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A Roadmap to ICT-supported modernization of Albanian VET

Një projekt i Agjencisë Zvicerane për Zhvillim dhe Bashkëpunim SDC

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A Roadmap to ICT-supported modernization of Albanian VET

This document intends to provide a basis for an informed decision at a ministerial level on the sustainable exploitation of information and communication technologies (ICT) to strengthen the Albanian VET system and to foster productive and decent work in the coming years.

The ideas and suggestions described in this document can serve as a basis for partners and donors to specify, supplement and adapt the design and organisation of ICT-supported modernization.

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Executive Summary

Strategic priority of digital skills and ICT-supported VET

Several **national and international strategies** emphasize the importance of digital skills, services, and internet access, **to enable** vocational training to meet labour market needs and to foster decent work as well as innovation in industry.

Innovative solutions and severe gaps: rich evidence

In the last two years a boost of **digitalization and innovation** in some 10 VET schools and centres in Albania has gained valuable expertise to implement these strategies and has already contributed to the **modernization of vocational training in Albania** in several ways.

A great variety of **modern e-VET solutions** has been implemented in four different fields:

1. **Blended Learning** to support classroom training and student projects with online activities from different locations, but also enhancing interaction in the classroom with ICT-supported response systems or ICT-supported group work.
2. **Online Learning** on learning platforms with a variety of interactive learning offers to support learning anytime anywhere. As well as synchronous live online presentations and discussion.
3. **E-Practice,** supporting students during practical phases by e-portfolios and online sessions to reflect on their learning and to solve problems. As well as documenting practical experience to create instructional learning material for class and to support students in the promotion.
4. ICT-supported **formative, and summative assessment**, e.g. online final level exam for several directions and schools.

Teachers' and students' digital skills have been enhanced in skills development programmes and in a variety of training and coaching activities in the context of the introduction of these solutions. The mindset of many actors has started to change. **Infrastructure** and the management of ICT-supported training have been improved.

The implementation and evaluation of these solutions has also helped to identify **severe gaps** in the supply of infrastructure (hardware, software, and internet access), teaching skills and teaching material, as well as organisational challenges on different levels.

Vision and Mission: ICT-supported modernization of Albanian VET

The developed solutions and experience have created an opportunity to reinforce a sustainable modernization process to achieve the vision of an **ICT-supported Albanian VET, that enables young Albanians to contribute to the economic performance and societal welfare of the country**.

Albanian VET effectively prepares VET students to achieve this goal **by providing high quality education and training, drawing on ICT-supported, effective pedagogical and organisational approaches** that **prepare students to meet labour market needs**.

Taylor-made support for VET providers to modernize their educational offer

To realise this vision **multifunctional centers (MFC)** [1] will be **motivated and supported in their individual development path** of **ICT-supported modernization** to increase their attractiveness as education provider that leads young Albanians to productive, decent work. They will be incentivised to reinforce their ICT-supported modernization efforts.

Depending on their aims, needs, prerequisites and context, they will be able to select a **taylor-made support** from a **modular offer** in three areas:

1. **Training and Coaching**: A wide range of interactive and practice-related trainings will help teachers, administrative staff, local technical support, CD, CPD, as well as school directors to acquire the needed pedagogical, digital and management skills.
2. **Support to manage change and quality**: MFC will be supported in improving and re-designing their processes, structure and offer in different areas, such as e-content creation, pedagogical and technical support, peer exchange, data management or budgeting.
3. **Provide Infrastructure**: MFC will be incentivised to renew and expand their ICT hardware and connectivity focused on supporting effective learning. They will be provided with a learning platform with a comprehensive collection of e-content and interactive features. As well as with a management information system supporting data management of students, staff and processes.

Illustration: Modular support in "Training&Support", e-VET management, and Provision of infrastructure

All MFCs will be provided with a **platform** with **curriculum-aligned Albanian e-content** to support participatory learning and practice.

The targeted support in these three areas will help MFC improving and enriching their educational offer in the coming 8 years in their offer of effective blended learning, online learning, e-practice and assessment.

This offer will be led and monitored by NAVETQ & NAES. Expertise of **pioneering projects** will be drawn on especially during the first few years in the co-design, co-implementation and quality assurance of support offers. Formative and summative evaluation will create empirical evidence of the Albanian experience to be shared in the international community of ICT-supported VET.

[1] Public and private VET schools and vocational centers

Roadmap to an ICT-supported modern Albanian VET that meets market needs

The process of ICT-supported modernization on a national scale will start with a …

- **Preparation phase** of 1.5 years, with a focused need analysis and a competitive call to identify most attractive and sustainable pioneering solutions as a basis to specifying and preparing the modular offer, developing budgets and securing the needed funding.
- In a **launching phase** all MFC will be informed about existing solutions and the modular support offer. They will be supported in assessing their situation systematically and planning their individual and targeted modernization process. Based on their plan, they will be invited to apply for support in the three areas above. The first few months of the new established support will be thoroughly evaluated and optimized in view of the next phase. At the end of this phase, MFCs will agree with the NAVETQ and NAES on their modernization goals up to 2027.
- In a **first phase of a systematic modernization** process the planned measures will be implemented. A formative and summative **evaluation** will create the basis for a strategic review and optimization in 2027 together with the Ministries and donors.
- In the **second and last phase** of the roadmap the processes in the agencies will be improved, based on the evaluation findings of phase I. Evaluation & monitoring will be integrated in the standard monitoring processes of the agencies.

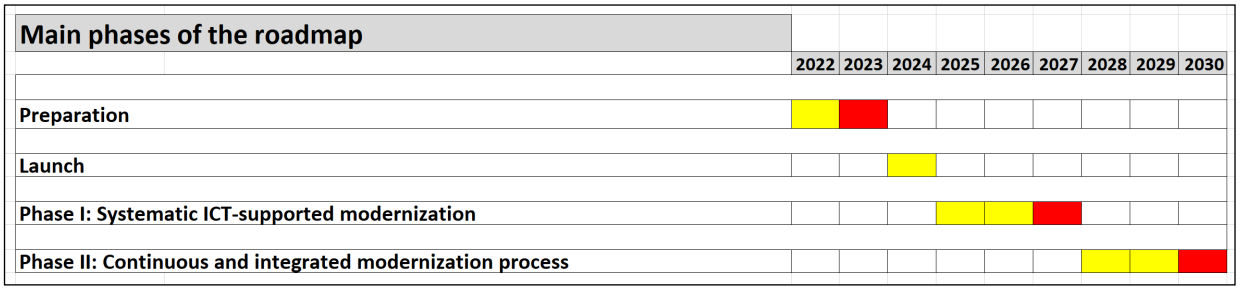

Illustration: Overview of four phases of ICT-supported modernization 2022-2030

Budgeting after strategic decisions in preparations phase

The cost of ICT-supported modernization depends strongly on several aspects that will be specified in the preparation phase, such as the extent of the engagement of the MFC or the strategy of the Ministries, Agencies and schools regarding internet access of schools, hardware and infrastructure models, e-content production, design of national training and support, or features of administrative IT systems. A rough budget will be developed during preparation phase.

Decision and next steps

For the validation and implementation of this roadmap, the following next steps are anticipated by the authors:

- **Informal discussion** with the deputy minister of MoFE. Adaptation and further development.
- **Presentation** of the roadmap to MoFE and MoE, as well as the main donors (GiZ, EU, OeAD, Italian Cooperation, UNICEF). **Collaborative further development** and refinement (e.g. specification of intervention fields and budget) to prepare **launch of the process**.

Content

1 Introduction

The COVID-19 pandemic has led to a boost of **digitalization and innovation** in public VET schools in Albania. Teachers' and students' digital skills have increased, the mindset of many has changed. Gaps of infrastructure, teaching skills and teaching material have become visible.

This boost has created an opportunity to reinforce a sustainable modernization process. A **team** of experts of NAVETQ, NAES, and SDC with its projects S4J and SD4E has developed a roadmap that helps to achieve ICT-supported modernization in the coming years.

The purpose of this proposal is to show:

1. The strategic relevance of digitalization for Albanian VET (chapter 2.1)
2. Which innovation has been achieved, and which gaps need to be tackled (chapters 2.2 and 2.3)
3. How a modernized Albanian VET could look like in 2030 (Vision and scenarios, chapter 3)
4. How this vision and scenarios can be achieved (organisation and roadmap, chapters 4-5)

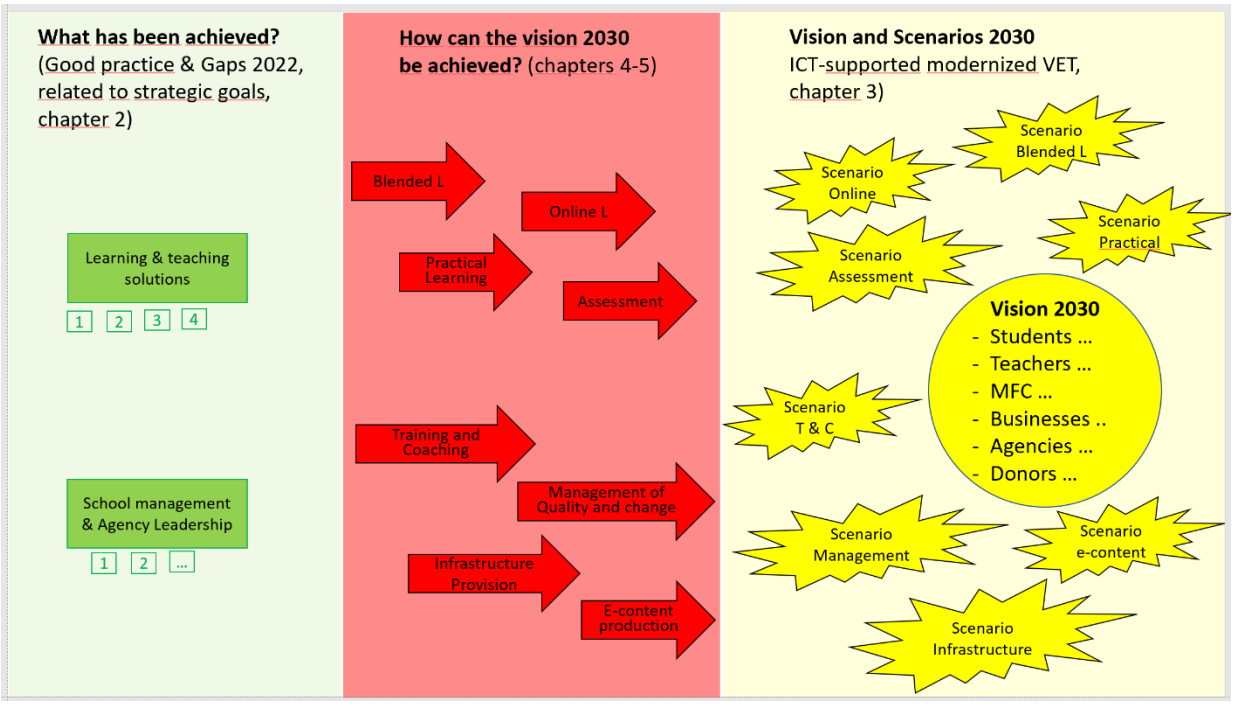

Illustration: Main questions addressed in this document.

2 Analysis

The analysis focuses on three areas:

1. Chapter 2.1 reflects on existing **strategies** to understand which strategic role digitalization plays and in which way digitalization can contribute to strategic goals of MoFE and Moe. Based on this reflection, requirements for future development of ICT-supported VET are developed.
2. Chapter 2.2 analyses **learning solutions** supporting blended learning, online learning, learning in practice and assessment with digital media. It reflects on the impact and challenges of the use of these solutions in the last two years. On this basis the further development, improvement and dissemination of these solutions are being developed.
3. Chapter 2.3 analyses how several areas of **school management** and **governmental leadership and support** have developed to foster digitalization and innovation: Training and support, knowledge management, quality assurance, change management, infrastructure provision and e-content production.

2.1 Strategic relevance of ICT-supported modernization of VET

ICT-supported modernization of Albanian VET relates to several national and international strategies.

Strategies and strategic concepts	**Goals related to ICT-supported modernization**	**Role of ICT-supported modernization of VET**
National Strategy for Education 2021-2026 Key Competences for Lifelong Learning	**Objective A4: Development of digital competence** through better use of information and communication technology for teaching and learning. **Objective C7**. **Advancement of ICT infrastructure and digital services** for public schools. One of the eight key competencies of the new Framework are **digital competences.**	The objectives have partially been achieved in piloting and up-scaling projects, gaps and needs have been roughly identified. ➔ Systematic analysis of gaps and needs, ➔ Present suggestions how to foster digital competence and build a sustainable infrastructure and services.
National Plan for the development of sustainable digital infrastructure broadband 2020-2025	In 2025 **100% of the schools will be connected to internet broadband 1 Gbps**. This national plan goes in along with the European Commission strategy for Development and integration which aims **widespread digitalization and its full capacity use** in Albania. In addition we also have the use of Regional Development Fund to support regional projects in digital infrastructure such as ICT, e-learning, e-government etc.	One of the key gaps identified in piloting and up-scaling projects in the last 6 years. ➔ Present suggestions how to achieve broadband access within the coming years.
National Plan for European Integration 2022-2024	The establishment of **IT and Tourism** Committee (private sector, experts, and line ministries) of Vocational Education, to track issues and opportunities for the future.	➔ Follow step by step the establishment of this committee ➔ Understand how we can reach common interest ➔ share experiences, needs
National Employment and Skills Strategy 2023	To be developed during 2022	This roadmap could be part of the sector strategy 2030.

EU COUNCIL RECOMMENDATION of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness, and resilience[2]	The Recommendation defines key principles for ensuring that vocational education and training is agile in that it adapts swiftly to labour market needs and provides quality learning opportunities for young people and adults alike. Some important aspects (details s. appendix): - focus on the increased **flexibility** of vocational education and training, - reinforced opportunities for **work-based learning** and apprenticeships. - learner centred, - offer access to **face-to-face and digital or blended learning**, flexible and modular pathways - driver for **innovation** and growth and prepares for the digital and green transitions - Institutions have access to state-of-the-art **infrastructure**, have in place digitalisation **strategies** - Teachers, trainers and other staff in vocational education and training undertake initial and continuing **professional development**, career paths become more attractive	
EU Digital Education Plan 2021-2027[3]	Priority 1: Developing a high performing **digital education ecosystem** Priority 2: Enhancing **digital skills and competences** for the digital transformation	➔ Present suggestions how to develop the VET digital ecosystem and digital skills and competences
The 2030 agenda for sustainable development	Several goals relate directly: - SDG 4: Quality Education - SDG 8: Decent Work and economic growth - SDG 9: Industry, Innovation & Infrastructure	The objectives have partially been achieved in piloting and up-scaling projects. Key factors to achieve quality education, decent work and innovation have been identified. Gaps and needs have been roughly identified. ➔ Systematic analysis of gaps and needs, ➔ Present suggestions how to further improve quality of VET offers to foster decent work and an effective workforce.

[2] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020H1202(01)&from=EN, last retrieved 20th March 2022

[3] https://education.ec.europa.eu/focus-topics/digital/education-action-plan, last retrieved 20th March 2022

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The existing strategies address **key aspects of ICT-supported modernization** of Albanian VET:

Pedagogical aspects

- Quality of VET needs to be aspired to
- Decent Work and economic growth

Technological aspects

- ICT infrastructure (hardware, software) needs to be provided
- Internet access needs to be provided

Organizational aspects

- Pedagogical and digital competences of teachers and students need to be improved
- ICT services (information, training, and support) need to be provided
- Close collaboration of private sector, experts and line ministries needs to be established
- Innovation at the interface to industry needs to be fostered

The following chapters 2.2 and 2.3 show that **through pilot projects and up-scaling projects vast experience with the implementation of these aspects has been generated**. Several evaluations allow for a differentiated view of benefits, gaps, and challenges of the implemented solutions.
Based on this analysis future scenarios of ICT-supported modernized VET will be drafted in chapter 3.

2.2 Good practice: e-VET-solutions

Modernization of VET will build on good practice in blended learning and online learning which has proved to be effective. In this chapter existing experience is being analysed and possible future scenarios are being drafted in the areas presented in the following **overview**:

	Asynchronous tools*	**Synchronous tools**
	MësoVET, Akademia, Google Classroom, MS Teams (document management, quizzes, assignments, forum etc.), project management software. Social software (WhatsApp, Viber, Facebook)	e-conference applications (MësoVET Big Blue Button, Zoom, Google meet, Zoom), Social software (WhatsApp, Viber, Facebook) Online apps (Mentimeter, Padlet Board)
Blended Learning	**Combined training** (online/face-to-face) A) Flipped classroom B) Student projects	**ICT-supported classroom** C) Interactive plenary D) Active group learning (stations)
	ICT-supported practice (PL) A) E-Portfolio C) Online promotion D) Practice-based assignments	**ICT-supported practice (PL)** B) Online coaching
	Assessment of quizzes (FA) A) Formative assessment B) Summative assessment	**Assessment of quizzes (FA)** B) Summative assessment
Online Learning	**Asynchronous online Learning** A) Platform-based learning	**Online synchronous Learning** B) Live presentation and discussion
	Assessment of quizzes (FA) A) Formative assessment B) Summative assessment	**Live Assessment? (SA)** B) Summative assessment
	C) **Combined online learning** (platform/live)	

***Tools:** The "Assessment of the Teaching Process 2020-2021", which included more than 60% of the teachers engaged in public vocational education, demonstrated a significant increase of **interest and use of digital platforms by teachers**. 68% of teachers (out of 792 who responded to the related questions) reported using only or combining social communication platforms, while 60.5% of the teachers said that they used only or combined digital platforms, and 16.4% reported that they used the classes broadcast on RTSH TV channel alone or in combination with other platforms.

52% of the teachers used Google Classroom. 34% used MësoVET, 23.3% used Akademi.al, 4.1% used MS Teams and 1.8% Net Akademy. Use of digital platforms seems to have a positive correlation with the quantity and quality of digital teaching materials available on the platform. The more digital teaching materials and tools such as quizzes, tests, or exams a platform has, the more it is used and appreciated. The exposure of students to platforms and available digital learning materials had a positive impact on students: the learning became more interactive and students' engagement in learning activities increased.

2.2.1 Blended learning

Since 2019, more than **9'000 students**, **800 teachers in some 60 institutions** have been engaged with forms of blended learning and online learning. The most applied models of blended learning are **flipped classroom**, **station rotation** and lab rotation. Teachers and students interact with each other both in the virtual learning environment and face to face in the classroom. They use online forums to exchange ideas, participate in polls to share opinions and stimulate discussions, contribute to interactive virtual boards during knowledge transfer (e.g., creation of a mind map, synthetic table, brainstorming etc.), applying game-based learning, assessing through online quizzes.

Examples:

1. **Flipped Classroom**: In "Tregtare", "GjergjCanco", SHTET schools, **22 teachers** frequently apply **flipped classroom** based on MësoVET digital content. The teachers ask students to work beforehand with the digital content (reading, watching videos) at home, at their own pace. Students start to familiarize with and reflect on main concepts and ideas, while highlighting difficulties in understanding the content to discuss them in class. More than 50% of the teachers (150) use **forums** created within the digital learning content as part of the MësoVET platform. The interaction occurs not only between teacher and students, but also among students, who can continue to provide input and interact even after class. During class, the teacher does a recap on main concepts based on a face-to-face discussion. Students engage in the discussion by providing argumentation, concretizing ideas, relating concepts/processes to real-life situation or practice the acquired knowledge through exercises, class assignments or hands-on activities (e.g., in laboratories). Around **1600 students benefit** from the application of flipped classroom model.
2. **Station rotation**: In "GjergjCanco" and "SHTET", **6 teachers** apply station rotation. They determine several types of stations with different learning activities, their modality (online or traditional face-to-face modality, based on their effectiveness) and the timeframe for each activity. **All students (around 350)** pass simultaneously from one station (activity) to another during the time determined by the teacher. During online stations, they conduct research, create presentations, work on collaborative assignments, or take part in quizzes. Traditional face-to-face activities are mostly based on brainstorming sessions, discussions, and feedback on assignments.
3. **Classroom response system**: In most of the schools, more than **75teachers** use **Mentimeter** as a voting tool while organizing in-class competitions based on students' assignment. Students are introduced to each-other's work before participating in the poll and are stimulated by the teacher to provide face-to-face feedback based on preferences. Around **3000 students** benefit from using Mentimeter as an effective tool that encourages participatory learning.
4. **Interactive smartboard**: In "Salih Ceka" (Elbasan), "GjergjCanco" and SHTET schools, **20 teachers** use Smartboard during their classes to increase the students' interaction during knowledge transfer and while collaborating for the completion of a mind map or a research-based assignment. More than **1000 students** benefit from using this online tool during the application of blended learning.

Observed Benefits:

- The **interaction** during teaching and learning is enhanced: students ask and respond to questions in forums, receive online instructions on tasks/assignments, participate in online quizzes as part of self-evaluation process etc.
- Students **perform better as independent learners** in a more flexible environment: digital learning materials in VLP, use of online sources based on teachers' orientation, completion of various assignment uploaded in the platform on their time, place, and pace etc.
- Online activities during the application of blended learning create more opportunities for teachers and students to **include real-life situations** and add work-related context to the learning process.
- Students are sharpening their **life competences** (digital skills, teamwork spirit, creativity, critical thinking, problem solving etc.) while increasing their chances for a more successful integration in the future labour market.

- **Time management** is more efficient: during the application of flipped classroom, the time before class is spent by students working on the digital content (mostly theoretical aspects), while the time in the classroom is mostly dedicated to putting theory into practice, exercising, or discussing.
- **Formative assessment** is better supported by blended learning: students' contribution in forums, conduction of frequent online quizzes, online assignments that are better documented and organized in platforms etc. are all examples of how blended learning enables a more effective formative assessment.

Gaps and Challenges:

- Difficulty in breaking through the traditional models based on the teacher-centred approach.
- Insufficient digital competences of teachers and students to adapt to blended learning.
- Difficulty of teachers in understanding and using the VLP as a learning management system and not only as learning material repository.
- Lack of devices at schools and of students.
- Lack of, or insufficient and expensive internet access of students and some schools
- The planning process for blended learning takes time and requires enhanced creativity.
- Low level of information and awareness on the potential benefits and support that blended learning provides to the learning experience.

Future scenarios

The experience shows clearly that the piloted blended learning approaches have benefitted the quality of VET. Therefore, the extension to further schools can be recommended

A) **Flipped Classroom**: Students **engage in online self-directed learning** individually and in groups. **In class** they discuss their solutions and clarify open questions. Teachers prepare online quizzes and assignments. They analyse the posts of students and prepare meaningful interaction in the classroom.

Online activities of the students:

- Reading, listening, and watching presentations
- Solving standardized quizzes
- Solving assignments and posting their solutions online

In-class activities:

- Explaining their solutions in groups and the plenary.
- Discussing solutions and questions in groups and in the plenary with the teacher.
- Further elaborating complex questions, combining solutions.

B) Student projects: Students tackle tasks with clear milestones over a longer period (e.g. during a semester). They document their deliverables and reflection of the learning process online. The teachers respond to questions during the online phase and meet the students face-to-face in 1-2 milestone meetings for coaching.

C) Interactive plenary in class: Students use classroom response systems to provide answers to questions posed by teachers or quizzes, to activate already acquired information or to measure the level of understanding of the new information. Teachers get instant results which enables them to provide immediate feedback on students' progress. Teachers invite students to use classroom response systems also for polls, encouraging them to share opinions or attitudes or to start a debate.

D) Group work in class: Students conduct group work based on a rotation system combining online and face-to-face modalities. They rely on online research, discuss with each-other, create presentations

using different online tools/applications, present their work based and provide feedback to other groups' products.

Teachers and students engage in frequent discussions. Students provide answers or argumentation to complex topics. They tackle every day or work-based problems, elaborate solutions and make critical analysis to select the most suitable one.

For a **successful implementation** of these four scenarios the following **measures need to be implemented**:

- Training teachers (e.g. use of quizzes and assignments, analysis and exploitation of feedback, online communication and coaching, e-content adaptation, fostering interaction in class etc.)
- Training directors and local administrative and technical staff on managing and endorsing the blended learning approach (organize coaching, technical and pedagogical support etc.)
- Informing, training and motivating students on how to use software. Explaining the benefits, addressing the needs, and enforcing mandatory tasks
- Improve classroom infrastructure with internet access, devices, and classroom response systems.
- Develop BYOD-regulations and support access of students to devices and internet access during online learning.

2.2.2 Online learning

During the pandemic, the schools' closure imposed an abrupt shift from on-site learning to fully online/distance learning, carried out mostly synchronously. In the synchronous online learning approach, two ways/modalities were applied:

1. **In e-conferences** the classes were carried out mostly using **Zoom, Google Meeting and WhatsApp**. These tools were used for connection and direct communication between teacher and students. The e-conferences were based on **PowerPoint presentations and discussions**, sending tests and lectures via photos and/or videos. This immediate solution made possible the continuation of the learning process based on each subject's program and timeframe.
2. To support **active online learning,** in addition to Zoom and Google Meeting, some teachers enabled the engagement and **interaction of students through digital media/apps/platforms**, such as: MësoVET, Padlet, Mentimeter, Kahoot, which can be all used both synchronously and asynchronously to enhance this online experience of knowledge transfer and assessment. Some teachers conducted the online learningthrough**Akademi.al platform** where students could watch subject-related videos and set appointments for online meetings.

Observed benefits:

- The **learning process is not interrupted** under difficult circumstances such as the COVID-19 pandemic: teachers and students continued to conduct learning activities and formative assessment.
- **Online learning enabled real-time communication** between teachers and students, which facilitated the knowledge and skill transferring and the progress monitoring.
- Students' **perception on teaching and learning has changed**: they started to become more conscious on the positive impact of online learning in terms of motivation, engagement, and entertainment.
- Students were **exposed to various online tools and applications** while diversifying their ways of learning and understanding better their preferences.
- Teachers' and students' **digital skills were improved**.

Gaps and challenges:

- The **ICT infrastructure is insufficient** and cannot fully support the online teaching and learning process.
- Difficulty in **accepting** and getting familiarized to **new digitally challenging ways of learning**: agility in online learning takes time to be mastered.
- The lack of face-to-face contact deprived teachers and students from the benefits of a more direct communication and interaction: discussions, opinion and experience sharing, as well as different practical activities are more effective through face-to-face approach.
- The lack of physical presence in school **affected the students' motivation** and ability to focus on the learning process.

Future scenarios

To support learning in case of similar or other crisis, to support adult long life flexible learning and/or to support specific target groups (in specific subjects/areas) in vocational training, the following scenarios could be developed, based on existing experience.

A) MësoVET: National platform with curriculum-based e-content, for interactive learning and monitoring

Students and teachers benefit from a variety of asynchronous and synchronous features, having more control and options in terms of time, learning pace and ways of interacting. Using the WIKI option, students collaborate for the same assignment or project. Each student collaborates also with peers of other courses or schools by giving its contribution in the same evolving content (adding information, updating). Students use forums as a tool for exchanging ideas, sharing experiences, materials, and resources, and for initiating new projects. Students use Blog option to write and publish articles/essays and make them visible to a certain audience (e.g. class peers). Other students comment on the blog's content by providing constructive feedback.

B) MOOCS: Modular online learning on global platforms

Students engage in online learning in form of MOOCs (Massive Open Online Courses) on their time and pace through their mobile or computers. MOOCs are delivered on platforms of renowned global education providers such as EdEx in a well-structured way that corresponds to didactic principles and enables quality self-directed learning (clear instructions, easy-to-navigate, responsive design, easily accessible) based on the audience's profile, needs and preferences. MOOCs are based on innovative digital-oriented pedagogy, relying on connectivism, with standardized components:

- Peer assessment and self-assessment
- motivational introductory videos with clear competence-oriented learning outcomes,
- tailor-made e-content (dynamic presentations, videos)
- standardized interactive learning activities (quizzes, collaborative work for the completion of topic-related vocabulary)
- Interaction with peers in forums and game-based activities
- Standardized and competence-oriented assessment (quizzes, assignment, end of term final exam)
- supplementary online materials and resources,
- Separate motivational social media channel

Teachers contribute to MOOC's content creation. They support students in familiarizing with MOOC-based learning approach, interact with students in forums and facilitate the learning process through consultations as per need.

MOOCs are based on a **mandatory framework** and awarded with **microcredits**. Each MOOC is based whether on peer-feedback assignment, based on specific instructions, or on a final test, automatically graded upon submission (a student should get at least 70% of the score). Each student must conduct at least 80% of MOOC activities. Upon successful completion of these mandatory elements, students receive the MOOC certificate. Modules can be taken also separately or in combination with other modules from different MOOCs for a more flexible learning process and needs.

C) Micro-courses

Students engage in online learning through courses based on a micro-learning approach. Students benefit from **bite-sized learning units**, where each unit corresponds to one single learning outcome. Based on a self-paced approach, students acquire essential skills varying from most technical ones to employability skills. Students engage in various interactive e-content, e.g. short videos (animated videos, interviews, testimonies etc.), dynamic presentations, podcasts, dialogue cards, game-based activities, quizzes etc. Students are highly motivated thanks to the achievement of a specific learning goal in a short time span. Teachers guide students in the selection of micro courses based on their gaps and needs. Different micro courses are related to the same knowledge or skill category. This allows students to focus and upgrade their skills on the topic they are more interested in.

D) Live presentation and discussion (synchronous online learning)

The option of Big Blue Button serves as a medium to connect the teacher to students. The teacher and students take part in discussions, share opinions and experience and work on highlighted gaps. Students benefit from the flexibility of this approach in terms of place while staying active during the learning process. Students can take part simultaneously in the same activity, e.g. a quiz, while the teacher monitors their progress, pace, and results. Teachers interact with students with the help of a virtual whiteboard, facilitating the knowledge transfer. The teacher monitors the overall activity of students in real time and benefits from the automatically generated reports. The digital content could be easily modified by the teacher to better respond to students' needs and progress.

E) Combined online learning (synchronous + asynchronous)

Teachers can give students access to presentation and ask them to solve quizzes or assignments (provided by scenarios A-C). Teachers and company coaches guide individual learners or groups of learners in problem-based learning and explorative learning related to a specific work context (e.g. in subjects such as IT, economics, hospitality). The findings and questions of these learning activities are discussed in an online session (as described under D). Recordings, presentations, and documents that have been elaborated during a synchronous session can be uploaded to MësoVET, so that they are available after the session for repetition and exam preparation.

The implementation of such a scenario requires preparations in several areas:

- Adaptation and enrichment of existing e-content
- Enabling the offer in the market such as training centres who offer this modality of trainings and opportunities to produce and deliver accredited and certified courses
- Training of teachers, with a focus on coaching and management of self-directed learning
- Access to devices for students
- Technical equipment of content producers

2.2.3 e-Practice

ICT-supported practical learning in VET sector is all about making students achieve and sharpen skills in the related industry, while actively engaging in process or procedures in the workplace. During the

COVID-19 pandemic lockdown, the online approach made possible for students to continue their practical learning and for teachers to monitor their performance. Certainly, this approach could not replace the effectiveness of onsite practice, which is at the core of practical learning, but the use of online channels and the conduction of online activities can significantly enhance the students' learning experience while contributing to an effective documentation, exchange and promotion of students' progress and achievements.

Experience:
During lockdown, more than 90% of VET teachers conducted the apprenticeship in an online modality, providing students with the possibility to continue practicing their technical skills in an adapted way.

1. Online asynchronous practical learning

VET teachers supported students' practical learning in an asynchronous way, by sending videos and other materials related to the apprenticeship through **MësoVET**, **WhatsApp** and **Facebook**. Approximately 20% of the teachers engaged around students with projects within the framework of the apprenticeship. All VET students benefited from this approach.

Example:

- Aiming at engaging and motivating students, one of the teachers of Tourism Hospitality study direction at "Kolin Gjoka" school (Lezhë) started the initiative "I cook my grandma's recipe". Around **80 students** made a traditional dish and record the entire process or photograph each step of it. The **videos and photos** were sent on the **WhatsApp** group, where students could view each-others' work. This initiative was the starting point of a competition between students carried out afterwards with the participation of famous regional cooks.
- **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-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

2. Online synchronous practical learning

Examples:

- Some VET teachers applied online synchronous learning to compensate the lack of onsite work-based learning. In the Tourism Hospitality direction of "Tregtare" school in Vlora one teacher used **Zoom** to **demonstrate how to execute recipes**. The students were following instructions while executing the same recipe. Around 60 students benefited from this experience.
- 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.
- Economics teachers gave **assignments** related to current economic problems to 6 groups of students. The solutions were **discussed in an online session**.
-

Observed benefits:

- The apprenticeship was not interrupted: teachers managed to find and implement alternative ways of making students learn by doing.
- The experience served as an example of flexible learning strategy, when for different reasons, the practical learning (temporarily) cannot be conducted in the workplace.

- The teachers had the chance to reflect and get more aware on how to make use of the advantages of online approach (flexibility, better time management) in order to enhance the learning experience: teachers could rely on online channels/platforms during the preparation of apprenticeship (e.g. providing initial instructions, sending of theory-based videos to support practical learning, presenting guidelines etc.).
- Each student was able to interact with all other students, learn from each-other mistakes and provide constructive feedback.
- The documentation of practical learning by recording and sharing videos made teachers reflect on the advantages of applying this approach in terms of experience exchange and feedback provision.

Gaps and challenges:

- Insufficient ICT infrastructure of teachers and students
- Low motivation of students being unable to conduct apprenticeship in companies, guided by a mentor.
- Lack of face-to-face contact between teachers and students.
- Difficulty in perceiving online communication and interaction as an effective way to support practical learning.

Future scenarios

A) E-Portfolio: Students upload texts, photos, and videos of their apprenticeship in MësoVET platform, as part of their e-portfolio to **document and reflect** on their deliverables and learning. Teachers provide **feedback to students** on how to improve their performance as part of their formative assessment. Each student gets to know his/her peers' work while learning from mistakes and replicating successful experiences (e.g. execution of a recipe, a virtual simulation etc.)

B) Online Coaching: Teachers use communication mediums (Big blue button in MësoVET, zoom etc.) to provide coaching to students during their apprenticeship. Teachers assist students online in case they encounter difficulties or have specific questions or communicate with the mentors in companies.

C) Online promotion: During the apprenticeship, students make online posts on different platforms/tools (MësoVET, Padlet or other interactive boards) and in social media by sharing photos or videos of their work in the company. **Students document their practical learning experience**, increase visibility, **connect** to peers, and **promote themselves** to possible future employees. Teachers assist the students to effectively document their practical activity and guide them on safe virtual exposure.

D) Instructional photos and videos: Students engage in asynchronous online learning activities to enhance the practical learning experience. Teachers select **practice-related photos or videos** in online sources, edit them (selecting important parts, adding text or questions etc.) and send them to the students or make their own photos/ videos demonstrating a process, a use of a device etc. Students watch videos at their own pace and, when possible, replicate the process by practicing on their own. Sharing and discussing experiences in class.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Technical and pedagogical training teachers on the use of VLP and adapting the teaching modality to an online environment
- An improved and enriched VLP
- Training directors and local administrative and technical staff on managing and enabling the online learning modality

- Informing and training students on how to use, motivating users, explain benefit, address the needs, enforce mandatory tasks

2.2.4 ICT-supported assessment

For two consecutive years, **1042 students in 5 directions in 6 schools conducted 29 final level exams online**. The exam questions are developed by teachers and uploaded in MësoVET. Normally, this is a long and time-consuming process that requires commitment from many teachers to manually assess the exams and publish the results in due time. By switching to the online modality, the process is automatic, secure, and fast.

Observed Benefits:

- The assessment process is more time-efficient thanks to fast automatic results
- Students can view their results on the course evaluation sheet
- Online assessment increases accessibility: students can conduct the exam in any device available and from everywhere.
- The documentation is more effective and the needs for improvement are easier to be identified and addressed.
- The immediate results and the more effective documentation of the assessing process makes the process more transparent to all actors.

Gaps and Challenge:

- Insufficient devices for summative exams: students should come in rounds.
- Poor internet connection might jeopardize the assessment process.
- Schools must provide the necessary facilities and infrastructure for the process to go smoothly.
- A bank of questions to support assessment needs to be developed and enriched.

Future scenario

A) Online formative assessment is constantly implemented as part of **blended learning modality** through virtual learning platforms. Students take part in frequent online **quizzes** and **tests**. The response is automatic and fast, enabling teachers to easily measure the students 'level of understanding and their progress throughout the academic year. Documentation is more effective and year-by-year comparison makes possible to identify needs for changes/adaptations in the overall learning process. Students use quizzes and other activities (forums, game-based activities, dialogue cards) as a **self-evaluation** and **peer-to-peer assessment** instruments. They understand better their gaps and effectively channel their improvement efforts. Year by year teachers build up on a rich and improved repository of tests, quizzes, and bank of questions.

B) Online summative assessment extends to **all level exams** for the professional theory subjects of VET schools. Teachers benefit from automatic responses of at least a part of the questions (multiple choice questions, true or false etc.). Such exams can be implemented both online and, in the classroom, attended by teachers. Although not all practical modules can be assessed through an online modality when and where feasible this can happen with the involvement of the mentors in company.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Training teachers on developing and uploading quizzes and assignments.
- Training management and technical staff on managing and endorsing the BL approach

- Informing and training students on how to use, motivating users, explain benefit and address the needs
- Improve school infrastructure with internet access and computers.

2.3 Good Practice: Management of e-VET

The sustainable implementation of the above e-VET solutions needs to be carefully managed in close **collaboration of VET providers with national agencies and industry**. In this chapter pilot project management is being analysed. Based on experience in these areas possible future scenarios are being drafted.

The following factors are pivotal for ICT-supported innovation:

1. Teachers, directors, content-developers, IT-supporters etc. need to be **trained, coached, and supported.**
2. **Knowledge** generated during the innovation process needs to be shared and further developed.
3. **Infrastructure** (hardware, software, internet access) needs to be provided and supported.
4. **E-Content** needs to be constantly developed and improved.
5. New organisational, technical, and pedagogical approaches need to be introduced and **managed**.

2.3.1 Training and coaching

Several stakeholders, namely teachers, curriculum- and content developers, administrators, IT-supporters, and directors need to be trained in different areas, such as pedagogical skills, digital skills, and management.

2.3.1.1 Training and coaching on blended learning

24 teachers from two schools ("Gjergj Canco" and SHTET) supported by S4J were trained in an intensive **3-days blended training course** "Blended Learning in Practice». The goal was to equip teachers with necessary set of skills for applying engaging and interactive blended learning. The training was led by a group of four experts, combining pedagogical and digitalization expertise. Self-directed learning of teachers was supported with learning materials and activities on the MësoVET platform beyond training sessions, e.g., assignments on planning blended learning classes, provision of input in the Padlet board.

To put the knowledge into practice **8 teachers** with around **640 students** participated in **20 coaching sessions** during a **one-semester coaching phase benefiting**. This group of teachers planned and implemented different models of blended learning during their classes such as: **flipped classroom, lab rotation, individual rotation, problem-based blended learning**. The application was based on **digital learning materials and activities in MësoVET platform** and on **other online sources and tools** (Google Slides, YouTube, Padlet, websites for supporting online research etc.).

Observed Benefits*:*

- Capacity-building of teachers to implement interactive ways of learning.
- Improvement of teachers' digital competence sand confidence on the benefits of interactive technology-based teaching and learning and on blended learning in particular
- Capacity-building for transferring of skills, experience and lesson learned to peers.
- Engagement of all students in the learning activities (e.g. online quizzes, forums, research etc.).
- Fostered student-teacher and peer-to-peer interaction.
- Increased time-efficiency during classes and students' performance during class discussions, assignments, research etc.

Gaps and challenges:

- Low initial **information** and awareness on the relevance of capacity-building in blended learning.
- Lack of necessary ICT **infrastructure** (devices and internet) in schools for the ongoing application of tech-based learning.
- Lack of **motivation** of a part of teachers during the training course due to the infrastructural challenges of practicing blended learning during their classes.
- Resistant **mindset** regarding the application of new ways of learning where the teacher's position is reconfigured.
- Teachers' and students' insufficient **digital skills**.
- Difficulties in **managing** the students during the fast shift from traditional to online activities and vice-versus.
- Lack of **digital learning materials** to support learning activities during class and beyond.

Future scenario: Training and coaching of teachers on **blended learning**

Teachers engage in trainings on blended learning indifferent modalities, based on onsite tech-based training and asynchronous online modality. Teachers acquire necessary digital skills to engage in **MOOCs** on how to plan, apply and assess students in blended learning. MOOCs is accredited and is offered to all the VET teachers which a rewarded with credits. Teachers invest in their continuous

professional development while applying a lifelong learning approach. Students benefit from a learner-centred, tailor-made and highly engaging approach thanks to the application of blended learning by teachers. Teachers apply different BL models depending on facilities and infrastructure offers in their schools. The BL training is followed by a **cascade modality of training and coaching**. Teachers are offered coaching while applying blended learning in class, particularly when planning to insert new models. Coachers update teachers with recent blended learning ways of application. Teachers exchange experiences, instruments, good examples, and challenges through a virtual community of practice. Blended learning is part of the teachers 'annual **and daily plan**. Each teacher plans classes based on effective combination of online and face-to-face activities.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- NAVETQ support of BL in continued professional development of teachers.
- Support of the schools to implement coaching of young teachers in applying blended learning following the accredited training. CPD plans for teachers to include needs for digital skills and school management to provide the training.
- Develop a training/coaching programme on school management to manage BL.

2.3.1.2 Training on digital content creation

A. Digi-VET training course
During July-December 2021, **49 teachers and experts** benefited from the **online training course "Capacity development initiative on E-learning in TVET"** conducted by Praktika.al in cooperation with ICTILO backstopped by S4J. The training was delivered in 5 modules (divided in 5 weeks overall) based on highly interactive e-content. The learning modality was a combination of a weekly webinar and online presentations, video-based content, forums, assignments created in the platform or uploaded, and final project). The final project was based on a step-by-step approach: each participant had to complete a component of the assignment each week and the progress was followed up and discussed during webinars. A general feedback and evaluation were provided to participants at the end of the training. Following the training, **10 teachers** became part of **coaching phase** creating their own digital content. The coaching program was deployed through **MësoVET platform**. More than **300 students** are benefiting from the created e-content.

B. "Learning media development" training course lead by international experts
In June 2020, the Swiss company Lernetz AG trained **30 teachers** and experts in the production of learner-centred digital materials, based on the learners' profile, and needs. The trained teachers contributed to the development of more than **200 digital learning resources in 8 study directions**. More than **70% of students in the public VET** system benefited from this initiative.

Observed effects:

- The participants can create interactive and engaging learning content, based on given context, curriculum, type of subject and students' profile.
- Teachers have produced learner focused **materials** (online texts, videos? …) as a that fosters higher interactivity and engagement of students for individual learning and in class.
- Teachers were equipped with the necessary skills to **transfer** this digital content approach to their **peers**.
- Enhanced **collaboration and sharing of experiences**, enriched by participants' diverse backgrounds.
-

Gaps and challenges:

- Difficulty in understanding the advantages of digital learning content compared to traditional learning materials, in terms of visualization, interactivity and effectiveness.
- Low motivation of teachers to continuously create and use e-content as part of their teaching strategy.
- Difficulty in conceiving the learning material as interactive e-content with quizzes forums etc., and not as a digital book.
- Participants' insufficient digital competences. Lack of knowledge of e-learning platforms functionalities and digital tools to enrich their digital content.

Future scenario

Continuous onsite/online training and coaching on digital content creation: An increasing number of teachers in all study directions of VET schools are trained on the creation of digital content.

A) **Face-to-face training course combined with online coaching:** Teachers are trained based on a combination of 3-days onsite training followed by online coaching. The onsite training includes traditional activities based on presentations, discussions, feedback on the teachers' progress etc., combined with online hands-on activities to create e-content through different tools (adapting text, editing videos, creating assignments, quizzes, games etc.). Online coaching sessions are held afterwards, during e-content creation based on respective subjects, in small groups or in a 1 to 1 approach.

B) **Online training course combined with online coaching**: Teachers are trained based on an online course (MOOC), including instructional videos, examples, exercises and platform-based assignments. Teachers progress at their own learning pace. As described in the scenario above, online coaching sessions are held after the successful completion of the MOOC, during e-content creation based on respective subjects, in small groups or in a 1 to 1 approach.

In both scenarios, trainings are based on the latest trends of pedagogy and digitization. Teachers master main skills for creating highly engaging tailor-made content. Students benefit from creation of learner-centred digital content that fosters their engagement in the learning process. Teachers shift from their traditional pedagogical mindset and have a new understanding of modernized and digitalized education

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Fostering of teachers' **digital skills** through training, workshops, instructional videos etc.
- Information and rise of **awareness** on what digital content represents and how can it support and upgrade teaching and learning.

2.3.1.3 Training and hands on coaching and mentoring on platforms' use

Starting from a maximum of some 60 active users per month in 2019, MësoVET reached **more than 7000 active users per month** during COVID-19 quarantine and **9000 active users during 2020 and 2021**. More than **300 teachers participated** and benefited from 18 training sessions on 'MësoVET functionalities", for a total of 36 training hours. **150 teachers were coached** in groups (60 hours), and mentored individually, based on an ad-hoc approach (30 hours), onsite and offsite, on 'How to create content in MësoVET'. More than **10 online workshops**, for a total of 20 hours, were delivered on 'How to use MësoVET for distance and blended learning and students monitoring', for a total of**307 teachers benefiting**.

Another series of **8 training webinars**, for a total of 24 hours, has been delivered online for around**800 teachers** to capacitate them on using MësoVET and boosting digital skills for online and blended learning. The webinars were focused on topics such as: developing interactive e-content, infrastructure

needed for distance and blended learning, platforms used for distance and blended learning, assessment of students during online or blended learning.

Observed Benefits:

- Teaching and learning continuation and monitoring during online learning.
- Teachers' digital skills are improved.
- Students interacted and engaged through digital content, quizzes, and forums
- MësoVET platform functionalities enabled the implementation of blended learning in partner providers' schools.

Gaps and challenges:

- Some teachers did not embrace the use of MësoVET right after the coaching, making it difficult for them to retain the information obtained during the sessions.
- Lack of infrastructure created difficulties in using the platform for online learning
- Lack of digital skills

Future scenario

Continuous onsite/online trainings and workshops on platforms' use: Teachers attend onsite and online trainings and workshops on how to use MësoVET as a virtual learning environment. The training sessions and workshops are based on a frequently updated information on how to proficiently use MësoVET functionalities to create and manage courses, how to design annual and daily plans, how to support blended and online learning based on available e-content, how to conduct formative and summative assessment, how monitor students' activity, how generate reports etc. The training sessions and workshops are conducted with small groups of teachers. When necessary, a 1 to 1 approach is also applied. Unrestricted access to digital learning materials of trainings and additional instructional videos enables teacher to refresh their knowledge anytime they need.

Online training and workshops on the use of **social media** (WhatsApp, Viber, Facebook) for promotion and motivation purposes are also conducted.

Training on the effective use of Akademia, Google Classroom and MS Teams is provided, it there is sufficient need.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Equipment of schools with necessary infrastructure to support the use of platforms.
- Boosting of teachers' digital competences.
- Boosting teachers' pedagogical competences.

2.3.1.4 Training and exchange CPD and CD

44 Continuous Professional Development Coordinators (CPD) and **45 Curricula Development Coordinators (CD)** were trained through a blended learning modality on the implementation of their function within the Development Unit. The training program was **led by NAVETQ and facilitated by S4J**. The training materials have been developed as interactive digital content and uploaded in MësoVET, accessible at any time. Following the training program, teachers engaged in exchange visits and experience sharing. **4 exchange visits with 45 CPD coordinators** have been organized to share instruments, tools, and good practices.

Observed Benefits:

- Training program available and accessible to all teachers
- Networking and exchange of coordinators at the national level

- Sharing experiences, documents, and instruments among coordinators
- Sharing challenges in different contexts and finding solutions

Gaps and Challenges:

- High turnover of coordinators in this position
- Making the exchange programmes accessible and continuous
- Institutionalized communities of practice

Future scenario

A) Coaching on Continuous Professional Development and Curricula Development: Coaching on Continuous Professional Development and Curricula Development is extended to all VET schools, including all coordinators. With the support of NAVETQ, coordinators are supported on a regular basis on how to effectively play their role according to their responsibilities, how to implement CPD plans and how to cooperate and support school's actors. Coordinators show a proactive attitude in terms of coordination relationships between school and other stakeholders.

B) Establishment of a highly engaging Community of Practice among CPD and CD coordinators: Teachers communicate and share best practices among each other. Coordinators of Continuous Professional Development and Curricula Development frequently conduct exchange visits. All coordinators benefit from discussing on challenges and solutions, sharing of experience, fine-tuning instruments and approaches etc.

C) Implementation of a cascade training approach on CPD and CD: More experienced coordinators train other coordinators, gradually extending the training in all VET schools. Trainees are updated with recent trends in the areas of Continuous Professional Development and Curriculum Development.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Institutionalization and standardization of the communities of practice to ensure quality, sustainability, and constant improvement in CPD and CD.
- Endorsement of incentives for coordinators of Continuous Professional Development and Curricula Development.
- Rise of awareness on the importance of exchange programs as a valuable way to stimulate experience sharing, collaboration and capacity-building.

2.3.1.5 Leadership training

A school leadership program has been designed for school directors or aspiring school directors of pre-university institutions. It is expected to start in summer 2022.

The leadership training program aims at shaping a principal who holds a wide educational worldview, relevant educational ideas, and the knowledge and skills required for becoming instructional leader. The curriculum is focused on improving leadership capabilities, while striving to enhance personal abilities of future school directors as instructional leaders. The program is based on acquisition of knowledge and skills while empowering personal development of aspiring and current directors. The call for professional education school current and aspiring directors to register is open and the first program is expected to start at the beginning of June 2022.

Expected effects:

- All school directors and vice school directors will profit from a technical and reflective leadership training.
- The gained knowledge and skills will impact the way school is managed through increased awareness as well as technical and leadership skills.
- Current and aspiring school directors will benefit from knowledge sharing and practicing through experiential learning (4 hours/ week) and inquiry-based learning (2 hours/week as a group).

Gaps and challenges

- Overlapping legal framework between law on higher education (related to teachers' qualification), law on pre-university education and law and bylaws on professional education, which might lead to exclusion of some of the teachers and school directors.

Future scenarios

A) Aspiring and current **school directors** sharpen existing skills in leadership and **acquire new management skills**. Topics are constantly improved and enriched based on continuous evaluation of modernization processes, starting with subjects, such as purposeful leadership, quality-oriented goals, people-centred and change-focused management, diversity promotion, balanced control, or delegation. The school and involved actors benefit from a motivating and proactive work culture, proficient management, which leads eventually to an enhanced learning experience and student's overall performance.

B) Training of **school directors** on **blended learning management** as a core learning strategy: School directors are trained in how to efficiently use school environments and devices, how to opt for cost-effective solutions to enable blended learning, how to motivate teachers and students towards the application of this learning modality. School management adapts blended learning to its core teaching and learning modality. School directors facilitate the process through encouraging teachers to attend trainings on blended learning and enabling the necessary infrastructure to support this modality in the classrooms. A cascade training approach and the implementation of exchange programs through visits, webinars etc. will extend the initiative further and more efficiently.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Improved legislation on teachers' and school principals' qualification.
- Integrating findings from evaluation of management issues during the modernization process in the curriculum of the training.

2.3.1.6 Industry Training and Digital Skills

A. Cisco Academy: IT Essentials

Since 2017 S4J has become a CISCO Networking Academy and a certified CISCO NetAcad. Since then, **20 IT teachers have been certified as instructors** and 1164 students have benefited from and certified in different courses available in the NetAcad. The CISCO modules and learning materials are now integrated in the school-based curricula for the IT directions in all S4J partner schools. IT students have benefitted from access to the IT Essential online courses and certification, access to self-paced online courses. Schools benefit from a 75% discount for the CISCO equipped labs.

Observed Benefits:

- Teachers' and students' digital and IT skills were boosted
- Increased enrolments and prestige of the school
- Teachers and students were empowered with career possibilities, and the ability to solve problems locally and globally.

Gaps and Challenges:

- Creating and managing their own courses on the platform.
- Following the students' online learning progress, grading students, and certifying them.

B. Training on Alpha Web software

A) Training on Alpha Web software was organised by private sector representatives for 39 teachers and around 340 students benefited from the use of the program in selected schools. The scope of the training was to improve the knowledge and practical skills of teachers and students with financial programmes used in companies.

Observed Benefits:

- Teachers and students enhanced their practical skills
- Exposure of students to industry standards
- Teachers involved in the private sector due to gained skills

Challenges:

- Lack of financial means to renew the subscription of the program
- Difficult to retain skills due to the expiration of the program license

C. Training course on digital skills with instructors of VPC

On September 2021, **GFA, with the support of ProSEED/GIZ, NAES and NAVETQ**, organized a **6-day training** on "Installation and maintenance of electrical network" course. The aim of the training was to equip participants with necessary digital skills for the **creation of course-based digital content to support blended and online learning.** The training provided the participants with main skills on how to use digital technology; how to identify and use digital sources based on engaging and appealing tools and instruments as animations, videos, games, and quizzes; how to publish the created e-content etc.

D. Other training initiatives

Training: Fundamentals of VET didactics

The curricula of the former 24 days long training "Fundamentals of VET didactics", now a 30-day long training, has recently been revised by NAVETQ in cooperation with GIZ, by integrating elements of soft skills and digital skills for teaching. A total of 65 teachers have been trained with the updated curricula. Furthermore, such training was recently delivered in a VTC and a VET school, thus using already available infrastructure. Other organizations that have facilitated deployment of such training in the previous years are GIZ, Skills for Jobs, Kulturkontakt-OeAD, New Vision, Save the Children

"Start Smart" training package

"Start Smart" training package was developed by GIZ, targeting VTC trainees that had the status of unemployed jobseekers. The initiative aims at training 20 000 unemployed jobseekers, covering 1/3 of this category. The main goal of the initiative is to equip participants with necessary skills for searching for a job. Start Smart methodology is focused on simulations and practical exercises aiming at enhancing job search skills. At the end of the training, an assessment on the trainee's skills related to the integration in the labour market is conducted and results are then forwarded to the Employment Office, which in

turn will orientate jobseekers in their carrier. The training was launched in 2019, and since then, around 16'000 job seekers have received the training.

"Digital Skills" training course

The program of the training course "Digital Skills" was designed during 2020, by a working group with representatives from the company Key Adviser LTD which was contracted by GIZ as part of the Proseed project, as well as with representatives from the NAES. The "Digital Skills" course program is composed of:

- the "Basic Digital Skills", the duration of which is 66 classes, where 1 class lasts 45 minutes.
- the "Average Digital Skills", the duration of which is 72 classes.

This programme was designed based on the EU Digicom Skills requirements, which sets forth 5 sets of competencies to be acquired by the trainees by the end of the course. Both levels deal with the same set of competencies, but at two different levels (basic and intermediate), as follows: online information and data, online communication, and cooperation, creating digital content, online security, problem solving.

Future scenario: Continuous onsite/online industry training

Teachers are regularly engaged with quality onsite and online industry training. Their knowledge and skills are updated based on the **industry's recent achievements**. Schools and industry representatives institutionalize their relationship regarding training. Teachers transfer more effectively the newly acquired set of knowledge and skills to their students based on a more contextualized approach. Students gain knowledge on the latest trends of their future profession, which increases their chances to integrate more quickly and successfully in the labour market.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Financing industry training programs.
- Supporting VET schools in matchmaking and collaboration with industry training providers. Supporting the institutionalization of relationships between schools and industry.

2.3.2 Management of Change and Quality

ICT-supported modernization has a strong effect on the daily work and planning of most actors in the VET system. It is important to inform them about expected changes, to have a continuous communication, to encourage the exchange of how to tackle change and improve quality and to support them in their daily struggles.

2.3.2.1 Information and communication

Several activities and events aiming at sharing and promoting innovative approaches and good practices have been carried out between agencies, donors, and schools' actors. For three consecutive years, a **booklet of best cases** was published based on teachers' and students' positive experience in innovative teaching methods, learning, and putting knowledge into practice. Each publication is followed by an **onsite or online sharing event** where different actors get to know their peers' contribution while exchanging meaningful ideas and lessons learned, discussing on possible replication of practices, and providing suggestions for improvement[4]. These events oftentimes are followed by further **personal and informal exchange of information, practices, or visits**. Communication and exchange are carried out:

- *in a more **institutional way***, through well-planned meetings (usually on Zoom) and official notifications, mostly through e-mails, Facebook posts, as well as through onsite

[4] See also the example of hackathon (1.2.3 e-Practice/ICT-supported practical learning).

gathering, regarding different initiatives and activities as well as to provide support in terms of the organization of the learning process (curriculum interpretation and application, learning modalities, etc.), apprenticeship, teachers' professional development, ICT infrastructure use, administrative documents, etc.

- *in a more **personal way***, phone calls, by e-mail and WhatsApp (1:1 and small groups messaging) as a quick yet effective way to transfer information and documents, set up meetings, exchange opinion and provide support as per need, and through face-to-face communication for a more vivid exchange.

Observed benefits:

- School directors and teachers benefit from more intense and flexible ways of informing and communicating, while enabling the exchange of ideas, practices, solutions etc.
- Horizontal exchange and sharing of information and knowledge
- Enhanced information and communication process has a positive impact on personal, team and management level.
- Directors' and teachers' networking skills are strengthened.

Gaps and challenges:

- A resistance to change showed by school management
- Low engagement of a part of teachers and directors in terms of information and communication activities.

Future scenario: Conferences, knowledge sharing events, documentation of best practices showcases, and similar activities promote the effective exchange both in form of a vertical approach (agencies, donors, VET schools) and a horizontal approach (between schools, between peers). Online communication, as a faster and more flexible way of communication, is used by all actors to share information, promote new initiatives, make announcements etc. as well as to ask for assistance, provide solutions or give feedback. A growing networking, based on effective communication, transferring of valuable information and establishment of solid relationships, is enabled. Different ways of information and communication, both onsite and online, formal as well as personal, empower networking between schools' actors, agencies, and donors.

2.3.2.2 CoP exchange of good practices – Frymëso

Since 2017 "Professional network "AFP Exchange", was established as a Facebook page. The network was composed of teachers of "Business Economics", "Hotel Tourism" and "Thermo-hydraulic installations". This network was established with the support of the European Training Foundation (ETF) and has about 270 active teachers, who exchange experiences, teaching materials, methodologies and concerns related to the learning process in these three professional directions. Since August 2020, Frymëso (Facebook virtual community of teachers) has been serving as a meeting place for around **790 VET teachers** who join any time to share experiences, exchange ideas, and gain new perspectives from each other by reacting to different discussion topics launched by Frymëso team or other teachers, posting articles, questions, or concerns, sharing videos or applied instruments. **Frymëso aims at connecting teachers** in the spirit of learning, knowledge sharing, and collaboration. Since September

2021, Frymëso invites teachers to act as ambassadors[5] of the group for a period of 2-3 months, drafting monthly calendars with various topics of discussions.

Other good examples of Professional Networks of exchange are (i) Continuing Professional Development Coordinators (37 members- established with the assistance of S4J); (ii) Curriculum Development Coordinators (29 members-established with the assistance of S4J). Also, through the digital platform MS teams, a network of teachers has been created who conduct the training course "Basics of didactics in VET" (about 50 teachers-Center for Competitive Skills).

Observed benefits:

- Increased engagement of teachers on exchanging experiences, questions, and concerns.
- Frymëso is used as an Open Educational Resource (OER) where information related to teaching methodologies, online platforms, digital tools, and assessment is presented in various forms.
- Teachers engage with writing up articles, good practices, success stories, events in the group.

Gaps and challenges:

- Teachers resist to engage.
- Teachers hesitate to share content.
- It is difficult to measure the impact, or the usefulness of the content shared.

Future scenario: Communities of Practice (CoP)

Teachers, curriculum coordinators and continuing professional development coordinators exchange best practices instruments, solutions, and challenges in **virtual, hybrid and face to face communities of practice**. Several communities of practice act as a powerful instrument to support networking based on teachers' common interests. CoP members actively engage and communicate with each other on different topics. They share content in the Virtual CoP based on their knowledge, experience, new ideas and initiatives. Articles, methodology-based materials, links, and other posts support the teaching and learning process by serving as supplementary materials for teachers and students to be used during blended and online learning. Thanks to the active participation of teachers, the community of practice appears as a dynamic, attractive, and constantly expanding community where teachers can also obtain education-related information on national and international activities, events, or publications. Teachers create a sense of belonging and contributing to a community as well as a sense of professional identity. They empower their digital identity, benefit from exposure, and enhance their reputation.
Management of communities of practice: The communities of practice are managed by **proactive teachers** that continuously feed and stimulate the community by launching contemporary topics to be discussed, sharing content and post activities. They are in charge of filtering and prioritizing information based on its relevance, compliance with ethical principles. They share findings on a regular basis as a coordinating body.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Endorsement from national agencies
- Financial contributions to support exchange and visits
- Financial contributions and training for moderators. Compensation for active members and content producers

[5] The role of the "ambassador «teacher consists in encouraging other teachers to engage with Frymëso community through posting new topics, moderating discussions, promoting new activities etc. This horizontal approach aims at making a more comfortable and willing atmosphere for teachers to actively participate and contribute in Frymëso.

2.3.2.3 *Digital learning marathon: Supporting peer exchange*

Since the outbreak of the COVID-19 pandemic, 35 VET teachers and instructors have develop digital learning materials (curricula-based) for 86 subjects in directions such as Hospitality and Tourism, Business and Economy, ICT, Electrotechnics benefiting some 8000 students.
During a **week-long marathon**, teachers presented the digital learning materials they developed in **40 minutes-long online sessions in zoom**. All teachers in the system, teaching the respective subjects, were invited to attend and can now make use of the teaching materials.

Observed Benefits:

- Digital materials were discussed, validated, and improved: peer-to-peer exchange during the marathon and beyond helped teachers to make necessary corrections in the learning content, to update it to the domain's latest achievement and to review activities to better correspond to the learning objectives.
- Teachers were informed on the available digital learning materials and showed willingness to use them during their classes.
- Content creators promoted the use of digital learning materials to support blended learning.
- Students benefited from up-to-date high quality digital learning materials.

Gaps and Challenges:

- Low participation of teachers of non-partner providers.
- Requests from teachers to use the digital learning materials as print outs of PDF files: the lack of learning materials even in traditional format "eclipses" the opportunities that digital versions create to support blended learning.

Future scenario

A) Continuous peer-exchange: VET teachers engage in peer-exchange activities. They **produce, adapt, and share digital learning material**, experiment with different learning modalities, share of instruments, tools and resources related to management, documentation, system improvement etc.

Teachers promote their achievements, share new ideas or initiatives, provide feedback and support to their peers and benefit from their peers' experience.

B) Competition-based and motivational activities are conducted to support and encourage the documentation and dissemination of peer-exchange. Teachers compete based on their new ideas, good practices or acquired skills, e.g. application of new learning methods, use of online tools/apps, creation of e-content, activation in CoPs etc. while other teachers benefit from this exchange.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Teachers are willing to share among each other
- Teachers are willing to review and constructively comment on the digital learning materials

2.3.2.4 *Institutional Support*

VET institutions have been supported at different levels. At national level, NAES, assisted by S4J project, has supported the VET institution to establish internal management packages such as: I) Manual of Working Processes; ii) Risk Register; iii) Map of Working Processes; iv) Audit Trail. To improve and promote evidence-based management of the schools, NAES, assisted by S4J, established an administrative data system that enhanced data management and informed decision-making. NAVETQ,

assisted by SD4E project, has supported VE institutions to undertake and manage the self-assessment process leading to accreditation of the VET institutions.

National agencies with technical assistance from donors have supported schools on reconstructing new and existing structures such as development units, school boards and other internal structures. Staff has been trained and regulations and manuals have been prepared to define the role and responsibilities of each unit within the schools.

More at a micro level VET organizational management was supported by different donors. S4J assisted institutions to establish better planning processes such as: strategic plans, schools' mid-term plans, annual plans, as well as teacher's annual plans.

Another line of intervention includes support on financial management of VET providers related to better budgeting of teachers' continuous professional development, students, and teachers' transportation for the practical learning etc. Schools are also supported to better promote their study programs and increase number of students.

Observed benefits:

- Better planning of school activities, increasing their effectiveness and the possibility that schools reach their targets.
- Evidence-based management and decision-making that also increase the transparency and accountability of management.
- Increased number of students and improved curricula and implementation of curricula including innovative ways of teaching and learning.
- All school principals and vice-school principals will profit from a technical and reflective leadership training and a critical mass of qualified staff impacts the way school is managed through increased awareness and technical skills related to school management and leadership.

Gaps and challenges

- Overlapping legal framework between laws on higher education (related to teachers' qualification), law on pre-university education and law and bylaws on professional education.
- Lack of financial autonomy of VET institutions.
- Prolonged decision-making on the amalgamation process of MFC.

Future scenario

Support of VET institutions in different areas:

i. … by **NAES and donors**:
   a. **Support** of **local support** of the MësoVET platform and other platforms such as Google Classroom or CISCO for schools. Local support helps users with issues encountered during the use of the platform and assists teachers in creation of courses, monitoring of students or other processes.
   b. existing and new internal management packages. A standardized system based on **effective data management** supports and facilitates decision-making.

ii. … by **NAVETQ and donors**:
   a. **Support** of **local support** in the design of blended learning, online learning, learning in practice and assessment.
   b. Conduct the **self-evaluation** process based on a collaborative, inclusive and reflective approach.
   c. **Accreditation**, based on educational standards.

iii. … by **NAES, NAVETQ and donors**:
   a. **Integrated support** of teachers in a meaningful and effective design of learning solutions and meaningful use of tools and platforms.
   b. **Design and manage internal structures** (DU, school boards etc.). Equipment of schools with protocols, manuals and guidelines standardizes and optimizes functions of different actors and units while facilitating tasks' fulfilment. Actors are more proficient in meeting their responsibilities.

iv. … **by NAES, MoFE and donors**: **Efficient budgeting**, based on school's strategic priorities and needs (teachers' trainings, purchase of ITC infrastructure, specific products or services related to study directions, promotional and motivational activities etc.). Schools' administrators sharpen their leadership and decision-making skills.

2.3.3 Infrastructure provision, hosting & maintenance

Effective blended learning and online learning requires a reliable provision of software and hardware.

2.3.3.1 Hosting and support of platforms as a teaching and monitoring system: MësoVET as a nation-wide digital platform for VET schools

MësoVET is a Moodle based cost-effective open-source digital platform adapted in the Albanian language. The hosting and support service is covered by Skills4Jobs project, and it is planned to be covered until the end of the project (approx. 2027). The platform has been customized for VET institutions to provide online and blended learning in personalized environments that foster interaction, inquiry, and collaboration. Since 2019, there have been more than **1000 active users per month** benefiting from MësoVET (86% students and 10% teachers). 310 courses (subjects and modules) covering 8 study directions. **50 video tutorials** and **7 instructional courses** assist users in the use of the platform and teachers in the development of digital materials. Online IT support is provided to all users. S4J developed a methodology to assist NAES and VET institutions to **monitoring the teaching process** during distance teaching and learning. Meanwhile the MFE, NAVETQ and NAES all endorsed the use of MësoVET as the digital platform that enabled online learning during lockdown.

Observed Benefits:

- The teaching process continued during the lockdown through MësoVET
- MësoVET grew progressively from 300 users to more than 8000 users in only 2 academic years
- Interactive teaching through technology is enabled, regardless of the modality and place of learning.
- Teachers apply different blended learning models with students combining online and face to face modalities based on the platform's learning content and activities.
- Students have access to rich and up-to-date learning materials anytime and anywhere (online
- and in combination with face-to-face learning)
- Teachers can track students' progress, identify gaps and needs for improvement
- Teachers can monitor students' activity in the platform while gathering information on preferred learning ways.
- Developing digital content became a priority with more teachers being involved in the process and an increased number of students benefiting
- A modular training programme was developed following the series of training webinars

Gaps and challenges:

- Limited digital competencies of teachers.
- Limited internet access.

- Overload of webinars, ZOOM meetings and online events
- Technology fatigue of teachers
- Difficulties in monitoring and managing the online learning process.
- Risk to follow back to traditional ways of learning as soon as the face-to-face modality resumed
- Mobile phones are not allowed to be used in the classroom

Future scenario: MësoVET as **main digital platform, 1st-level support for further platforms**

MësoVET is used as the main national digital platform in VET schools that supports interactive blended learning and online learning. The platform offers multiple offline working options to support learning and monitoring anytime, everywhere, no matter the lack or quality of internet connection. Teachers and students benefit from a rich VLP with the following **features**:

- Support of synchronous direct communication (Big Blue Button).
- Multiple asynchronous engaging features support engaging blended and online learning.
- Digital content for all professional theory subjects is available online.
- Teachers can create courses, upload assignments, creating e-portfolios and manage the whole teaching and learning process.
- A standardized system of monitoring and documentation provides teachers, directors, and school administration with easy-to-interpret data.
- Standardized planning features support teachers create in their annual and daily planning. They can create plans online through unified templates. In long-term, a well-organization of documents that are accessible anytime, allows each teacher to analyse and understand the needs for update and improvement of annual and daily plans. The system helps teachers to compare plans and design possible transversal projects or classes in between different subjects.

Comprehensive training and support for MësoVET is provided by NAVETQ and S4J:

- Teachers and students can use a **rich repository of video-tutorials and instructional courses** on how to use **MësoVET** in technical and pedagogical terms. Teachers are equipped with necessary information on how to create and manage courses, how to monitor students' progress and how to create digital content on MësoVET. Students learn how to use the platform to improve their learning experience during classes and during their independent work.
- Teachers learn how to use MësoVET effectively in different **training offers on blended learning, online learning, and platform use** (see chapter 1.3.1).
- Teachers can clarify technical and pedagogical questions and challenges with **local ICT-advisors**, who are experienced in pedagogical meaningful use of MësoVET. The advisors are supported by a **national 2nd-level MësoVET support** (sophisticated customization etc.).

For further platforms such as **Akademia, MS Teams and Google classroom, 1st-level support** is provided (use of features, basic customization).

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Endorsement of MësoVET from the national agencies as a VLP for VET schools

- Teachers trained and assisted to use and update MësoVET
- Boosting of teacher's digital competences through trainings, workshops, online course, suggested tutorials etc.
- The schools are provided with technical assistance such as an IT specialist to help teachers and students navigate and use MësoVET.
- Investments in ICT infrastructure such as good internet connection, modular classrooms, and computers
- Assignment of an IT expert as MësoVET support person.
- Further customization of MësoVET regarding offline options.
- Further improvements of MësoVET based on learners' feedback
- Mobile phones are allowed in the classroom
- MësoVET develops as mobile app

2.3.3.2 Management Information System

An in-depth review of IT-systems used in the VET system has identified the need to develop a MIS that supports the management of the teaching and training process of VET schools. "SMIP" is focused on pre-university level, but VET providers are also involved in its development and testing.

Interfaces between SMIP and MësoVET need to be established to enable seamless creation of courses, mutations and exchange of student data relevant for both systems.

Future Scenario: SMIP & MësoVET

VET schools are supported in an efficient management of administrative and organizational data on the level of VET providers (didactics, school curricula, assessment, formal documentation, management, etc.), as well as the central / institutional level (management, inspection, recruitment, CPD, professions, qualifications, central curricula, accreditation, etc.). The platform enables differentiated access as well as substantive and methodological flexibility.

2.3.3.3 Hardware and internet access for Blended Learning in classrooms

To implement BL, S4J partner providers were equipped with **good and continued internet access** and laptops or tablets. Initially, ChromeBook® was seen as the most efficient device for blended learning. Keyboard tablets were also piloted at this initial stage. These lightweight devices enabled portability and mobility in the classroom, as well as during professional internships, where tablets were used to document work processes. With the increase of use of equipment and the increasing need to use different programs or materials, laptops with larger screens, an external keyboard and parameters for high performance and more configurations were chosen as more sustainable for blended learning. To avoid situations of lack of battery and security, laptops are arranged in special carts, which serve as charging stations, but also as measures for storing equipment and moving them from one class to another. Experience has shown that the number of equipment a school needs for blended learning depends on several factors, such as the number of teachers engaged in BL, pedagogical approaches of blended learning and online learning, was well as strategic/organizational context of the school. The experience of S4J shows that it is necessary **1 cart with 25 laptops for 150 students**, as well as for all teachers to have a personal laptop. Using tablets has provided flexibility as the devices are lightweight and can be transferred in different classrooms. To support BL, classes are designed with modular desks that allow the arrangement in several forms, depending on the activity provided: group work, individual work, exams, competitions, etc.

Observed Benefits:

- Enhanced students' interest and interactivity during face-to-face learning
- Increased group work and individual work of students
- Increased use of MësoVET and digital learning materials
- Improved digital skills for both teachers and students

Gaps and challenges:

- Lack of IT support in schools to enable a sustainable implementation of technology-based learning.
- Endorsement of Virtual learning platform
- Enabling IT Infrastructure (broadband internet provision) within the schools to enable blended and online learning
- Providing IT equipment and for teachers and classrooms like laptops, computers tablets, cameras, smart boards, software, etc.
- The logistics of equipment (movement of students and teachers in different spaces, organisation of the use of computer rooms), maintenance and support ensuring continuous use.

Future scenario: Equipping schools with hardware, software and internet access

To support students in different online learning activities, classrooms are equipped with modular desks that could be reconfigured based on the learning activity.

Depending on their approach, VET schools have the option of setting up **dedicated blended learning classrooms** with comprehensive equipment and modular desks or **equipping all the classrooms** with a simple standard equipment. Components of such an equipment: monitor/projector, smart boards, and classroom response systems, as well as devices such as desktop computers, laptops, tablets, or smart phones with different "student:device" ratio, e.g., 6:1, 4:1 or 1:1).

A stable **internet connection** is enabling downloading/uploading of materials, using different programs/applications, watching large-sized videos and the use of blended learning classroom and devices for final or level exams.

For a **successful implementation** of this scenario, the following **measures need to be implemented**:

- Assignment of an IT expert/specialist in each school to provide technical support and to assist teachers during for the implementation of blended learning.
- Investments in schools' physical infrastructure (modular desks, projectors, monitors, smart boards, and other supporting devices)
- Investments in ICT infrastructure (provision of broadband internet, computers/laptops/tablets, classroom response systems etc.)
- Mobile phones to be allowed in the classroom to be used for learning purposes.

2.3.4 E-content production

The process of developing learning materials is based on a validated protocol and methodology proposed by Lernetz (Swiss company specializing in the development of interactive didactic materials) and has been adapted and contextualised for VET teachers. The process involves teachers and experts of different areas, pedagogical experts, and digitalization experts.

Currently, **310 e-content courses** are available on MësoVET platform, out of which:

- **175 subjects and modules with interactive content** in **8 study directions,** covering about **5923 teaching hours,** created with the support of Skills4Jobs project, including:
    - 142 professional subjects.
    - 33 general subjects.
    - 39 training and exam courses.
    - 96 subjects as digital books, created with the support of NAVETQ.

From the interactive digital materials benefits a potential of **72% of students** at system level. The content is accessible from any device and is free of charge. Students learn through interactive lessons, games, forums, and exercises. Besides teachers at VET schools, other external experts contributed to the digital learning content production.

Observed Benefits:

- More teachers in the system are using digital content for interactive teaching.
- The quality of digital content is being improved as goes through peer review, validation, and ongoing update.
- Teachers share among each other materials and experience.
- Students interact with the digital content, and they are more engaged.
- Digital learning materials are supporting a constructivist learning approach, where the students are at the centre of the learning process and takes active part in constructing knowledge and skills.

Gaps and challenges:

- Lack of digital skills of teachers and students (s. Training & Support)
- Teachers are more inclined to use hardcopy materials than digital ones.
- Teachers are more involved with the development process of e-content and less with the digitalization process[6].

Future scenario

A) Enhanced production of e-content: Following the capacity-building during training course on digital content creation, teachers are engaging with e-content production. Teachers produce digital learning materials, based on a validated protocol that are pedagogically effective and enable an engaging and interactive learning approach.

B) Continuous customization of e-content: Teachers from different schools teaching the same subject collaborate to improve and update e-content constantly, based on students' progress (e.g. materials of the same subject are adapted to respond to needs and gaps of students of different classes), domains' latest achievements, and changes in the curriculum framework.

For a **successful implementation** of these scenarios, the following **measures need to be implemented**:

- Further development and adaptation of a protocol for ensuring quality and constant improvement of digital learning materials.
- Endorsement of the protocol form NAVETQ
- Training of teachers on digital content creation based on the endorsed protocol.
- On-time information on curriculum changes.

[6]To address the difficulties met by a part of teachers to create digital content, the work was carried out in two phases: teachers were involved with the initial creation of content, based on traditional text and explanation of activities to be conducted; a digitizing team worked closely with teachers to create the digital version of the content. This led to a fragmented perception of teachers on the creation of the digital learning materials.

3 Vision and future Scenarios of ICT-supported modernized VET

The analysis in chapter 1 shows that the experience and solutions developed in the last few years have created a vast potential to further modernize Albanian VET in the coming years.

Building on these achievements, in this chapter a vision for a modernized VET is being formulated. Scenarios describe how VET schools can fulfil this vision in the next few years.

3.1 Vision

With this roadmap we intend to show how the following vision of ICT-supported modernization of Albanian VET can be achieved until 2030:

Young Albanians contribute to the economic performance and societal welfare. Albanian VET effectively prepares VET students to achieve this goal, providing **high quality education and training**, drawing on **ICT-supported, effective pedagogical and organisational approaches** that prepare students to **meet labour market needs.**

a) Students/apprentices acquire market-relevant skills in **effective learning approaches** to develop their competences by **blended learning** and, if required, by online learning.

b) Teachers apply modern and **participatory inclusive teaching methods**, supported by **high quality digital media** and a modern **infrastructure.**

c) VET institutions provide theoretical and practical training, **agilely responding to private sector needs**.

d) Enterprises contribute to teacher's and student's skills through **industry training, exposure to new technologies apprenticeships and teaching materials.**

This vision will be pursued on a national level in different fields of action:

A) Provide quality education and training for approximately 30,000 students in **Multi-functional Vocational Centres** all-over Albania

   A. 18,000 students in 34 public VET schools
   B. 1,300 students of 4 private VET providers
   C. 10,600 students supported by 10 training centres
   D. in different modes: on site, blended learning, and e-learning

B) Strengthen **national agencies** to **lead** the process and **support** individual development paths of VET schools, providing effective support for teachers, technical staff, and directors, based on a clarified regulatory framework.

C) Strengthen the integration of resourceful **national and international donors and business partners** to contribute to market-oriented VET.

3.2 Summary of future scenarios of ICT-supported modernization of Albanian VET

The future scenarios developed in chapters 2.2 and 2.3 substantiate this vision. The following overview shows a refined summary of these scenarios.

3.2.1 Future e-VET solutions

Blended Learning	Combining online and onsite learning	A) Flipped classroom
		B) Student projects
	ICT-enriched onsite learning	C) Interactive plenary in class
		D) Active Group learning in class
Online Learning	A) Platform-based, asynchronous online learning	
	B) Live presentation and discussion	
	C) Combined (platform/ live)	
e-Practice	A) E-portfolio	
	B) Online coaching	
	C) Online promotion	
	D) Practice-based multimedia assignments	
Assessment	A) Online formative assessment	
	B) Online summative assessment	

3.2.2 Future e-VET management

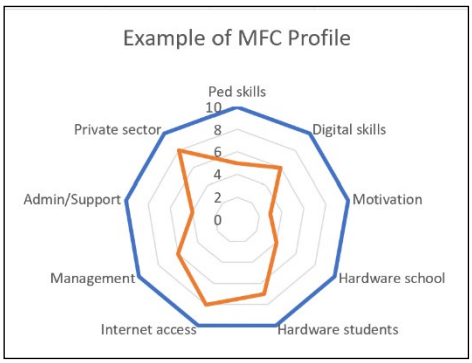
Train and Support	A) Training on blended learning (Pedagogy and platform use)
	B) e-content creation (f2f training + coaching / Online training + coaching)
	C) Training and exchange CPD and CD
	D) Leadership Training (Management skills, Blended Learning strategy)
	E) Brokering Industry training for pupils (guidelines and monitoring by NAVETQ)
	F) Brokering Industry training for teachers
Manage Change and Quality	A) Events and documentation
	B) Peer Exchange (Continuous content exchange in CoP and other forms, competitions)
	C) Integrated support (IT-Experts, data management, self-evaluation, accreditation, managing internal structures, budgeting)
	D) E-content production (Production, quality assurance, customization, and update)
Provide Infrastructure	A) Platform support (Selection of one national platform, Support of 3-4 platforms)
	B) MIS: Selection of a national system (SMIP 1/VTC-System), clarify interfaces with national learning platform)
	C) Hardware and internet access (Dedicated computer rooms, standard classroom infrastructure, internet access for schools and students

3.3 Modular support offer for MFC

3.3.1 Analyse MFC Profile

The situation analysis has shown that there are big differences between the different VET actors in Albania. Some VET schools have vast experience with pilot projects, and considerable skills, motivation, and resources to build on. Others struggle with deficiencies in different areas.

A focused support of MFC requires a **careful analysis of their prerequisites**, which can be documented in a **MFC profile with key success factors** *(see illustration on the right)*.



3.3.2 Individual development paths for MFC

Based on this profile and a clear understanding which of the e-VET solutions have the greatest potential to effectively improve their training offer, MFC should be able to understand and decide, …

1) which potential they can build on and which gaps they need to address,
2) which e-VET solutions are most effective and efficient for their students (see chapter 2.2),
3) which support offer is most relevant to implement effective e-VET solutions.

MFC will be supported in the development of their ICT-strategy and planning. They will develop a proposal for ICT-supported modernization of their offer during a phase of 4 years. Together with donors and national support they can design an **individual development path** according to their goals, possibilities and needs.

Support offers should give MFC incentives to develop their training and coaching offer to address labour market needs in their area.

3.3.3 Overview of modular offer for MFC

Based on their planned development path, they can apply for support, organised as a **modular offer**.

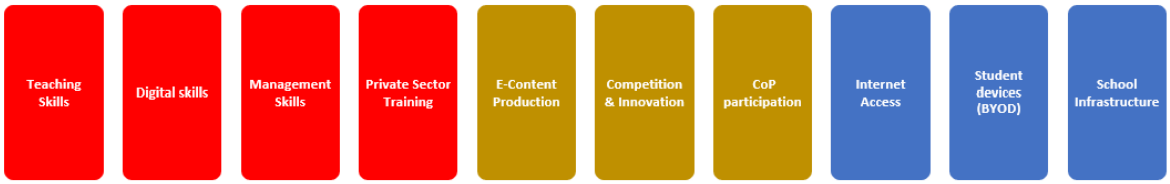


Illustration: Modular support in "Training&Support", e-VET management, and Provision of infrastructure

3.3.4 National offer to all MFC

All MFCs will be provided with **curriculum-aligned Albanian e-content** to most of the subjects/profiles including short courses provided on a **national learning platform** and/or **repository** to support participatory learning and practice.

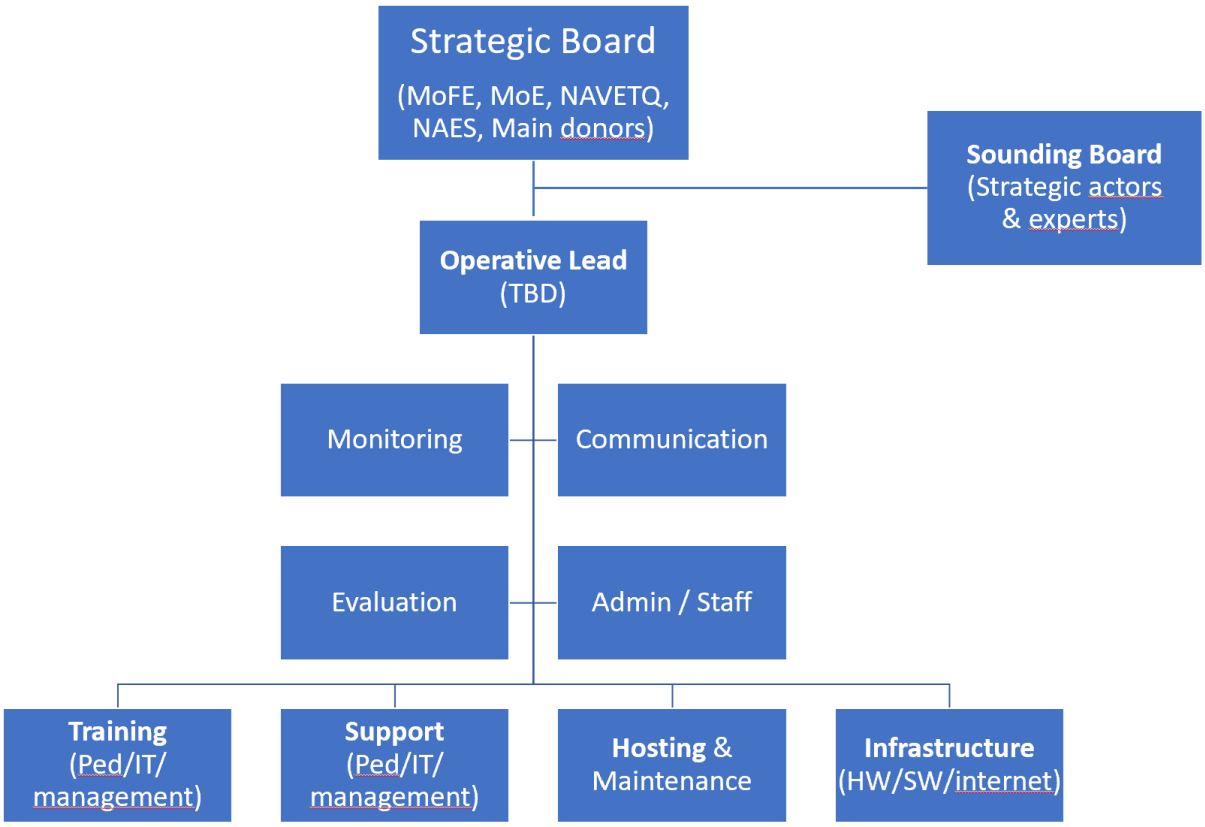
4 Organisation of ICT-supported modernization

4.1 Regulatory framework:

The implementation of the vision will be based on an improved regulatory framework. **Financial autonomy of VET providers** is expected to be established. The legal framework is regulated, to give VET providers the rights to generate revenue (e.g. from the production of utensils or devices during practical learning) and to manage expenditures by addressing their needs and contributing to their strategy. Schools' actors make effective and visionary decisions on how to use or invest their financial resources for the schools' interests. In their proposals for support (see chapter 5.3.2) they need to show their investment into the modernization process within their budget, as matching funds to donor funds.

4.2 Organisation

The steering and implementation organisation is expected to involve the following functions.



5 Roadmap

The following **roadmap** shows how this vision can be reached by the key stakeholders of Albanian VET in a modernization process.

5.1 Overview

To realize the scenarios described in chapter 3.2 the following activities need to be planned and coordinated.

MAIN Phases	ACTIONS	2022		2023				2024				2025	2026	2027	2028	2029	2030
		Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4						
Preparation																	
	Specifying main areas of intervention and roles																
	Focused analysis of gaps and needs																
	Specifying future scenarios																
	Specifying e-VET management																
	Specifying budgeting																
	Negotiation with donors																
	Establishing providers and preparing for launch																
	Milestone 1: Roadmap specified, support and monitoring established																
Launch																	
	Schools' information																
	Application phase																
	MFC launch																
	Formative evaluation. Design and planning phase I																
	Milestone II: Initial phase with xx MFCs launched and evaluated																
Phase I: Systematic ICT-supported modernization																	
	Individual development paths of MFC																
	Formative and summative evaluation. Design and planning phase II																
	Milestone III: ICT-supported modernization implemented with xx MFCs																
Phase II: Continuous and integrated modernization process																	
	Individual development paths of MFC																
	Summative evaluation of integrated ICT-supported modernization																
	Milestone IV: Sustainable modernization-process established in Albanian VET																

5.2 Preparation

5.2.1 Specifying main areas of intervention and roles

Kick-off workshop of operative leads:

- Refinement of areas of intervention.
- Defining interfaces and communication between intervention areas.
- Clarifying interfaces and communication needs with strategic development
- Coordination of preparation activities.

5.2.2 Systematic analysis of gaps and needs

- Focused survey among all MFCs, self-assessment of MFC (see chapter 3.3.1)

5.2.3 Specifying future scenarios

- Specify and further prioritize scenarios based on needs and gaps

5.2.4 Specify e-VET management

- Design and organisation of training and support (see chapter 2.3 and 3.2)
- Design of management support
- Define HW/SW/internet strategy and scope, select national platform

5.2.5 Specifying budgeting

- Specify activities and deliverables
- Negotiation with donors, Cost/benefit analysis
- Defining terms for MFC for applying for funding

5.2.6 Establishing providers and preparing for launch

- Recruiting staff for national training and support
- Design of monitoring and evaluation
- Competition among pioneers: Presentation of good practice (e.g. Improve social media appearance of MFC with meaningful messages that describe the institution as attractive, modern education provider, using ICT and other modern tools (example: SDC cases, Bolivia). Invite projects sponsored by GiZ, British Council etc.)
- Build website with key information and help-desk
- Verification of the timing of the following phases of the roadmap.

Milestone 1: **Roadmap is specified**, support and monitoring established

5.3 Launch

5.3.1 Schools' information

- e-VET-Fair: online and onsite event with presentation and discussion of good practice, hands-on experience
- Self-assessment of MFC “Are you ready for VET modernization?” (see chapter 3.3.1)
- Dedicated website with key information, application
- Presentation of modular offer and expected MFC investment and engagement

5.3.2 Application phase

- MFC clarify their individual development strategy / path
- MFC apply for funding, training and support (HW/SW/internet)

5.3.3 MFC launch

- Recruiting staff for local support (ped/IT/management)
- Register for platform use
- Training of CoP facilitators, local support etc.
- Training and support of teachers during one school year
- Launch of CoPs

5.3.4 Evaluation/Reporting/Planning of Phase II

- Monitoring of activities and deliverables of MFC
- Support of MFC in formative evaluation
- Review of M&E findings, take up recent developments and funding opportunities
- Recommendations for the improvement of e-VET solutions, e-VET management support and MFC development paths
- Design and preparation of the formative and summative evaluation of phase I (design baseline evaluations etc.)

Milestone II: Initial phase with participating schools launched and evaluated

5.4 Phase I: Systematic ICT-supported modernization

5.4.1 Individual development paths of MFC

- Implementation of e-VET solutions according to individual development path of MFC
- Modular offer of training & coaching, management and infrastructure

5.4.2 Evaluation/Reporting/Planning of Phase II

- Monitoring of activities and deliverables
- Support of MFC in formative and summative evaluation
- Review of M&E findings
- Improvement of e-VET solutions, e-VET management support and MFC development paths

Milestone II: Initial phase with xx schools launched and evaluated

5.5 Phase II: Continuous and integrated modernization process

In the second and last phase of the roadmap the processes will be improved, based on the evaluation findings of phase I. Evaluation & monitoring processes will be integrated in the standard monitoring processes of the agencies.

6 Next Steps

The following next steps are suggested by the authors of this document.

What	Who	When
Informal discussion with the deputy minister of MoFE. Adaptation and further development.	NAVETQ, NAES, SDC, Swisscontact, SNBI SNBI	April 2022
Presentation and **discussion** of the roadmap to MoFE and MoE, as well as the main donors (GiZ, EU, UNICEF, OeAD etc).	NAVETQ, NAES, SDC, Swisscontact, SNBI	May 2022
Collaborative further development and refinement (e.g. specification and adaptation of intervention fields. Specification of organisation, phases, and budget)	NAVETQ, NAES, Participating donors	June/July 2022
Sign-off	MoFE, MoE, donors	August 2022
Launch of ICT-supported modernization process Implementation according to roadmap	Operative lead	September 2022

Appendix

Contributions and needs of stakeholders

The following chart gives a rough overview of potential contributions and needs that have been discussed during the development of this roadmap. This overview may be complemented and refined during the preparation phase.

Stakeholders	Contribution	Needs
MFCs - Public VET schools - Private VET schools - VET centers	- Implementation of CPD plans of teachers that contain elements of digital skills	- Training - Teaching materials - Infrastructure (HW, SW, internet) - Support (ped/IT/man.)
MoFE Directorate for employment and skills	- Infrastructure investments - Regulatory framework enabling for roadmap implementation (financial autonomy e.g.) - Lead implementation of the roadmap	- Donor investments - Technical assistant
NAVETQ	- Technical contribution for roadmap design - Decision making on platform(s) - Continual assistance of CPD coordinators	- Technical specifications of each available platform
NAES – National Agency for Employment and Skills	- Technical contribution for roadmap design - Investment needs assessment and report	
MoE ASCAP	- Teachers' pedagogical curricula revised - Training of teachers - Inclusion of higher education	
State minister of youth	- Sensitizing on the necessity of digital skills	
Agency for information society	- Endorsing online platform(s)	-Technical specifications of available platform(s)
Center for School Management	- Capacitation of school directors	
Private sectors providers	- Apprenticeship opportunities - Industry training for teachers - Decision making through school boards - Curricula revisions and updates - Open lecturers	
Businesses as donors / contributors	- Teaching materials - Sponsorship: infrastructural investments	
International donors (SDC/SECO, GIZ, Austrian, UNDP, EU IPA, Italian Cooperation)	- Infrastructural investments - Technical assistance based on best practices in respective donor countries	

Key Terms

Over the last 20 years a great variety of terms has emerged in the context of ICT-supported VET. In many cases there is no established definition. To help to navigate in the sometimes confusing variety of terms

the authors have attempted to define some of the key terms used in this document, related to the application in Albania and drawing on the UNESCO TVETipedia Glossary.

Asynchronous learning: Participants do not communicate and interact in real-time, e.g., viewing videos on a learning platform, handing in assignments which will be evaluated later, discussing a problem in an online forum over a longer period.

Blended Learning: A combination of face-to-face activities and online activities, e.g., preparing a lesson online with presentations and assignments on a platform and discussing the solutions in the classroom.

Digital technologies «Diverse set of technological tools and resources used to transmit, store, create, share, or exchange information. These technological tools and resources include computers, the Internet (websites, blogs, and emails), live broadcasting technologies (radio, television, and webcasting), recorded broadcasting technologies (podcasting, audio and video players and storage devices) and telephony (fixed or mobile, satellite, visio/video-conferencing, etc.)." (**UNESCO)**

Digitization, Digitalization and Digital Transformation: There is a hype around these terms and no consensus on a definition has been established yet. In this document we follow the pragmatic distinction of Bloomberg (2018):

- **Digitization:** The process of *changing information* from analogue to digital form. In the context of VET, transforming printed textbooks or assignments into PDF-documents that can be accessed online (see chapter 1.3.5, e-content development).
- **Digitalization:** Changing *processes and social interaction* in organizations, e.g., students discussing assignments and handing them in online and discussing questions in the classroom (see chapter 1.2, e-VET solutions).
- **Digital transformation: "***Customer-driven strategic transformation* «of a *whole organisation* "that requires *cross-cutting organizational change* as well as the implementation of digital technologies.", e.g., rethinking how young people and adults in informal labour can access vocational training and coaching (no experience in Albanian VET so far).

Hybrid learning: Synchronous modality of learning where a part of students attends the class physically, while others attend virtually.

Microlearning: Microlearning is a holistic approach for skill-based learning and education which deals with relatively small learning units. It involves short-term-focused strategies especially designed for skill-based understanding/learning/education.

Online Learning: Online learning refers to teaching and learning based exclusively on ICT, e.g., completing an online course without any face-to-face meetings.

Practical Learning: A learning approach based on acquiring knowledge and skills by actively participating in a real-life work environment, e.g., placement in a company, workshop/kitchen/laboratory/… in VET school.

Synchronous learning: Online learning occurs real-time, e.g., teacher and students presenting and discussing a topic with the help of an e-conference system with audio/video-transmission

Modernization: In terms of education, modernization refers to the upgrading of the learning ecosystem, based on technology use, learner-centred teaching methods and networking, for an enhanced interactive learning experience

Virtual Learning Environment: A virtual learning environment (VLE) in educational technology is a web-based platform for the digital aspects of courses of study, usually within educational institutions. They

present resources, activities, and interactions within a course structure and provide for the different stages of assessment.

Assistive technology
A piece of equipment or system that is used to improve or enhance digital leaning access and capability. This is particularly important to individuals with disabilities or difficulties in engaging with digital approaches to learning.

Augmented reality (AR)
Augmented reality is a process that overlays digital learning or teaching content onto the physical world. This term can also encompass mixed reality or MR

Collaborative digital learning
An educational approach to learning that involves groups of learners working together, via digital means, to complete a task.

Content library
A content library is similar to a traditional library and is a digital store of folders and files which can be accessed by authorized users.

Content management system
A content management system is an application that is used to consistently manage content (for example, documents, images, videos) and allow multiple contributors to create, edit and publish content.

Digital access
The ability to participate in learning through digital means. This includes providing appropriate hardware and software to facilitate access to digital learning.

Digital assessment
Assessment activities that involve students digitally creating, submitting, or completing work. Staff review this work and then either assess it using digital or analogue means to assess the work. Examples include digital examinations, plagiarism-detection software, virtual reality simulations, video performances or digital portfolios.

Digital learning management system
Digital design and delivery platform – usually accessed using devices – which enables various methods of teaching and learning delivery to be used. Through a learning management system, a provider can use, for example, video or podcasts to support and enhance digital learning methods.

Digital learning objects
Modular or discrete units of learning designed for digital delivery.

Digital literacy
An individual's ability to use digital information and relevant technologies to find, evaluate, create, and communicate information. This type of literacy requires cognitive and technical skills.

E-book
A virtual book acquired digitally as an alternative to a physical book. This is usually accessed digitally through virtual or digital libraries and portals

E-portfolio

Where students are required to develop a body of digital work or evidence in order to demonstrate their skills in a given area, for example, games design or digital media. As with physical portfolios, e-portfolios can consist of several different types of evidence such as documents, reflective logs, images, videos, websites, blogs.

Flipped learning
A pedagogical approach which provides detailed individual instruction to individual students placing the onus on them to use digital resources to gain understanding of content, concepts or theories related to learning outcomes. This happens outside of a physical space. Students are then invited into a virtual or physical space to articulate and discuss their findings and are guided by teaching staff to ensure that gaps in knowledge are filled and further enquires directed appropriately. This approach is designed to 'flip' the more didactic approach of lecture or tutorial-based instruction, followed by a more flexible approach to articulating what has been learned and any further enquiry.

Gamification
Method of teaching using games principles to enhance learning and engagement. This often involves the application of game-design elements and principles in non-game contexts, for instance, a set of activities and processes to solve problems by using or applying the characteristics of game elements. Often, this manifests as students being set, and completing, a series of tasks which contribute to reaching an overall goal. The aim of this approach is to maximise students' enjoyment and engagement through capturing their interest and inspiring them to continue learning.

Mobile learning
The use of mobile devices (for example, phones or tablets) and related apps in teaching and learning activity. This term can encompass more traditional learning activities (such as reading digital versions of journals), often neglected learning activities such as discussions, groupwork and creation of online content, as well as less traditional activities such as engaging in virtual simulations.

Online labs
A term to describe ways of replicating activities in physical labs such as simulations, experiments, virtual reality field trips and lab casts which connect staff and students through live streaming.

Platform
In the context of e-learning, platform usually refers to applications such as virtual learning environments (VLE, such as Moodle or Google classroom) or personal learning environments (PLE).

Podcast
An audio file made available digitally, often a radio broadcast, which can be downloaded to a device.

Portal
A website that provides a 'front door' for links to key sources of information. A student portal might, for example, provide links to a VLE, student email, learning resources and student support services.

Technology enhanced learning
Technology enhanced learning is an overarching term to describe the use of technology to support learning, teaching and assessment and to enhance the student experience. Technology enhanced learning can support teaching and learning both onsite and remotely. The term "web enhanced learning" is sometimes used synonymously with technology enhanced learning; although the former is, by definition, a more focused term relating to all technology used to support learning while web enhanced learning focuses on the connectivity and the use of web-enabled resources.

Virtual classroom

A digital environment provided through a virtual learning platform, which replicates the physical classroom in a virtual way, allowing tutors and staff to communicate, interact and engage synchronously in teaching and learning activities.

Webinar
A web-based learning or training activity, usually interactive, for example, a workshop or seminar. Webinars take place synchronously using video conferencing software, with participants taking part digitally. Webinars may be recorded and made available as a video for asynchronous viewing.

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