learning processes. Their marketing expertise in social media and experience in offering engaging online courses helped them to master all the tasks related to the online course which included the reporting and the follow-up of participants.

### Challenges and lessons learned

#### Challenges

- ⚙ Some participants had no electricity and/or internet access (especially via smart phones), when the course took place. A link to the recording was sent to the participants and interested people to deepen specific topics and to carry out the necessary practices.
- ⚙ Authorisation from the Bolivian Ministry of Education is necessary for this kind of course involving teachers from the public system. This requires more planning and preparation time to be compatible with state regulations.
- ⚙ Participants had very different levels of skills and experience. In the future, online courses will be offered on different levels (at least two: with FB-experience and starters).
- ⚙ Students should also participate in this kind of course. They have valuable potential to promote their schools (user perspective, social media skills, innovative ideas etc.).

#### Lessons learned

- ✅ The creation of courses with about 10 people per course (instead of 50) would allow to target the content better and involve the participants (if possible, within budget and organisation).
- ✅ It is important to reconcile the different perspectives concerning visualisation in the networks between the views of the directors of the technical training centres (with a focus on “technical” content) and marketing/social media experts (with a focus on user needs and communication habits).
- ✅ It is challenging to convince “conventional” teachers to understand marketing activities as an added value for the institution and to invest time for a FB-page. Many see it as a loss of time.

## Links and contact

The following links lead you to interesting information on the project:

Short clip of the marketing course describing the purpose of the course.

Facebook pages and fan pages of public training institutes that participated in the course (in Spanish):

- Instituto Tecnológico Bolivia Mar
- Instituto Superior Tecnológico Agroindustrial Monteagudo
- Instituto Tecnológico Superior „José Martí“

### Contact

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“Formación técnica profesional”, Swisscontact.  
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Experience: development of skills in new technologies related to social networks and web pages.



The team of the Swisscontact - FAUTAPO consortium.

## VET 4

### Strengthening TVET in Bosnia and Herzegovina

Online courses on tools and digital pedagogy and the provision of hardware have helped teachers, administrators, and directors of TVET schools to prepare and conduct online teaching.

### Background, Covid19 challenge: All schools and most companies closed

The project “TVET in BiH” supports the exchange between public and private players to foster dual organized TVET and systematically strengthen it as an educational pillar. It supports TVET schools, formal economy, pedagogical institutes, Ministries of Education (MoE) and intermediary institutions like chambers and employer associations. Six reformed TVET programmes with a focus on labour market needs and a high share of practical training in companies have been implemented. TVET professions are being promoted systematically through video clips, brochures, social media campaigns etc. Before Covid-19, the partner schools were equipped with computers and software to implement the reformed curricula and with ICT-equipment for the practical training in the metal departments of the schools. Apart from this, there was no direct ICT-support for teaching or learning.

The country experienced a hard lockdown and all schools had to close from one moment to another and switch from “normal” learning to distance learning. Geographical movement within the country was blocked, most forms of economic activities came to a halt – and with it the practical training in companies in the setting of TVET. Even after some relaxation of the lockdown measures it remained impossible for most apprentices to resume their practical training in companies because it was either forbidden by national or local regulations or by internal company policies.

Most schools did not have any experience in implementing and supporting learning online. In some parts of the country, schools had already piloted pre-Covid-19 online weeks and were thus slightly better prepared than others, but not to the extent demanded by the novel situation. Under the restrictions imposed, the schools, businesses, pedagogical institutes, and ministries struggled with fulfilling their task of equipping young people with competencies needed in the labour market.

### ICT-supported response: Training of staff and provision of hardware

The project “TVET in BiH” supported more than 2'000 teachers, administrators, and directors of 42 schools through the following measures.

- Short-term training of 2 days on the use of MS Teams as a platform for education (school management, administering student and teacher accounts, organising lessons, etc.)
- 5-day training on online pedagogy to increase the quality of digital learning (basics of online pedagogy, planning of a digital lesson, different methods, assessment in an online environment, etc.)



Training of staff on the use of MS365

In addition, partner schools were equipped with 3D-printers to produce face shields for public institutions, such as health centres and police. The printers can be fully integrated into the practical training in schools. An additional budget of about 120.000 Euro was mainly used for ...

- Didactical training (about 40%),
- Training on tools (about 30%),
- Hardware purchases (about 30%).

### Impact and success factors

#### Observed effects

- Increased quality of online teaching in TVET schools: Before the training, some teachers were unable to provide any online education. The training enabled them to support learning online. Teachers with previous digital competencies learned how to implement richer forms of digital teaching. However, an upscaling of this development is still needed.



Learning to use MS365 to teach, learn and communicate

- Improved communication between stakeholders: The teachers, school directors, IT administrators of schools, and representatives from pedagogical institutes, ministries, etc. worked together very well and it could be seen that they were professional crisis managers; the cooperation was deemed much more pragmatic and effective than under 'normal' circumstances.
- Pedagogical institutes developed and strengthened competencies in digital pedagogy. In addition, the staff members were part of the training and acted as multipliers, especially for teacher training, disseminating the competencies to many teacher communities.

#### Innovation

- The entire online teaching process, using new tools, working with e-content, communicating online etc. was new to most teachers, administration staff, and directors. They managed to design and deliver online lessons and to remain in touch with students via online channels.
- Schools and their stakeholders learned how to respond quickly to new needs and changing conditions, using mostly online communication tools.

#### Contributing activities

- The need for training and support was identified and discussed in meetings with the schools.
- Based on the identified local resources and needs of the partners, lacking infrastructure was provided: computers, laptops, Office 365, internet connections, and headphones.
- Manuals on how to use the tools were developed and circulated.
- Exchange and learning were facilitated between MoE, 4 pedagogical institutes and 7 schools from different sectors.

Expertise that was pivotal for the project:

- Digital pedagogy expertise of international experts
- Expertise on software use of national experts
- Expertise on pedagogy, didactics, and adult education of project team members:

#### Challenges and lessons learned

##### Challenges

- ❗ No company access for practical training: How can competencies relevant for the labour market be developed through an online approach and limited involvement of the companies?
- ❗ Cooperation with companies: How can the students be brought back to the companies?
- ❗ Poor infrastructure: Lack of internet access, devices for students and IT equipment for schools.

##### Lessons learned:

- ✅ Frequent contact and exchange with local partners were most important!
- ✅ Learning by doing as this situation has been new for everyone, the project team had to learn while doing. E.g., through online workshops including a big number of stakeholders where complex issues in the context of a TVET reform were discussed.
- ✅ Stay relaxed and flexible!

#### Links and contact

The following links lead you to interesting and valuable resources on ...

- the project: #GIZBiH #officialwebsite #VirtualLibrary #GIZBiH, #officialFBpage #IchooseTVET, #IGpage #official
- MS365 and online school: #MS365 #virtualclassrooms, #onlineschool #MS365, #onlineschool #MS365, #2300teachers #MS365
- Online didactics: #onlineschool #teachers, #virtualclassrooms #distancelearning, #onlinedidactics
- 3D-printers: #faceshields #pandemic, #facemasks #3Dprinters, #Priedor #3Dprinters, #Tešanj #3Dprinters

##### Contact

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Master in European Studies



## VET 5

### Live cooking sessions to better qualify hospitality workers in Cambodia

Using Zoom and Google Classroom supports training, practical learning and assessment of hospitality workers in Cambodia, with the goal to enhance their employability.

### Background, Covid-19 challenge: travel ban and fear of returning to colleges

One of the challenges of the Cambodian labour market is the high number of unskilled and low-skilled workers. The goal of Swisscontact is to improve market entry and enhance qualifications and employability of this target group through upskilling and certification. The idea/concept of the programme is for the training to be carried out and financed independently by the private sector. The training model is termed Hospitality Kampuchea (HoKa).

One of the key target groups are hospitality workers. To date, the programme has made it possible that 900 young men (37%) and women (63%) from disadvantaged settings have acquired and enhanced their professional skills in hospitality. The activities of HoKa are in the implementation phase, replicating of the model has started in additional two provinces.

Before Covid-19 the training had not been supported through ICT. Whereas 80% of the students use smartphones, they had no experience in using ICT for learning – and neither had the trainers.



Cooking class before the pandemic

The government enforced a travel ban. 90% of the hotels

were closed and the hospitality industry collapsed. Schools closed and reopened several times.

When colleges re-opened, only few students returned. Many people feared meeting other people. Face-to-face training was not feasible anymore. The motivation of students to access training in this situation (also online) was rather low.

### ICT-supported response: cooking practice and online learning

The project started to support online learning in two ways:

1. A pilot programme to support cooking practice. 15 students participated in a training for the occupation “cook assistant”. The students had to buy and present their ingredients and preparations, do the cooking in their homes, and present their completed meal in a Zoom session with 2-3 other students and a trainer. The trainer guided the students and assessed their activities. He also demonstrated activities and theory via Zoom.
2. The students were also provided with an online cookbook, and they carried out written assessments on different subjects, using the platform Google Classroom. Oral assessment interviews were conducted with Zoom.

In addition to Zoom and Google Classroom, the trainers used further communication channels that the students had on their smartphones, such as Messenger, Telegram, WhatsApp, or Skype, to coordinate the students.



A learner proudly presents the practical work she has accomplished.

The project did not require additional budget. It could even reduce costs for travel and refreshments. The involved project members invested less than one week for training, testing, and preparing the online environment.

But continuous adjustments were needed based on the experience the team was getting from the implementation of the training (i.e., trial and error with different software).

### Impact and success factors

#### Observed and expected effects

- The learning setting has led to increased communication, participative learning, and a change of the mindset of many students who started to understand learning as a conversational process.
- Using digital channels to support learning during practical phases permitted for more flexibility. New opportunities for learning were created. Students could decide when and where to learn.
- Although the trainer could not test the result by tasting the final dishes, there was a sense that students learned much about cooking through the digital support.



Learners became more active and motivated

#### Innovation

- Learning with technology triggered new learning activities and the development of in-dependent study skills, such as the self-directed search for relevant information.
- The use of Zoom as a synchronous conferencing system was new for both trainers and students.
- While Google Classroom seemed like a practical tool at first, it was not used as learners were struggling with it.
- Kahoot and Mentimeter were used for interaction and engagement during the synchronous learning sessions (quizzes, games, etc.), as well as for the evaluation of the course modules.

#### Contributing activities

- Careful design of a digital learning setting to foster active learning, using open questions and assignments, some with automated scoring, as well as through the diligent preparation of online activities, creating e-mail accounts and configuration of platforms.

- Face-to-face technical support by the project's field team at the learners' homes to set up their computers and teach them how to use the tools.
- Using existing material (digitalizing print material, using existing e-content) and supplementing this material with self-produced e-content, such as videos, led to a rich repository of relevant learning material.

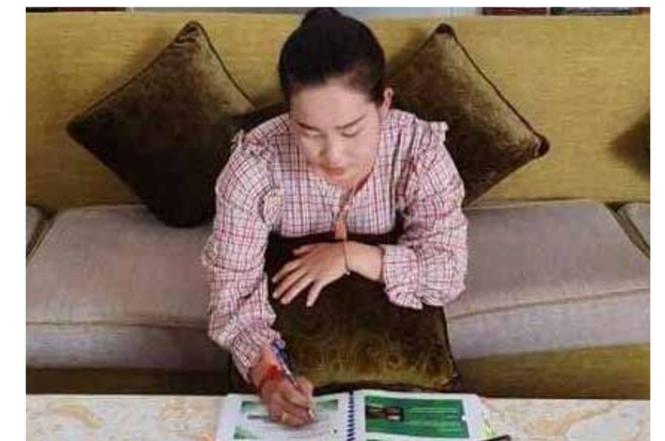
Expertise that was pivotal for the project:

- Sound pedagogical expertise was the basis of the successful delivery of training.
- Subject experts at schools and in industry
- Experienced contractor to facilitate the cooking course
- In-house support from the Monitoring and Results Measurement team on software and tools (Zoom, Google Classroom, Kahoot, Mentimeter, etc.)

### Challenges and lessons learned

#### Challenges

- ❗ Because of varying internet connectivity, online cooking sessions were often interrupted. The trainer had to call learners and arrange other appointments which caused delays.



Most learners do not have computers and follow the sessions via their phones

- ❗ There were also interruptions caused by the fact that learners were distracted in their homes.
- ❗ Some students demonstrated weak ICT skills and needed some support using Zoom. Google Classroom was challenging for the learners to navigate.
- ❗ Some students showed little motivation and it was important to apply different engagement strategies such as explaining the purpose of the online activities, sending repeated reminders, and acknowledging students' contributions.

Interaction and communication via online channels were limited, especially in the context of practical learning. This restriction deserves special attention in design and preparation. Online activities should be combined with face-to-face activities, if possible.

#### Lessons learned

- Blended learning, i.e., education that consists of the integration of face-to-face training and online learning, will be practiced also in the future (e.g., in flipped classroom settings: cover theory online and discuss questions in class); it will even have the potential to save costs.
- Low computer literacy of learners in the project context required intensive (face-to-face) support by project staff.

#### Links and contact

##### Project website:

[www.swisscontact.org/en/projects/sdp](http://www.swisscontact.org/en/projects/sdp)

##### Contact

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 Overall technical support.



## VET 6

### Blended learning in Honduras

Face-to-face and online learning helped vulnerable youth to complete their VET training. This was made possible through teacher training, the provision of psychosocial support and safety protocols that supported students in keeping on learning in a safe environment.



Online class with virtual platform

### Background, Covid-challenges: Curfew, travel restrictions and business restrictions

The main objective of the project “ProJoven” is to ensure the integration of vulnerable youth into the labour market. The project trains some 7’500 at-risk youth and aims at bringing 80% of them into employment. To do so, it supports public and private institutions and the productive sectors in offering training relevant to market demands. Before Covid-19, different activities were offered to instructors, such as workshops with trainers from several centres.

Schools and TVET institutions were closed at the beginning of Covid-19. A strict curfew with severely restricted geographical movement (which was only possible for one day every two weeks) was imposed. Much of the economic activities came to a halt and there was a partial re-opening of the economy only months later, with only 20% of employees who were allowed back in companies. This resulted in many at-risk-learners who could not attend any training on site and had to exclusively rely on virtual tools to access training.

### ICT-supported response: social media, platforms, and psychosocial support

In 2020, ProJoven has trained more than 1’200 young people in a blended learning approach (60% virtual training, 40% in the training venues).

In an initial phase, WhatsApp and Google Classroom were used to provide some 340 learners with digital learning material, such as videos, infographics, ebooks, games and exams, as well as their videos produced during live practices. The instructors facilitated learning activities such as discussions in forums, information search, problem solving, simulation games, and practical work. Moreover, after one month the project managed to incorporate the platform “Capacitate Para El Empleo” of the Carlos Slim Foundation with existing online learning material, assignments, and assessments. Some adaptations were made regarding content and length in different subjects such as sales, cooking, motorcycle mechanics, networks, graphic design.

Moreover, volunteer psychologists counselled young people on issues such as anxiety, depression, grief, or suicidal thoughts through a 24/7 phone hotline.

The implementation required an additional budget of about 160’000 USD and additional expenses for the trainers. The budget included

- training cost,
- subsidy of internet connectivity for students,
- external trainers for capacity development and experts for the digitisation of content.

Extra working time of 20 trainers for the preparation and training (180 hours, 2-3 h/day). These efforts put pressure on the trainers and the team in addition to the general stress caused by the pandemic. Estimated time provided by the volunteer psychologists: 380 hours. Capacity development and experts for the digitisation of content 320 hours. The use of the platform Capacitate Para El Empleo was free.

## Impact and success factors

### Observed and expected effects

- About 1'200 students completed their technical training despite the difficulties.
- 270 VET-instructors and 70 teachers of formal education have acquired basic skills of online training and participative learning.
- The students have learned to set short-, medium- and long-term goals. Many reported having developed more positive aspirations, optimistic perspectives, and a vision to learn.



Student accessing online course

### Contributing activities

- The diligent analysis of the ICT-skills of students and teachers helped to identify skill gaps related to the use of the platforms.
- Investing time in the training of instructors and students in digital tools was very important: in biweekly workshops, teachers learned how to foster participatory learning by applying online teaching methods and using new tools and media, (e.g., videos, games).
- In an induction week (before starting their studies) students learned how to use the platform.
- Systematic evaluation of tools and online platforms under consideration of criteria such as accessibility for youth and user-friendliness).
- Leveraging know-how and resources of partners, e.g., safety protocols of one university for the on-site part of blended learning (sanitisation measures, physical distancing) were further shared with participants and private training centres.



Practical activities in the training centre

- Discussion with the training providers whether, and if so, how the equipment in the on-site workshops can be used by the students. Corporate decision that allowed young people to use the equipment on the day they can move freely (20% of their learning time).
- Development of an online curriculum: Design of the virtual parts of the training (60%) to continue 26 TVET courses in different professions.
- Digitise the existing content. Capitalising on existing manuals, e.g., on the use of simulators.

### Expertise that was pivotal for the project:

- ICT-expertise (selection of a platform, use of ICT tools) by external experts
- Pedagogical expertise in online learning: external experts (the project partners were not specialized in online learning, but learned very quickly)

## Challenges and lessons learned

### Challenges

- ⚙ The digital divide among students as well as among teachers has been a big problem.
- ⚙ The cost of internet connection has been a problem for most students.
- ⚙ Most of the participants did not have the knowledge about how to use ICT devices to study.
- ⚙ Students have missed many lessons because of the lockdown. The project invested two additional weeks to help them catching up.

### Lessons learned

- ✓ Managing change: The adaptation of learning processes and -materials takes a lot of time. Flexibility of the instructors is a key point during the transition. The role of the instructor changes fundamentally in the online learning process. Instructors need continual support after the training to assure a high quality of teaching. Some institutions could not react

quickly, but the project played an important role in developing a crises response within a few weeks.



Psychosocial training for instructors and young participants

- ✓ The innovation process has been an exciting experience, giving students the opportunity to create new things and it has also prompted great teamwork!
- ✓ Keeping up the motivation of students and avoiding dropouts are challenging. Students have experienced high levels of stress and often lacked the motivation to learn. It is important to monitor the activities of students deliberately, as they cannot be observed in the same way as in the classroom. Professional psychosocial help in addition to the support provided by parents and instructors has been very valuable. Trainers and teachers need to be trained and supported in their efforts to provide online student support.
- ✓ Students can be a great inspirational resource on which teachers can draw. The pairing of students with higher and lower levels of knowledge and skills (to leverage peer support) and the organisation of groups of four students has found to aid the learning process. Skilled students were even involved successfully in national forums together with instructors, where they brought in their perspectives and developed innovative ideas.

## Links and contact

The following links lead you to interesting and valuable resources of the project:

### Online tools and content

- CapacitateParaElEmpleo: Platform to support online learning (Spanish/English/Portuguese)
- Platform on biosafety standards
- Platform on psycho-social training
- Tool to support teachers and students in carrying out their classes virtually
- Kahoot! Tool to create contests in the classroom to learn or reinforce learning
- Mentimeter: online tool to ask questions, surveys, and games to an audience
- Google Sites: Tool for creating web pages

### Project websites:

Some examples of courses developed by the instructors (in Spanish, information about goals and programme, restricted access to course material)

- Docente de Cocina
- Ventas y mercadeo
- Soldadura
- Barismo

### Contact

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19 years of experience working with youth in employment, entrepreneurship, and violence prevention issues.



Support for a young entrepreneur

## VET 7

### Coaching female farmers in Kosovo via instant messaging

The instant messenger Viber provided novel opportunities for video-training and coaching of female farmers in Kosovo to increase their business readiness.

### Background and pre-Covid-19 situation

The project "Promoting Private Sector Employment" focuses on market system development. In this context, the project supports empowerment and inclusion of 2'000 women and men in gainful work in two sectors: food and natural ingredients as well as in tourism. The aim is to increase their productivity and efficiency, improving their market offer and competitiveness.

The cultivation and selling of medicinal aromatic plants are one of several areas of potential gainful work. The farmers need to acquire skills on how to cultivate and market medical plants and learn to "think outside the box".

Before Covid-19 restrictions, the project has not deployed ICT for training purposes but has implemented other ICT-tools such as a hotel booking platform or an online directory of women-owned businesses.

When the government ordered a lockdown, no gatherings were allowed, and travelling was restricted. Training for women farmers on cultivating medicinal aromatic plants and bringing them to the market could not be held in person. As they could not attend workshops, they did not receive the support needed and obtain responses to relevant questions. Trade fair participation and other networking and promotion opportunities were also heavily restricted, and these constraints resulted in less income and even in layoffs.

### ICT-supported response: Instant messaging support groups on Viber

The project launched several initiatives in both the tourism and agriculture sector. This case focuses on support and learning activities related to farming.

As most women were very familiar with the instant messaging app Viber, Linda Baleta, a Communications Manager of the project, decided to use this app to sup-

port them online. The project staff in collaboration with partner organization, the Association ORGANIKA, invited 27 women of 5 companies in different regions to join five different Viber groups to receive training and coaching. The women received short video instructions via Viber for 6 weeks (the time originally planned for on-site coaching). (See illustration: The weekly videos with information and tips about the cultivation of lemon balm, cyan, and calendula followed by the trainer's message to the participants.) Some of them used the app to ask questions. Two trainers provided short answers to participants' questions either directly in the Viber groups or they offered phone support for more extensive queries.



The weekly videos with information and tips about the cultivation of lemon balm, cyan, and calendula followed by the trainer's message to the participants

The solution was implemented within the existing budget for communication and training: Video production (10 days), site meetings for coaching (3 days), and Viber coaching for 6 weeks (approx. 2-3 working days)

### Impact and success factors

#### Observed and expected effects

- Training via Viber was deemed to be effective: 27 participants felt very comfortable in learning and communicating via Viber, and they appreciated the opportunity to re-watch the videos ("It's like having the trainer in the pocket"). The Viber groups remained active after the official duration of the training of 6 weeks.



Arbesa Lushtaku, a young agronomist of Agroflorentina, checking the health of cultivated plants. Videos of the Viber-based training helped her to obtain useful information while conducting field inspections.

- The e-content was produced in three steps: 1) involving experts to draft a sophisticated base of training material, 2) simplifying and shortening this content, and 3) designing attractive presentations.
- The production of e-content led to "mobile" training material which supported its application and dissemination in several ways: Family members and neighbours also watched the videos and benefitted from this form of training. Moreover, the training association reused the videos also on their Facebook-site and their website. The online material was printed and used for local training by one woman.
- As a result, the partner association has developed best practices on designing and delivering this type of training. Participating businesses are moving towards this new way of thinking and training.

#### Success factors

- The focus on freely available tools, Viber for communication and Canva for video production, made a quick implementation with a very small budget possible. The usability of the tools was also much appreciated.
- The involvement of training providers who were used to face-to-face training was very important because this experience encouraged them to experiment with conversational learning on Viber.

#### Expertise that was pivotal for the project:

- Two team members of the project contributed with their expertise in agronomy and digital communication.
- Two external trainers contributed subject matter expertise and training expertise. They acquired online coaching experience through learning by doing.

### Challenges and lessons learned

#### Challenges

- ❗ In the development of the videos, the biggest challenge was to adapt the highly technical training information to a level which was appropriate for the target group.
- ❗ The planning and preparation of the online support and training was more time consuming than anticipated.

#### Lessons learned

- ✅ It is vital to understand the needs of the participants to be able to communicate the purpose of the training effectively. In the future, it is planned to have one-on-one conversations with participants at the very beginning of planning.



Havushe Bajrami, owner of MAP processing company 99LULE, delivering training to her network of women farmers.

- ✅ Not all participants were equally participating, and some needed more "nudging" to engage in conversations. A future measure will be the design of a more dynamic facilitation of the Viber groups, like having individual conversations before beginning the training, to explain to the training participants the concept of such online training, its potential, the importance of active participation and what is expected of them.
- ✅ The design options of the free tools for video production were limited. For future productions the purchase of the professional video tool will be considered – as will be the involvement of a videographer. This also depends on the budget available.
- ✅ To constantly improve the activities, evaluation during and after the intervention is needed.
- ✅ Innovation is not about using the newest technology, but about finding the right tools that influence people's learning and lives.

## Links and contact

The following links lead you to interesting and valuable resources of the project:

Online tools and content: [www.canva.com](http://www.canva.com), [www.viber.com](http://www.viber.com), Various free online tools for video conversion, video trimming, picture editing.

Project websites (project descriptions, students projects, webpages of important partners etc.)

- A video on women beneficiaries
- [www.kosovapass.com](http://www.kosovapass.com) or [www.shitjaonline.com](http://www.shitjaonline.com): online sales channels for local producers, platform for selling tour packages online
- [www.ppse-kosovo.org](http://www.ppse-kosovo.org), [www.organika-ks.org](http://www.organika-ks.org)

## Contact

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Expertise: communication, training development and delivery



## VET 8

### Supporting online training and market access in North Macedonia

Launch of an online learning platform for VET teachers and a matchmaking platform for businesses and schools for practical training in North Macedonia.

### Background, Covid-19 challenges: Lock down and limited practical learning

The project Education for Employment in North Macedonia (E4E@mk) contributes towards gainful employment of youth in a socially inclusive and sustainable way.

By creating 55 market-demanded offers about 700 people gained market access, 1'500 people were trained in non-formal vocational skills development, out of whom 64% are youth, 50% are women, and 12.3% are vulnerable groups. Moreover, formal education is supported by strengthening the cooperation between actors from the public and private sector on both policy and implementation level.

Before Covid-19, different ICT-supported activities were launched in the country. Some VET schools piloted content development or produced instructional videos (with Canvas LMS) together with a company. The online platform "EDUINO" had been introduced to pre-school and primary schools and teachers learned to use MS Teams.

The lockdown concerned all schools and paralysed the hospitality sector. In other economic sectors there were time-bound restrictions. Practical learning in formal education was constrained, visits to companies and promotional initiatives and meeting representatives were impossible (production sites which were not open to the public, e.g., machinery sector).

### ICT-supported response: Online platform, training, and matchmaking portal

To support the actors who were directly involved in the implementation of VET provision, and through them, young learners, the following online offers are currently being realised:

- An online platform for professional development (INOVET.EDU.MK) is being developed to serve voca-

tional school staff. Various forms of training will be digitised. On the platform, e-content will be shared, and course materials will be developed; activities and progress of the participants will be tracked, and portfolios of learners will be documented. The national VET centre will support the schools through introducing the platform.

- Video content development: The VET Centre is coordinating the production of videos on learning results as instructional material for students, to be placed on the national platform EDUINO.GOV.MK.
- Training: The VET centre followed a webinar organized by SFIVET on pedagogy of blended learning. A group of teachers were trained through 5 workshop sessions and asynchronous work (a total of 30 training hours) on pedagogy of distant learning. They were trained on how to develop didactic scenarios, integrate digital tools in the teaching and learning process, create online assessments, upload content, or facilitate synchronous training.
- A matchmaking portal for businesses and schools (Economic Chamber owned) is in development. It will provide an overview of verified companies that can host the practical training, a register of VET-providers (sector qualifications), training for mentors offered by the chamber and other events, as well as information on work-based learning/dual education (guidelines, templates, legislation etc.).

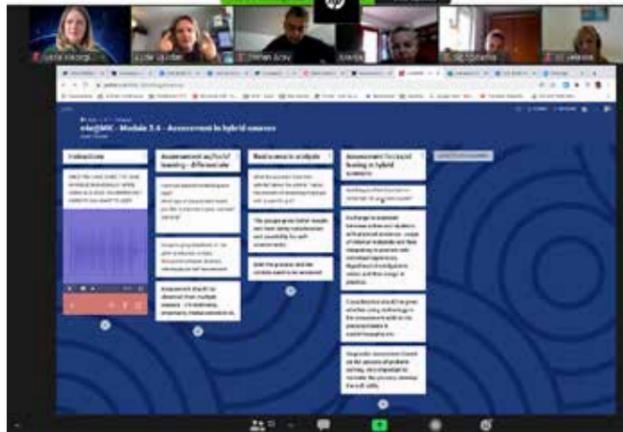
The initiatives were funded with a budget of about 160'000 EUR, used for

- video production (about 40%),
- matchmaking portal (about 25%),
- platform customization and licenses (about 20%), and
- teacher professional development (about 15%)

## Impact and success factors

### Observed and expected effects

- The development of the platforms and the digital learning materials is an investment in the resilience of the entire system. The "way of doing things" in the national VET system is expected to be improved.
- These developments and the use of the platforms change the way of working. The project partners learn how to use digital technology effectively.



Combining different expertise to design online training

Expertise that was pivotal for the project:

- The Economic Chamber of Macedonia contributed expertise in work-based learning.
- Pedagogical expertise of the national VET-centre.
- Technical expertise of two ICT-providers to develop the platform and the matchmaking portal.
- E4E team: Project management, managing interventions, engineering, and facilitation of involved actors.

### Challenges and lessons learned

#### Challenges

- ⚙ The fact that lessons are only held online is the greatest challenge of working under the pandemic situation – especially for practical training.
- ⚙ Not all students have access to digital devices which means that the services introduced are not available for everybody.

#### Lessons learned

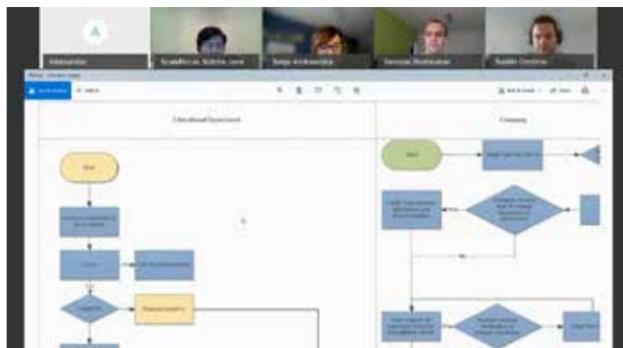
- ✓ There is a necessity of a better understanding of the appropriate use of technology in teaching and learning processes so that it can lead to the desired effect.

#### Contributing activities

- These interventions are in the development phase, so effects are to be seen once they are fully functional. The work done so far was on role clarification with the different actors from VET, companies, and government, as well as requirements engineering for a systematic design of the online platform and the matchmaking portal.



Challenging online communication – partially efficient coordination of multiple stakeholders



Comprehensive requirements engineering to achieve a useful online environment

### Links and contact

The following links lead you to interesting and valuable resources of the project:

#### Online tools and content

- EDUINO: learning platform where the video learning materials for VET will be placed (INOVET.EDU.MK is expected to be accessible by October 2021)
- CANVAS: learning content for students, interaction among the business, the teachers and the students during the teaching and learning process
- Matchmaking portal (expected to be available later in 2021)  
Project website: <https://www.e4e.mk>

#### Contact

Ivana Georgievska, Education for Employment in North Macedonia,  
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Vocational Education and Training Expert, leading the formal education component in the project (including the related digitalization interventions in the same)



# Cases in basic education and lifelong learning

## EDU 1

### Complementing TV with guided self-directed learning in Bhutan

Videos broadcasted via TV are complemented with self-instructional materials for 170'000 learners. 32'000 hard-to-reach children have gained access to learning material via social media and printed brochures. 1'200 teachers are trained to support learners online and onsite.

### Background, Covid-19 challenge: schools closed, meetings delayed

The Project has the goal to enhance inclusion and equity in basic education through targeted solutions for the hard-to-reach, and digitally disadvantaged children and youth in Bhutan. This goal contributed to the overall aim of the Ministry of Education of Bhutan to ensure continued learning during the pandemic triggered school closures. Before Covid-19, the Ministry of Education of Bhutan has developed plans to integrate ICT into education. It has launched initiatives such as setting up computer labs or basic training of ICT focal points in schools.

The schools were all closed across Bhutan beginning March 2020 till December 2020. The government had to immediately resort to ways and means to keep children engaged during the closure of schools. Project activities that required physical meetings to discuss and develop teaching-learning materials, and procurement and delivery of goods to schools and children with disabilities were delayed.

### ICT-supported response: Broadcasting videos, self-directed learning, and coaching

Education in Emergency was activated. A total of 44 video lessons for all subjects based on adapted curriculum were broadcasted via national and private radio stations, social media, and websites. However, 32'000 children did not have access to the videos because of lack of connection, lack of devices, or cost of internet connection. Teachers were not prepared and lacked skills to switch to ICT-supported teaching. Guidance of the children was a challenge for parents in rural communities who cannot read and write.

To enhance inclusion and equity for the hard-to-reach, and digitally disadvantaged children and youth, the project complemented the video lessons with the following solutions:

- Self-instructional materials were produced, consisting of illustrated texts, assignments, and assessments.

They were provided on an online platform and distributed as print version. Some 7'500 students were coached by 1'500 local teachers onsite and via social media.



Students learning with self-instructional materials

- A New Normal Curriculum (NNC) was developed by the Royal Education Council which integrates face-to-face learning and e-learning, emphasizing digital technologies.
- A Learning-Management System (LMS) to support online learning was developed.
- Teachers were trained via Google Meet on online teaching methods and the use of online material on the LMS and coaching of children on-site.



1:1 Coaching © Chimuna Primary School

An overall budget of about CHF 130'000 was used for ...

- the production of self-instructional materials (about 40%),
- production of videos (about 30 %),
- teacher training and coaching (about 20%), and
- curriculum revision (about 10%).

Social media, LMS and curriculum development was financed through Ministries.

## Impact and success factors

### Observed effects

- The Project reached 170'000 students. About 1'200 teachers were trained. 20 Special Education Needs (SEN) schools/institutes benefited from adapted Teaching and Learning Materials, some 50 students with disabilities in critical grades benefited from access to learning equipment (phones/tablets).
- An evaluation by an independent national consultancy led to the following results: 95% of the teachers and 78% of students confirmed in interviews that the availability of learning materials significantly reduced barriers to learning during the pandemic. The self-instructional learning material was the most popular alternative for continued learning. They are together with video lessons an alternative to continuing learning during the pandemic. The printed version was pivotal for students with no or limited access to digital technologies.

### Innovation

- The project has realized for the first time the broad use of self-instructional materials combined with video lessons in Bhutan and teachers have learned to support learners online and to coach them locally.



Project team interacting with teachers and students

### Contributing activities

- A close partnership spearheaded by the MoE helped align efforts of local governments, community leaders, parents, media, private firms, and donors.
- Monitoring visits and online questionnaires helped collecting feedbacks.
- An external evaluation created a valuable baseline and reliable findings.

### Expertise that was pivotal for the project:

- Project lead: expertise to conduct the analysis and to

support coordination

- Partners: pedagogical expertise (instructional material, digital media, online teaching, coaching), IT (LMS, platforms), broadcasting
- National Education Council: Quality assurance of educational material

## Challenges and lessons learned

### Challenges

- ❗ Because a solution had to be found very quickly, there were many unilateral activities. The strong lead of the MoE helped coordinating and focusing these different activities.
- ❗ The quality of quickly produced videos and adapted learning material needed to be improved in the beginning. Involving the National Education Council helped to establish a continuous quality assurance.
- ❗ With schools and the local government, the funding of high internet charges had to be negotiated.
- ❗ Teachers had to be mobilized to reach students that could not access online material.

### Lessons learned:

- ✅ The focus was on rural areas based on the assumption that access to ICT is a rural issue. The team realized that urban poor children and youth lacked access to TV and mobile phones and could not afford internet packages. The need and requirements for parental support were underestimated in the beginning. This must be addressed to achieve effective distance learning.



Project team interacting with students who benefited from the project

- ✅ The assumption that radio would be the most popular learning format among the rural population was not true. SIMs and video learning was preferred and significantly used more.

## Links and contact

### Online tools and content

1. Webpage with online library (<http://www.elibrarybhutan.com/>)
2. National Learning management system (<https://lms.education.gov.bt/>)
3. Guidelines for Curriculum Implementation Plan for Education in Emergency (<http://www.education.gov.bt/index.php/guidelines/>)
4. Website of the Bhutan Ministry of Education (<http://www.education.gov.bt/>)
5. «Education Bhutan» Playlists ([https://www.youtube.com/channel/UCmlHB807dyV-tiyol\\_3lnLow/playlists](https://www.youtube.com/channel/UCmlHB807dyV-tiyol_3lnLow/playlists))

### Contact

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Planning Officer in the Ministry of Education.  
With experience in planning, research,  
and project management.



## EDU 2

### Numérisation dans les zones à forts défis sécuritaires au Burkina Faso

Pour assurer l'accès à des ressources éducatives à 3'600 élèves situés dans des zones à forts défis sécuritaires, les ressources numériques seront fournies via des tablettes, une plateforme et des applications Android. L'apprentissage sera poursuivi dans le cadre des curricula à minima.

### Le défi du Covid-19 : fermeture des structures scolaires, retard des livraisons, coûts élevés

Le Ministère de l'Éducation Nationale, de l'Alphabétisation et de la Promotion des Langues Nationales (MENAPL) a pour but d'assurer la continuité d'une éducation de qualité au profit de 3'600 élèves (dont 1'600 filles) dans les zones à forts défis sécuritaires au Burkina Faso.

Des curricula à minima ont été développés pour soutenir des activités d'apprentissage et d'enseignement au primaire (mathématiques et des Sciences de la Vie et de la Terre) et au post primaire et secondaire (les mathématiques, le français, l'anglais, les SVT, les sciences physiques et la philosophie). Le projet est au niveau de la phase pilote.

La crise sécuritaire aggravée par la pandémie de la Covid-19 au Burkina Faso a occasionné la fermeture de nombreuses structures scolaires. Le MENAPL a développé des initiatives pour assurer la continuité éducative des élèves soutenues par les nouvelles technologies. Les plus grandes restrictions et défis liés à Covid-19 :

- L'insuffisance des contenus numérisés ;
- Les difficultés d'accès au matériel ; absence de connexion internet ;
- Manque de compétences des concepteurs, enseignants, élèves, encadreurs pédagogiques ;
- L'acquisition du matériel retardé ; hausse du coût du matériel.

### Réponse soutenue par les TIC Ressources numérisées sur des tablettes

Les prestations suivantes sont prévues dans le cadre du projet :

- Numérisation des curricula à minima des classes d'examen. Exploitation dans 24 structures éducatives situées dans des zones à forts défis sécuritaires.
- L'approche d'enseignement des curricula à minima numérisés sera capitalisée et les bonnes pratiques sont diffusées pour une mise à l'échelle sur l'ensemble des zones à forts défis sécuritaires.
- Acquisition de 12 « kits des e-classes » (36 tablettes pour le primaire/ 15 ordinateurs portables pour le post-primaire et le secondaire ; tablette et ordinateur portable, vidéo projecteur et logiciel de gestion pour le professeur, point accès WIFI, système solaire).
- Une plateforme e-learning a été réalisée et a été équipé de contenus pédagogiques. Développement d'applications mobiles.
- Des activités comme la formation des acteurs, l'expérimentation des contenus et des approches, la suivi-évaluation et la capitalisation sont prévus.



Des élèves pendant une démonstration des « kits »

#### Budget :

DDC s'engage à soutenir le projet avec environ 230'000 CHF, dont :

- Acquisition des kits (environ 50 %),
- la scénarisation et la numérisation des ressources (25%),
- le suivi, l'évaluation et la capitalisation (environ 15%), et
- l'exploitation des ressources (formation, recyclage, mise à jour de la plateforme) (environ 10%).

l'Etat Burkina s'engage à soutenir le projet avec environ 50'000 CHF.

### Impact et facteurs de réussite

Dans plusieurs ateliers 50 enseignants et encadreurs pédagogiques ont déjà réalisé 435 ressources numérisées dans 15 disciplines dans le cadre des curricula à minima des classes d'examen du primaire, post-primaire et secondaire. Les ressources ont été validées par des inspecteurs. Les enseignants ont développé des compétences de la scénarisation des ressources pédagogiques.

#### Aspects innovants

Accès aux ressources par les élèves et enseignants sans connexion Internet. Utilisation des applications mobiles et d'un système de gestion de e-classe.

#### Activités pertinentes

- La numérisation des curricula est un travail énorme et exigeant pour les enseignants.
- Mise à jour de la plateforme et développement des applications mobiles par des experts techno-pédagogiques et IT.
- Atelier de capitalisation et de diffusion des bonnes pratiques par différents canaux de communication : médias, plateformes, sites web, réseaux sociaux et revues pédagogiques.

Expertise qui a été déterminante pour le projet :

- Expertise des concepteurs : conception de ressources pédagogiques numériques.
- Expertise des enseignants expérimentateurs : Appropriation des curricula de l'éducation en situation d'urgence ; Maîtrise de la gestion de la classe à partir des curricula d'Éducation en Situations d'Urgences (ESU) numérisés ; Maîtrise de l'utilisation pédagogique des TIC pour l'enseignement en situation d'urgence.
- Directeurs, chefs de circonscription, proviseurs des lycées : organisation des formations et de l'expérimentation avec les ressources numériques.

### Défis et enseignements tirés

- La numérisation des curricula : Le nombre de leçons ESU numérisées représente une infime partie de l'ensemble des leçons des curricula concernés. Le délai imparti dans l'implémentation des ressources pédagogiques numériques sur la plateforme. Il faut le renforcement des capacités des concepteurs et prévoir plus de temps pour la formation, l'implémentation et la validation des ressources par des experts.
- Acquisition des Kits e-classe : En l'absence des kits en cours d'acquisition, l'expérimentation ne peut se tenir dans des conditions optimales. Appel à concurrence pour l'acquisition des kits.

- Formation des acteurs : les ressources restantes mises à notre disposition ne pourront pas couvrir les besoins de formation des acteurs de l'expérimentation. Il faudrait planifier une évaluation formative en présentiel.
- L'identification des zones d'expérimentation qui a pris en compte des régions inaccessibles du fait de l'insécurité.

### Liens et contact

#### Outils et contenus en ligne

- Plateforme Faso e-education : [www.fasoeducation.bf](http://www.fasoeducation.bf)
- Ressources de l'Éducation en Situation d'Urgence : [www.esu.fasoeducation.net](http://www.esu.fasoeducation.net)

#### Contact

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## EDU 3

### Applications sur tablettes pour l'éducation non formelle en Mali

1'600 jeunes et adultes dont 74 % de femmes ont utilisé 12 applications interactives dans 3 langues locales pour améliorer leur connaissance en alphabétisation et en formations qualifiantes : calculer les revenus, faire des notes ou appliquer des principes d'agroalimentaire ou de pisciculture.

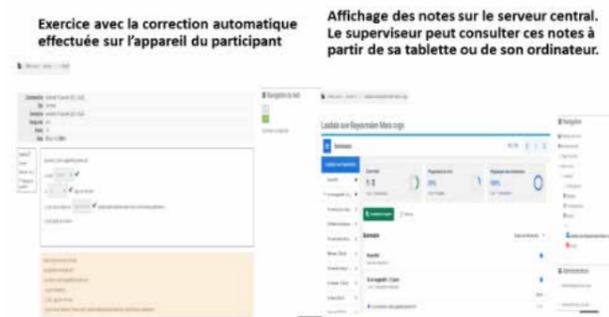
### Contexte, Défi Covid-19 : Fermeture des écoles et couvre-feu

Le Programme d'appui à l'éducation non formelle (PENF) offre des alternatives d'éducation et de formation professionnelle aux enfants et aux adultes sortis du système éducatif national dans un contexte de crise multiforme. Avec la participation des acteurs locaux et des services techniques, le programme permettra à 6'000 enfants de retourner à l'école et à 4'000 jeunes d'apprendre un métier. Avant Covid-19 il n'a pas eu des activités soutenues par les TIC.

En mars 2020 le gouvernement du Mali a décidé la fermeture des écoles, les interdictions de regroupement de plus de cinquante personnes, le couvre-feu avec l'observation des mesures dites barrières. Le plus gros défi était de trouver les voies et moyens afin de poursuivre l'enseignement.

### Réponse soutenue par les TIC : applications sur des tablettes

3 applications pour l'alphabétisation et 9 applications pour des formations qualifiantes dans 3 langues locales (bamanankan, peulh et sonrhai) peuvent être accédées à partir d'un app sur Google Play ou sur un système de gestion de l'apprentissage (Moodle) dans le navigateur. Les métiers couverts par les applications par 56 leçons et 440 heures temps d'apprentissage sont l'embouche, le maraichage, l'agroalimentaire, la pisciculture et l'aviculture. Pour l'alphabétisation, il y a 33 leçons pour 258 heures.



Des exercices permettent aux apprenants de tester leurs connaissances. Les activités des apprenants sont surveillées.

Les participants au projet ont reçu chacun une tablette pour suivre les leçons hors ligne. Ils/elles étaient soutenu/es par un formateur en ligne.

Le budget utilisé pour cette phase pilote est de CHF 450'000, dont :

- Conception des modules et formations des formateurs (60 %);
- Acquisition de 900 tablettes numériques et chargeurs solaires (30 %);
- Création des applications, et hébergement du site (10 %).

### Impact et facteurs de réussite

#### Impact

Les sessions de formation à distance ont concerné 1'662 dont femmes (74%), 56 formateurs et 9 superviseurs. Aussi bien les formations techniques qualifiantes que l'alphabétisation ont atteint les résultats escomptés. 73% des apprenants ont réussi avec succès aux tests d'évaluation finale. Des observations et des témoignages des participants indiquent que ces personnes sont à mesure de lire, d'écrire et de calculer dans une des langues locales (Fulfulde, Songhaï, Bamanankan).



Apprendre avec la tablette pour réussir au test et appliquer ce qu'on a appris.

#### Innovation

- On a réussi de faire appel à des prestataires spécialisés dans les technologies pédagogiques ; mais aussi les groupes cibles car il s'agissait d'un public non alphabétisé.
- Pour la plupart des participants c'était la première fois qu'ils/elles ont utilisé une tablette, même pour apprendre. Déclaration d'une participante : « Le premier jour, quand j'ai reçu la tablette mes mains tremblaient. J'étais très contente, mais j'avais aussi le souci de ne savoir pas comment l'utiliser ... c'est grâce à l'insistance et aux encouragements du formateur si je n'ai pas abandonné le cours ».

#### Activités importantes

- Des modules existants ont été traduits en langue locale et réorganisés en séquences journalières pour faciliter la numérisation suivie de la création des applications numériques.
- Dans 33 sessions de formation réparties en 56 cours d'au minimum 2 heures par jour des villageois ont été formés. Les formations ont pris en compte les besoins exprimés par les apprenants et les potentialités locales.

Expertise qui a été déterminante pour le projet:

- Expertise de l'équipe : analyse, conception, production, mise à l'essai, diffusion, évaluation et révision des contenus, pour adapter à la situation exceptionnelle.
- Expertise de production didactique des formateurs pour la conception pédagogique et des prestataires de services pour la partie TIC en fonction des particularités de l'alphabétisation (graphie de l'écriture) et de la formation qualifiante (démonstrations et exercices pratiques).

### Défis et leçons apprises

- Connexion Internet : absente dans beaucoup de villages, ce qui n'a pas favorisé les exercices interactifs entre apprenants et entre apprenants et formateurs.
- Fausses manipulations : Réinstallation de plusieurs tablettes suite à la suppression des contenus par les apprenants. Cela a nécessité le déplacement vers grandes villes pour accéder à la connexion Internet et télécharger les applications sur les tablettes.
- Pratiques/démonstrations : vidéos volumineuses même compressées. Formations des formateurs pour créer des fichiers moins lourds.

### Links and contact

#### Online tools and content

1. Télécharger le Android app pour accéder les applications avec le smartphone/tablette.
2. Site de web PENF avec les modules.

#### Project Websites

1. PENF site de web

#### Contact

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## EDU 4

### Boosting digital literacy on a national level in Ukraine

A national digital literacy platform with comprehensive tests and 60 “educational series” support 630’000 Ukrainians in improving their digital literacy to improve access to work and society. The materials can be accessed online with own devices or in 4’500 hubs at different institutions. 2’400 digital ambassadors support access and learning.

### Context, Covid-19 challenge: increasing the demand for digital skills, creating new challenges

The Swiss-Ukrainian E-Governance for Accountability and Participation Program (EGAP) developed and launched in partnership with the Ministry of Digital Transformation of Ukraine (MDT) the National Online Digital Literacy Platform (Diia) in early 2020. The purpose of this project is to teach digital competence to 6 million Ukrainians to foster employability, engagement in public affairs, communication with authorities and resilience against misinformation. The project is currently up-scaling. The Partners continually develop new courses for different target groups such as teachers, parents, government employees, people with disabilities, entrepreneurs, soldiers, or health workers. On the one hand, the Covid-19 crisis is raising the demand for improved digital skills among public authorities and citizens. On the other hand, it is creating new challenges, such as protection of children’s safety in the Internet or limited access to online content for people in small towns.

### ICT-supported response: Network of digital ambassadors, hubs, and a national platform

On the Diia platform users find more than 60 “educational series” on topics, such as Basic digital skills, Online safety for kids, Digital skills for teachers, Digital literacy for government employees, E-democracy stars, or Cybersecurity for different target audience and different levels of skills. Each series contain videos presenting a dialogue between an expert and a celebrity explaining the topic with visualisations and links.

- National Digital Literacy Tests allow the general public, teachers, public servants, and medical workers

to evaluate their digital literacy and develop digital skills for their work and life. After passing the test everyone can get a certificate which is considered by private and public sector employers.

- 4’500 digital education hubs in libraries, schools, universities, and administrative service centres provide access to digital education.
- A network of 2’430 “digital ambassadors” support citizens in the learning process to improve their digital literacy.



Citizens can access the educational series and test at one of the 4’500 education hubs in the country.

The overall budget is about CHF 400’000 (including partner contributions), was used ...

- to produce educational series and literacy tests (approx. 65%),
- for platform development and customization (approx. 25%), and
- for communication (social media, posters, and videos (approx. 10%).

The infrastructure of education hubs was provided by local governments in existing establishments. Training of digital literacy trainers and digital ambassadors was provided by MDT. The digital ambassadors are volunteers or employees of public institutions, funded by local governments.

### Impact and success factors

#### Observed effects

Since its launch, the platform’s user statistics show a steady growth with recently overall 630’000 users, participating in the following series (started learning / certified):

- Basic digital skills (87 651 / 69’682)
- Online safety for kids (29’983 / 24’910)
- Digital skills for teachers (44’101 / 40’988)

- Digital literacy for government employees (110’841 / 99’395).



230’000 people have been certified. The digital skills support their access to work and society.

The series targeting public servants have been integrated and are counted as credits in the professional training of public servants. Several online job search tools use the platform’s test certificates to confirm the digital skills of applicants.

#### Innovation

- Utilizing the principles of edutainment and novel gamification elements, the platform tailors its content in an innovative format to specific target groups – an educational soap opera. Instead of levels, there are “seasons”, and instead of lessons, there are educational “episodes”, guided by well-known Ukrainian experts and celebrities.
- The blending of virtual spaces/modules with traditional media (e.g., TV) has expanded the platform’s accessibility hence outreach and impact on large audiences Ukraine-wide.



Celebrities and experts increase the attractiveness of the „episodes“

#### Contributing activities

- Sociological research allowed to identify needs and gaps of different focus groups in areas such as digital skills, fraudulent activity, or abuse.
- The complementary deployment of digital education

ambassadors and hubs proved to be extremely motivational for the groups that would never get these skills alone.

- Optimizing wide public outreach, the project partners were also successful in presenting the courses at “1+1”, one of the most popular Ukrainian TV channels, and streaming service MEGOGO. A public awareness campaign has helped to promote the course.
- Educational series on the Diia platform have been rapidly adapted to the dynamic needs and Covid-19 developments.
- Introducing AI tools is being considered, to make the user experience even more satisfying and the platform more tailored to the user needs.

Expertise that was pivotal for the project:

- Project management, innovation management and expertise in digital transformation of the project team
- Adult education methodologies of the project team and partners
- Design of public awareness campaigns of the project team and partners

### Challenges and lessons learned

#### Challenges

- ⚙️ The project tries to make digital education as accessible and inclusive as possible. It is crucial to leave no one behind and expand the platform’s accessibility hence outreach and impact on large audiences Ukraine wide. Therefore, an innovative form of “educational series” was chosen.
- ⚙️ Also, it was crucial to use different channels like TV and offline hubs to teach senior people who didn’t have basic skills but had smartphones and potentially could use them.
- ⚙️ It is likely that new challenges may arise if the pandemic persists. The Digital Education platform takes these dynamics into account and offers series on related topics.

#### Lessons learned

- ✅ Government support and political will at the national level was very important. The project was incorporated into the Digital State initiative, this gave additional promo opportunities making the project nationwide.

## Links and contact

The following links lead you to interesting and valuable resources:

1. Testing platform (English homepage, Ukrainian test: <https://osvita.diia.gov.ua/en>)
2. Educational series (<https://osvita.diia.gov.ua/en/courses>)
3. EGAP website (<https://egap.in.ua>)

### Contact

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## EDU 5

### Equitable STEAM Education for children of rural areas in Colombia

Developing offline/online strategy to create transmedia resources aimed at promoting 21st century skills and motivation in STEAM (Science, Technology, Engineering, Arts and Mathematics) professional careers in children from rural areas in Colombia.

### Background, Covid-19 challenge: Moving online while taking low connectivity levels into account

The Equitable STEAM Education project included the participation of 902 girls and 873 boys from 14 rural educational institutions, along with their families and 461 teachers from rural provinces. The main objective is to promote STEAM education from an early age in rural areas of the Boyacá department in Colombia, through training for teachers in STEAM teaching methodologies, Science and Technology workshops aimed at children, activities that involve parents, and the development of STEAM pedagogical resources in different thematic lines such as research, 21st century skills and vocational motivation in STEAM professional careers.

Initially, the project consisted of on-site training in STEAM Education in the benefited rural schools. As a consequence of the pandemic schools were closed at the beginning of 2020. In rural zones wherein the project was implemented less than 10% of the rural families had internet access, therefore, teachers could not continue their classes with their students through virtual platforms. Educators used other communication channels to assist their students such as radio, short calls, text messages on WhatsApp and in most cases printed material that parents collected at school biweekly or monthly. The pandemic crisis exacerbated the existing educational and social inequalities wherein teachers had to do an intensive follow-up of the families to prevent school dropout. In the first semester of 2021 the schools reopened following a hybrid model consisted of face-to-face learning and home learning.

The project was redesigned taking into account the low level of connectivity of students in rural areas, for which offline and online strategies such as the development of transmedia resources in Pdf, audio and video games for students, and virtual training for teachers were implemented from the second semester of 2020 until the end of the project in August 2021.

### ICT-supported response: Experimenting at home with the help of multimedia resources

A multifaceted model of remote learning, including the combination of different technologies to enable communication between teachers and students, and distribution channels of the pedagogical material was needed.

- The learners were guided to conduct experiments at home by the means of the STEAM books and the guidance of their teachers. They could access a wide variety of multimedia pedagogical resources such as books, board games, video games, and podcasts when the schools reopened in 2021 or on the Foundation's web platform with free access.
- Teachers participated in virtual trainings on "Google meet" with local authorities in equitable STEAM education, ICT skills and psychosocial skills during and after the crisis.
- Guidance for parents in support and motivation guidelines for their daughters and sons learning at home, taking into account the literacy levels of the home through podcasts addressed to parents and the STEAM books delivered to students which contain family activities.

The budget for this project of about 165,000 CHF is being used for:

- Development of online and offline content for students (30 %)
- Virtual training for teachers (50 %)
- Producing guidelines for parents (10 %)
- Distributing guidelines for students and teachers (10 %)

### Impact and success factors

#### Observed and reported effects:

The benefited educational community was positively impacted in several ways:

- Children: The students were introduced to science and research. With the help of their families, they managed to convert all the spaces of their home such as the kitchens and the garden into laboratories to explore and experiment. Parents reported the formation of skills in their daughters and sons. The children had an increased interest in research, better reading comprehension, and greater verbal fluency. Similarly, the creativity, motor development due to prototyping activities, improvements in verbal communication and greater confidence were observed. Likewise, teachers reported that through research and by putting scientific method into practice, students learn to be disciplined, to carry out programmed tasks, develop routines and perseverance. At

the same time, students were enjoying the learning experience because they had fun.

- Girls: Teachers reported that experiential learning based on the exploration of the environment and experimentation, allowed girls to develop leadership skills. Girls recognize that they can contribute with their ideas. They identify themselves as recognized and accepted leaders. Similarly, parents saw that their daughters as well as their sons have the same ability to perform and choose a STEAM career. Mothers highlighted that the inclusion of female characters pursuing engineering careers, encourage girls to perform these roles as well.



Empowered girl presenting a food dispenser for her dog based on the 21st skills acquired.



STEM Education promoting intergenerational learning

- Teachers: Almost 81% of the teachers surveyed found the implementation of STEAM pedagogy relevant in their institution. They reported the cross-sectional nature of the areas and the improvement in the 21st century skills of the students as the most positive aspects.
- Regional educational authorities: They acknowledge the importance of the STEM Education project as a way to improve the quality of education in the region.

#### Innovation

- The project raised awareness in regional educational authorities about the importance of promoting equitable STEAM education in rural areas and motivating girls to study science and pursuing technology careers as a pathway to contribute to regional development.
- The project also encouraged to the most important university of the region to collaborate with the non-profit foundation to offer certified training to schools' educators in STEAM subjects.
- Rural children and their parents with internet access strengthened their skills in the management of technological tools by recording audios, editing videos and other uses associated with the registration of evidence of learning at home; which before the pandemic did not dominate in the same way.

#### Contributing activities

- Training for teachers in „STEM Education for Sustainable Development“ and „Vocational Guidance in STEM Careers“, and also in specialized topics such as: i) Distance Education in the rural context, ii) Psycho-emotional skills in times of crisis, iii) Strengthening of ICT competencies and iv) Conference with female teachers on their position as a role model for girls and prevention of school dropout.

- Development of pdf, audio and video content, taking into account the connectivity levels and the main dissemination channels used in rural areas such as radio, television, and social networks such as WhatsApp for the distribution of content.
- Strategy for the development of online / offline pedagogical resources according to the situations of connectivity of children in rural areas and their cultural context and digitization of pedagogical resources facilitating their dissemination and access to information.
- The alliance with the Secretariat of Education of region and their support in the different stages of the project.

#### Expertise that was pivotal for the project:

- The transdisciplinary team, professional in diverse areas and with talents to produce pedagogical resources and training of excellent STEAM quality.
- The scientific experience of the co-founders and their knowledge of the territory was key for collaborative and coordinated management of the mitigation actions of the project during the pandemic time.

### Challenges and lessons learned

#### Challenges

- ❗ Covid-19 posed a great challenge for teachers, adjusting their teaching-learning processes, added to the administrative processes and attention to students and families, saturated their response capacity.
- ❗ The preference for printed materials and the technological capabilities of teachers represented a challenge for the use of the project's digital material. Thus, teachers were trained in ICT competencies and the use of the online STEAM resources developed in the project.
- ❗ The lack of connectivity in the rural areas where the project was developed promoted the development of offline resources for the students such as printed material and podcasts to be broadcasted by the community radio of the rural towns participating in the project.

#### Lessons learned

- ✅ The workshops with regional authorities, managers and teachers represent a remarkable strategy to socialise the benefits of the STEAM methodology.
- ✅ The emotional and psychosocial support produced great interest among teachers and strengthened their participation in the project.
- ✅ Printed books facilitated the learning processes in pandemic time and in contexts with connectivity restrictions.
- ✅ Activities and experiments to develop in family,

enabled the dialogue between students with their parents and caregivers, likewise generated significant learning and greater motivation in the learning process.

- Activities designed for children of rural areas without connectivity based on the premise that specialized equipment is not essential to do science or to talk about technology since the world that surrounds them is the laboratory. This approach allowed them to develop skills of the 21st century at home.



Delivery of STEM books to children of rural areas

## Links and contact

### Project website:

<https://girlschangelatinamerica.org/>

### Contact

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## EDU 6

### EDU 6 Numérisation des bibliothèques villageoises en langues nationales au Bénin

La plateforme « XANOO » permet aux néo alphabètes de s'exercer à la lecture. Le contenu est disponible dans six langues nationales du Bénin. Il y a 127 bibliothèques dans 13 communes qui utilisent la plateforme et les bibliothécaires ont été formés pour l'utiliser.

### Défi Covid-19 : Déperdition des apprenantes, diminution de la fréquentation des bibliothèques

A cause des restrictions liés à Covid-19 il y a un taux élevé de déperditions des apprenants-es dans des centres d'alphabétisation et une diminution de la fréquentation des bibliothèques physiques fixes et itinérantes.

Soutenir la continuation des enseignements dans les centres dans le respect des gestes barrières imposés par la pandémie Covid-19 demeure un défi. Avant Covid-19 il n'y a pas eu des activités soutenues par les TIC.

### Réponse soutenue par les TIC : Lire des textes en 6 langues sur une plateforme

Pour cultiver le goût de la lecture et pour éviter le retour à l'analphabétisme, les néo alphabètes (15-40 ans) sont soutenus pour la lecture dans 6 langues nationales (Fongbé, Nago, Batonnu, Dendi, Fulfuldé, Boo) dans 13 communes au Bénin :

Les lecteurs et lectrices peuvent accéder aux documents numériques en langues nationales sur la plateforme XANOO avec les smart phones, ordinateur portatif et ordinateur de table via une connexion internet et à tout endroit (Maison, centres, bibliothèques). Le mot « XANOO » signifie lecture en langue fon (sud du Bénin). Le projet a été initié par les acteurs de la mise en œuvre du « Programme d'Appui à la Gestion Décentralisée de l'Alphabétisation (PAGEDA) » avec l'appui technique et financier de la DDC au Bénin. La plateforme XANOO est accessible à tout endroit pourvu que la connexion internet soit disponible. Les principaux utilisateurs sont les néo alphabètes formés dans les centres. L'initiative de la plateforme numérique facilite l'accès aux documents sans être obligé de se déplacer vers les bibliothèques dans un contexte de Co-vid-19 marqué par les restrictions des déplacements.



Lire en ligne dans les 6 langues nationales du Bénin

Un budget de CHF 50'000 a été utilisé pour ...

- Conception de la plateforme (Environ 60%)
- Licence de la plateforme XANOO (environs 3%)
- Numérisation des documents (environs 15 %)
- Formation des administrateurs (environs 10 %)
- Formation des apprenant-es (environs 13 %)

### Impact et facteurs de réussite

#### Impact

- Environ 400 documents dans 6 langues nationales sont disponibles sur la plateforme
- 127 bibliothécaires dans 13 communes sont formés
- Environ 1'300 néo alphabètes sont initiés à l'accès à la plateforme
- 56'531 personnes ont consulté les documents sur la plateforme

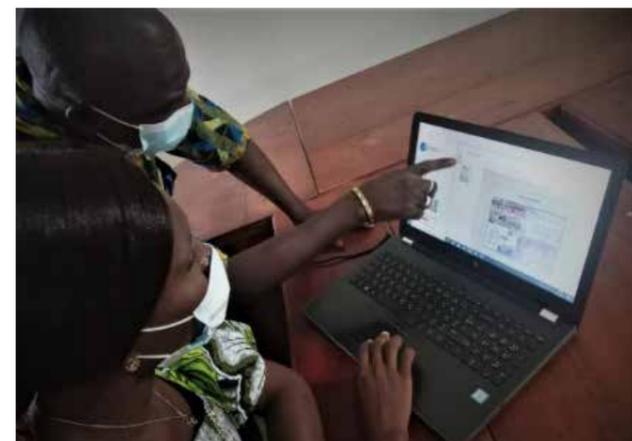
#### Innovation

- L'utilisation du numérique par des néo alphabétisés pour consulter les documents en langue nationale est une nouveauté au Bénin.
- Promouvoir l'auto formation chez les néo alphabètes.

#### Activités importantes

- Implémentation de la plateforme XANOO
- Sélection et numérisation des documents au niveau des bibliothèques fixes
- Formation des administrateurs et bibliothécaires des Communes sur la gestion de la plateforme

- Formation et initiation des néo alphabètes sur l'accès et l'utilisation de la plateforme



Les administrateurs de bibliothèques sont formés dans la gestion de la plateforme

Expertise qui a été déterminante pour le projet :

- Connaissance des outils informatiques
- Connaissance de la conception du site web et facilité d'utilisation
- Connaissance des droit d'auteurs ?

## Défis et leçons apprises

### Défis

- ⚠ Une meilleure appropriation totale de l'outil par les utilisateurs (poursuivre les formations)
- ⚠ Des enjeux liés pérennisation de la plateforme, c'est-à-dire l'alimentation de XANOO en contenus, la production des ouvrages et la maintenance technique (Encourager la production des articles et autres documents en langues par l'organisation des concours et autres initiatives)
- Le portage institutionnel de la plateforme (l'appropriation de l'outil par les acteurs gouvernementaux) (Dialogue politique, échanges, synergie et collaboration)

### Leçons apprises

- ✓ L'enthousiasme des communautés à découvrir et à utiliser la plateforme montre qu'elle répond à un besoin et dénote de sa pertinence.

## Liens et contact

Outils et contenus en ligne  
- XANOO plateforme

### Contact

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## EDU 7

### Comprehensive support of vulnerable children via WhatsApp in Lebanon

Some 400 out-of-school girls and boys, aged 10-14, have had access to non-formal education, learning with a rich mix of multimedia via WhatsApp in classes of 24 students. 180 children had access to remedial support. 1'200 have received health messages. Some 30 teachers have learned to produce online teaching material and to teach online, integrating socio-emotional learning activities.

### Background and Covid-19 challenge: Quality and inclusive remote learning for vulnerable children

With the Covid-19 pandemic, accessing education became difficult for children in Lebanon since schools closed as they – like many children around the world – were forced to transition to online and other forms of distance learning. Children in Lebanon faced particular additional challenges when this shift happened, due to the compounded impacts of the political, economic crises. With insufficient access to inclusive distance learning tools, students have lost learning of almost two academic years. This lost learning time has led to poorer learning outcomes for children in Lebanon and has exposed them to significant protection risks, such as child labour, early marriage, violence, etc.

To respond to Covid-19 related school closures in Lebanon, Save the Children developed the project „Quality and inclusive remote learning for vulnerable children in Lebanon in response to the Covid-19 crisis“. The project brings vulnerable Syrian and Lebanese children back to education in two ways. On the one hand, through ensuring enhanced access to basic education for out-of-school Syrian refugee children. On the other hand, by providing remedial support for vulnerable children to be able to catch up on lost learning from the last school years and help avoid that they drop out of education. The project is implemented in three localities across West and Central Bekaa, as this region hosts the largest number of refugees in Lebanon and houses a high concentration of economically vulnerable Lebanese citizens.

The project started in December 2020 to ensure continuity of learning even during the school closures in Lebanon. The project ended in August 2021, yet, given its overall success, a scale up is starting in October 2021, aiming to address the impact of the multiple crises on children's education in Lebanon. The project had been

developed on the assumption that the school closures would prevail for some time, but we did not expect them to last until the end of the pilot phase. Save the Children's remote learning approach was therefore extended and refined over the course of the project.

### ICT-supported response: Learning support and psychosocial support via WhatsApp

The children participating in the project are either enrolled in remedial support classes or basic literacy and numeracy classes.



A student is clarifying questions about a video via voice notes in WhatsApp

Regardless of what classes the students are enrolled in, the modalities used are the same. Just as in the face-to-face approach, every child is assigned to a virtual classroom of max. 25 students. Each day, teachers develop and share educational videos, worksheets, voice messages and other learning material via WhatsApp with the students. The students are then able to call their teachers, send them pictures or audio messages to ask questions on the lesson received or ask for additional support in completing the tasks assigned. „When the teacher sends the video, I watch it and I take note of what I found difficult. Then I ask my questions to the teacher with a voice note ‚what does this mean‘ and she explains it to me and then I understand the entire lesson“ said a 12 year old girl participating in the remedial support classes. Teachers also track the learning and engagement of children by assigning homework and check the results which children share in the form of voice messages, videos or photos.

Additionally, the direct contact between teachers and the students was used to share information regarding Covid-19. Messages on how to prevent the spread of Covid-19, how to keep safe and child protection concerns were also sent by teachers to caregivers and children via the WhatsApp groups. This was particularly important as the ongoing crisis in Lebanon has placed children

and families under significant stress, with an increase in the cases of children in need of mental health and psychosocial support, as well as child protection services.

Since the project had been planned in a hybrid way, ready to shift between the remote learning modality and face to face teaching whenever needed, budgeting required some flexibility as well. However, since the project relied on an already available and free mobile application, the remote learning modality did not require much additional budget. Main additional costs were related to the mobile recharge cards distributed to teachers and learners' families (CHF 24'000), the remote learning kits for learners (CHF 3'320), as well as teaching materials and Covid 19-protective materials (masks, sanitizers, etc.), which were distributed to teachers and learners (CHF 8'250). Other costs, such as teacher training and coaching, production of learning materials, etc. were already budgeted for, as part of the regular implementation modality.

## Impact and success factors

Through the project, a total of 1'200 out-of-school girls and boys in the community have received health messages on the Covid-19 pandemic, 404 out-of-school girls and boys (aged 10-14) have had access to non-formal education opportunities (BNL classes), and 180 children had access to remedial support. Finally, 29 teachers have increased knowledge of safe programming, gender equity promotion and enhanced skills in active teaching strategies

The project showed the following success factors:

- In terms of technological solutions, it was key that the technology selected would already be accessible for vulnerable children, parents and teachers. WhatsApp was identified as the most preferred, accessible and cost-effective modality during a rapid internal assessment that Save the Children carried out with caregivers in March 2020, and this outcome was later confirmed by the sector-wide inter-agency Learning Readiness Rapid Assessment (April 2020). With access to mobile phones and WhatsApp being widespread, a maximum number of children was reached. However, due to the economic constraints faced by families, it was important that children/caregivers were provided with internet bundles to ensure internet connectivity and that there were clear rules/guidelines shared at the start of the cycles to ensure online safety.
- In terms of addressing needs in an integrated manner, teachers were trained to integrate Socio-Emotional Learning (SEL) activities into the remote learning modality and on how to refer children to psychosocial support or other child protection services when needed. This allowed teachers to enhance children's wellbeing after the Covid-19 related hardships and

develop their socio-emotional skills. A 12-year-old girl enrolled in SC's retention support program said: "The cycle was interactive and beneficial. Besides the interesting learning objectives that I acquired, it gave me the chance to engage in the Social Emotional and Learning activities. I highly encourage all children to get enrolled in the new cycle to enjoy learning and socialize with others."

- In terms of teaching modalities, the remote approach empowered teachers to be creative and come up with their own activities, enhancing ownership of the approach and ensuring tailored support for the children in their classes. Children were motivated to engage in the activities as reported by the mother of a 12-year-old boy enrolled in the BLN program: "I would like to thank the teacher who kept a rigorous follow up on his performance progress throughout the cycle. Her way of teaching was full of positive vibes, motivation, and recurrent praising."

## Challenges and lessons learned

- 🔧 **Challenge:**  
**Remote learning and teaching modalities were new to teachers.**

### Lessons learned:

- ✔ Strong emphasis was put on teachers' continuous professional development. Trainings were provided to teachers to ensure that they were able to remotely implement child-centred strategies, enhance children's critical thinking skills, and create inclusive and protective learning environments.
- ✔ Conforming to the Covid-19 safety measures, teachers recorded their classes from the learning centres. This provided teachers with the opportunity to meet each other, exchange ideas, experiences, and challenges, aiming for performance improvement and seeking more innovative strategies. This played an important role in their wellbeing and motivation and regular interactions were formalized into teaching circles to encourage the exchange of experiences and addressing of common challenges.

- 🔧 **Challenge:**  
**Impact of the crises on teacher's wellbeing**

### Lesson learned:

- ✔ Although the current peer-to-peer and coaching sessions are key for teacher's wellbeing, teachers raised the need for additional support. Further investment in teacher's wellbeing, through mental health and psychosocial support (MHPSS) sessions for example, is needed so that the teachers can better deal with the impact of the different crises affecting the country.
- ✔ In case of remote learning, teachers were using their own devices and phone numbers to contact the stu-

dents. In order to keep teacher's work and private life separate, it would be beneficial to provide teachers with a separate device and phone number for their work.

- 🔧 **Challenge:**  
**Accessibility to stationery and to internet**

### Lesson learned:

- ✔ Each child was provided with a learning kit, including basic stationery, learning aids, etc. Moreover, families were provided with mobile recharge cards, to ensure the engagement of children and caregivers in online activities through their existing mobile phones. Providing learning kits and recharge cards was found to be another crucial lesson learned, as these mitigate the risk of dropouts and ensure that vulnerable children can regularly engage in activities at home.



Each child was provided with a learning kit, including basic stationery, learning aids, etc.

- 🔧 **Challenge:**  
**Availability of a device**

### Lesson learned:

- ✔ Families often had access to only one device, which limited children's access to the lessons in case the parents needed the device for work. The children who missed the classes were given the chance to catch up on activities and learning in the evening. This flexible approach proved fundamental to ensure that children from the most vulnerable households could participate in remote learning.

## Links and contact

### Online tools and content

A video summarizing the achievements and results of the project.

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## EDU 8

### Online and offline courses in digital literacy and numeracy in Kenya

240 young refugees are accessing an online platform and offline e-content on tablets to acquire digital literacy and numeracy skills, as well as technical skills. Mentors are being trained online to learn how to support the learners venturing into business activities.

### Background and Covid challenge: Closure of all institutions

The Skills for Life Project aims to improve vocational skills, soft skills, entrepreneurial skills and financial literacy of 4,600 youth among refugees and their local communities. 3,000 will gain meaningful employment or self-employment and hence contribute to the establishment of 1,300 micro businesses either as individuals or business groups.

In 2018, the project introduced “a-Academy”, a digital learning platform that delivered literacy and numeracy training via laptops alongside the conventional learning group approach.

On the onset of Covid-19, the government introduced a directive on the closure of all learning institutions. This resulted in a standstill in the education sector for a period of 6 months.

The face-to-face approach of the project was no longer a viable solution to continue with training. The project had to cease trainings and the learning group approach had to be reviewed for the project to be able to adapt to the current situation.

### ICT-supported response: supporting interactive online and offline learning & mentoring



Accessing the platform via tablets and learning together.

Since July 2021 240 youth are targeted to access a digital literacy and numeracy course, as well as three technical modules on the platform “a-Academy”. They can access the platform individually online on tablets or smart phones. If there is no internet connection, they can use an offline version on the tablets. An induction training is conducted in a group setting at the start of each training to familiarize the youth on navigating the platform. During the lockdown period, the learners accessed coaching through one to one phone calls.



Financial literacy is a key prerequisite to succeed in vocational training.

- The basic literacy and numeracy course covers four main areas of interest for the learners, namely: Food and Nutrition, Health and Hygiene, Money and Business, and Internet and Devices. Learners are guided through thematically relevant situations in which the learning objectives are presented in direct relation to the users' needs. They can use various interactive options, such as ... . They can test themselves and view their learning progress after each lesson.
- Three technical training modules (plumbing, electrical wiring and bakery) follow an embedded literacy approach. A lesson consists of presentation slides,

short, contextualized stories and introductory videos for more complex topics, followed by evaluation questions that deepen the knowledge learned and check the learning status or progress.

- After completing the online courses, the learners are accompanied by mentors for 12 months as they venture into business.



Technical training in baking and plumbing

The budget for the pilot of about 300'000 CHF is being used for:

- Implementation of three technical modules (about 39 %)
- Upgrading of the digital literacy and numeracy course (about 10%)
- Upgrading interactive features and testing of a-Academy (about 10%)
- Digitalization of content for the technical modules course (about 25%)
- Implementation of a virtual mentorship program (about 16%)

### Impact and success factors

#### Observed and expected effects:

- There was an increased interest among learners on the digital learning approach. The interactive tools, multimedia and practical sessions allowed learners to increase their inquisitive nature.
- The digitalized learning has allowed for reduced learning time, therefore providing an opportunity for increasing the practical sessions for learners.
- Learners can track their progress and retention through the evaluation sessions.
- A trained mentors commented: “I had only heard of virtual learning but had never experienced it. I was excited to learn all-inclusive ways to support my mentees. I now have the skills to adequately advise them and I'm happy to support them through their journeys.”

#### Innovation:

- The use of the a-Academy online and offline learning platform was a new experience for both the trainers and learners.
- Having the content adapted to the local context and the learners needs promoted a high sense of ownership by the learners.
- The Learning Record Store allows for storing progress and learner behaviour data. This data storage system serves as a repository for learning records collected from connected systems where learning activities are conducted.

#### Contributing activities:



Using the tablet to acquire basic skills and test the knowledge

- Analysing the existing curricula and segmenting the content into three learning levels: beginner, medium and expert.
- Digitalization of technical training modules: The digital curriculum development was localised to the context and adapted to the learning conditions of the population. A variety of multimedia elements including audios, videos, animations and pictures make the content meaningful, relatable and engaging. Animations visualise processes and abstract concepts vividly. Many of the images incorporated were specifically designed to complement the diverse activities of everyday living and enhance effective learning.
- Familiarization visit targeting ongoing technical trainings on the respective modules to be digitalized. The visit as well allowed for the identification of data necessary to contextualize the content.
- Validation and feedback sessions with learners and trainers.
- Implementation of a virtual mentorship programme. To support the beneficiaries venturing into business, the project partnered with the Mowgli Mentoring to capacitate 15 mentors (7 refugees, 5 female). From the group, 14 graduated (6 refugees, 5 female) and will continue receiving online support.

Expertise that was pivotal to the project:

- An implementing partner with sound pedagogical expertise.
- In-house staff with knowledge on the use of the a-Academy learning platform, technical and monitoring and results measurement team on content support and beneficiary targeting.
- Consultant on the technical modules content review and development

## Challenges and lessons learned

### Challenges:

- ⚠ Limited access to internet connectivity meant that real-time progress tracking of learners was not possible for those using the offline option. Progress is tracked on a weekly basis through the platform for learners accessing the offline option.
- ⚠ Learners required more time to familiarize themselves with the platform as well as the tablets provided. This resulted in longer period uptake than initially planned. Induction sessions help learners to familiarize with the platform before the digital learning begins.
- ⚠ Availability of enough learning tools for all learners to access in the three training modules concurrently was challenging due to the high number of learners. Sessions are run on alternating schedules which allows for more learners to access the tablets.

### Lessons learnt:

- ✓ Blended approach to learning resulted to better outcomes during learning sessions. This should be a combination of the face-to-face learning and digital approach.
- ✓ Continuous monitoring is crucial. It helps to highlight issues as they arise and mitigate or adapt as need arises.
- ✓ Learners profile targeting i.e learners with low literacy skills required more support in navigating the learning platform.

## Links and contact

### Online courses on the a-Academy platform

- Baking module
- Plumbing module
- Electrical wiring module

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### Project websites

- Swisscontact in Kenya
- Skills for Life project

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### Contact

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