Digital Learning Strategy Toolkit and Ecosystem Mapping

by the DISCOVER Project Consortium

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- Centre for the Advancement of Research and Development in Educational Technology – (CARDET) - Cyprus
- University of Nicosia (UNIC) - Cyprus
- EUROTraining - Greece
- AGENCE TUNISIENNE DE FORMATION PROFESSIONNELLE (ATFP) - Tunisia
- CFA Bizerte - Tunisia
- CFA Menzel Bourguiba - Tunisia
- CSFAG Ariana - Tunisia
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Contents

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Introduction

Digital learning is revolutionizing education worldwide, and the Vocational Education and Training (VET) sector is no exception. By integrating digital tools and methodologies, VET institutions can enhance teaching effectiveness, improve learner engagement, and align more closely with the evolving needs of the labour market. In Tunisia, the digital transformation of the VET sector presents both significant opportunities and unique challenges.

Key insights gathered from VET providers, VET trainers and VET learners in Tunisia shed a light on current digital learning practices implemented across Tunisian VET centres, as well as the current progress of the digital transformation of the Tunisian VET sector. These insights also highlighted the following areas for improvement across Tunisian VET centres:

- Digital Strategy, Infrastructure & Equipment
- Teaching and Learning Practices
- Professional Development
- Assessment Practices
- Digital Literacy Education

Taking into consideration these key insights, the DISCOVER project developed the present Digital Learning Strategy Toolkit and Ecosystem Mapping, addressing VET providers. The Toolkit aims to map out and connect the needs of the Tunisian VET centres with a framework that is required to develop and implement a digital learning strategy.

More specifically, the present Toolkit maps out the Ecosystem of the roles related to digital learning strategies in the Tunisian VET sector and their dependencies, along with an overview of interrelated actions in this area, as well as mechanisms to collaborate with stakeholders. The purpose of the Ecosystem Mapping is to map out the interconnections between all the people, ideas, and factors that influence and impact the integration of digital learning in the VET sector, in order to enable VET centres and VET provider to leverage systems for digital learning.

In addition, the Toolkit presents a readiness checklist for the development and implementation of Digital Learning Strategies. This checklist has been tailored to the needs of Tunisian VET centres, in order to reflect on what is needed to design, develop, and deliver digital VET programmes. The sections refer to:

- Strategic planning for digital learning
- Infrastructure and equipment
- Continuous professional development
- Digital Operations and Communication
- Teaching and learning online
- Educators' digital professional and pedagogical competences
- Digital and Online assessment practices

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- Learner profile – digital competences.

DISCOVER is a project of the Erasmus+ Capacity Building in the field of Vocational Education and Training (VET) programme, implemented in Cyprus, Greece and Tunisia, that aims to build the capacity of Tunisian VET centres to develop and implement a strategy for digital learning through a multistakeholder approach, as well as to support the digital learning transformation of VET institutions in Tunisia in order to increase their responsiveness to labour market needs and skills development.

In order to identify and analyse the needs and challenges of VET centres in Tunisia, in regards to digital learning, as well as assess their digital readiness and their current level of digital transformation, and establish the theoretical framework for the design and development of a tailored Toolkit, the partner organisations in Tunisia and the three Tunisian VET centres collected data from VET providers, trainers and learners, through desk and field research activities: desk research, focus groups and the SELFIE Tool questionnaire. Taking into consideration the main findings and conclusions drawn from the Report following the research activities, the present tailored Toolkit was developed.

Finally, it is important to note that the Toolkit was developed to reflect tested EU frameworks and particularly, the SELFIE (Self-reflection on Effective Learning by Fostering the use of Innovative Educational technologies) for work-based learning (WBL), one of the main tools that were used in the research activities, and the main influences of the present Toolkit. The SELFIE Tool is a free, customisable online tool for schools and companies to support them in reflecting on how they use digital technologies in teaching, learning and training. It is currently being used by more than 39,783 schools and more than 5,922,276 users from approximately 86 countries, was developed and launched in 2018 by the European Commission within the framework of promoting digital-age learning in educational organisations. Its aim is to support schools to make the most of digital technologies by guiding them to do a self-assessment that can enable them to develop an action plan and embed digital technologies into teaching, learning and assessment in order to enhance their digital capacity.

By leveraging the insights and tools provided in this Toolkit, Tunisian VET centres can effectively navigate the complexities of digital transformation. This will not only enhance their operational efficiencies but also significantly improve the learning outcomes for VET learners, preparing them for the demands of the modern workforce. The journey towards digital integration in VET is ongoing, and this Toolkit is a step towards a more connected, innovative, and future-ready educational landscape in Tunisia.

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Section A: Ecosystem Mapping

A.1. Roles and dependencies for digital learning strategies in Tunisian VET sector

Overview of the VET Sector in Tunisia

Vocational Education and Training (VET) in Tunisia plays a crucial role in equipping individuals with the skills and knowledge they need to succeed in the workplace.

The public VET sector is responsible for providing a wide range of training programmes to meet the diverse needs of the Tunisian economy.

Structure of Tunisian VET Sector

The public VET sector in Tunisia is supervised by the Ministry of Employment and Vocational Training (MEFP). The Ministry is responsible for developing and implementing VET policies, as well as managing and funding public VET institutions.

A range of operators provides vocational training in Tunisia:

- The ATFP - Agence Tunisienne de la Formation Professionnelle (Tunisian Agency for Vocational Training) operating under the MFPE and with 136 training centres.
- The other sectoral ministerial departments: the Agency for Agricultural Vulgarisation and Training (AVFA) under the Ministry of Agriculture with 39 schools, the Ministry of National Defence with 10 schools and the Training Agency for Tourism Trades (AFMT) under the Ministry of Tourism with 8 schools.
- The private VET sector comprises 1 169 schools that provide initial vocational training.

Funding of the Public VET Sector

The public VET sector in Tunisia is funded by a combination of government and private sources. The government provides most of the funding, but private businesses also contribute to the sector through tuition fees and apprenticeships.

Challenges Facing the Public VET Sector

The public VET sector in Tunisia faces several challenges, mainly including:

- **Lack of relevance to labour market needs:** Some VET programmes are not aligned with the needs of the labour market. This makes it difficult for graduates to find jobs that match their skills.

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- **Poor quality of some VET programmes:** The quality of some VET programmes is not updated. This can make it difficult for graduates to compete in the job market.

Despite these challenges, the public VET sector in Tunisia is playing an important role in developing the skills of the Tunisian workforce.

Recent Developments in the Public VET Sector

The Tunisian government has been working to address the challenges facing the public VET sector.

Some of the recent developments in the sector include:

- **The development of a new VET strategy:** The new strategy aims to make VET more relevant to labour market needs and improve the quality of VET programs.
- **The increase of private sector involvement in VET:** The government is encouraging more private sector involvement in VET. This is helping to improve the quality of VET programs and make them more responsive to the needs of businesses.
- **The expansion of access to VET:** The government is expanding access to VET by building new VET institutions and increasing the number of training places.

The Tunisian Vocational Education and Training (VET) sector is undergoing a transformation towards incorporating digital learning strategies. This shift necessitates a clear understanding of the roles and dependencies of various stakeholders involved.

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Roles and dependencies

Ecosystem mapping helps visualise the complex web of actors, activities, and relationships surrounding a product, service, and issue. It's a valuable tool for understanding how different elements interact and influence each other.

Here's a breakdown of the key players in the Tunisian VET sector:

1. **Ministry of Employment and Vocational Training (MEFP)**
   - http://www.emploi.gov.tn/fr

The MFPE holds the primary responsibility for formulating and overseeing the national digital learning strategy for the VET sector.

- **Role:** Provide leadership, set standards, and ensure quality assurance, setting **guidelines, allocating resources, and monitoring implementation.**

- **Dependencies:** Collaboration with stakeholders, industry representatives, and international organizations is crucial for the MEFP.

2. **Government Agency (ATFP)**
   - http://www.atfp.tn/

- **Role:** Provide leadership, set standards, and ensure quality assurance, set digital learning policies, provide funding for VET institutions and provide training for trainers on using technology effectively.

- **Dependencies:** Collaboration with stakeholders like teacher training institutions, industry representatives, and international organizations.

3. **Vocational Education and Training Providers**

- **Role:** Reponsible for implementing the national digital learning strategy at the ground level. This involves integrating digital tools and resources into training, providing training for trainers on using technology effectively, and ensuring learners have access to necessary equipment and infrastructure.

- **Dependencies:** VET providers rely on the ATFP and MEFP for guidance, resources, and quality assurance measures. They depended on the government for funding and policies. They also depend on collaboration with teachers, trainers and industry partners for content development and practical applications of digital learning.

4. **Teachers and Trainers**

- **Role:** Teachers and trainers play a pivotal role in facilitating digital learning. They need to be equipped with the necessary skills and knowledge to develop

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and deliver engaging online or blended learning experiences. This includes using learning management systems, incorporating multimedia content, and fostering interactive learning environments. Guide, and support learners in using digital tools.

- **Dependencies:** Teachers and trainers depend on the ATFP and VET providers for training opportunities, technical support, and access to digital resources. They may also benefit from professional development programmes offered by teacher training institutions. They are also dependent on VET providers in regards to receiving training.

5. Industry Partners

- **Role:** Industry plays a vital role in ensuring the relevance of digital learning in the VET sector. Partners can provide real-world case studies, guest lectures, and internship opportunities that complement digital learning. They can also help identify industry-specific skills needed, provide feedback, and suggest the development of relevant digital learning content. Potentially offer work-based learning opportunities linked to digital learning programs.

- **Dependencies:** Industry partners rely on collaboration with the MEFP, ATFP, VET providers, and the National Centre for Continuing Training and Career Development (CNFCPP) to ensure the alignment of digital learning with current industry needs and job market demands.

6. Teacher Training Institutions

- **Role:** These institutions play a critical role in equipping teachers with the necessary competencies to effectively implement digital learning strategies. They can offer training programs on using technology in teaching and integrating digital tools.

- **Dependencies:** Teacher training institutions depend on the ATFP and MEFP's guidance on digital learning priorities and industry partners' input on required skill sets.

7. Learners

- **Role:** Learners are the ultimate beneficiaries of digital learning strategies and actively participate in digital learning activities. They need to develop the necessary digital literacy skills to navigate online learning platforms, access and use digital resources effectively, and participate actively in online learning environments.

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- **Dependencies:** Learners rely on VET providers and trainers to provide them with proper training and guidance on using digital learning tools and platforms. They are dependent on trainers for access to technology, internet connectivity, and guidance from trainers.

8. Ministry of Communication Technologies (MCT)

- https://www.mtc.gov.tn/index.php?id=1&no_cache=1&L=2

The MCT plays a key role in enabling digital learning within the VET sector of Tunisia.

- **Role:**

  - **Infrastructure Development**: The MCT focuses on providing the essential infrastructure for digital learning. This includes ensuring reliable internet access, particularly in areas where VET institutions are located.
  - **Policy and Strategy**: The MCT contributes to developing national policies and strategies for integrating ICT into VET programs. This could involve setting standards for online learning platforms.
  - **Promoting Innovation**: The MCT can encourage the development and adoption of innovative digital learning tools and resources. This might involve collaborating with educational technology companies or research institutions.

- **Dependencies:**

  - **Ministry of Employment and Vocational Training**: Successful digital learning implementation requires close collaboration with the Ministry of Employment and Vocational Training, the main governing body for the VET sector.
  - **Educational Institutions**: VET institutions like vocational schools and training centres need to be actively involved in the process.
  - **Private Sector**: Collaboration with the private sector, including technology companies and ICT service providers, is crucial. They can contribute by developing relevant learning platforms, content creation tools, and offering technical expertise.

Overall, the MCT acts as a facilitator and enabler for digital learning in the VET sector. Their success depends on working closely with other government bodies, educational institutions, VET providers and the private sector to create a supportive ecosystem for digital learning to thrive.

9. Non-profit Organizations (NGOs):

NGOs bridge the digital divide, offer training and resources to promote digital inclusion in the VET sector and provide resources and expertise.

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- **Role:**

  - **Develop digital learning materials:** NGOs can create high-quality, accessible online courses, tutorials, and other resources tailored to the specific needs of the VET sector.
  - **Train VET trainers:** NGOs can offer training programmes to equip VET trainers with the pedagogical skills and knowledge required to effectively integrate digital tools and resources into their teaching.
  - **Promote digital literacy:** NGOs can conduct workshops and awareness campaigns to enhance digital literacy among VET learners, trainers, and administrators.
  - **Bridge the digital divide:** NGOs can work with local communities and stakeholders to ensure equitable access to technology and the internet for all VET learners, regardless of their socioeconomic background. This might involve providing devices or subsidized internet access.

- **Dependencies**

The success of NGO initiatives in promoting digital learning within the Tunisian VET sector depends on several factors:

  - **Public-Private Partnerships:** Collaboration between NGOs, government agencies, and private sector actors can leverage resources and expertise for a more comprehensive approach.

  - **Sustainable Funding:** Long-term funding is essential for NGOs to develop and maintain digital learning resources and programs. This could involve grants, fundraising initiatives, or public-private partnerships.

  - **Infrastructure Development:** Reliable and affordable internet access, as well as access to devices, are essential for widespread adoption of digital learning in the VET sector.

By working collaboratively and addressing these dependencies, NGOs can play a significant role in empowering Tunisia's VET sector with the tools and resources needed to thrive in the digital age.

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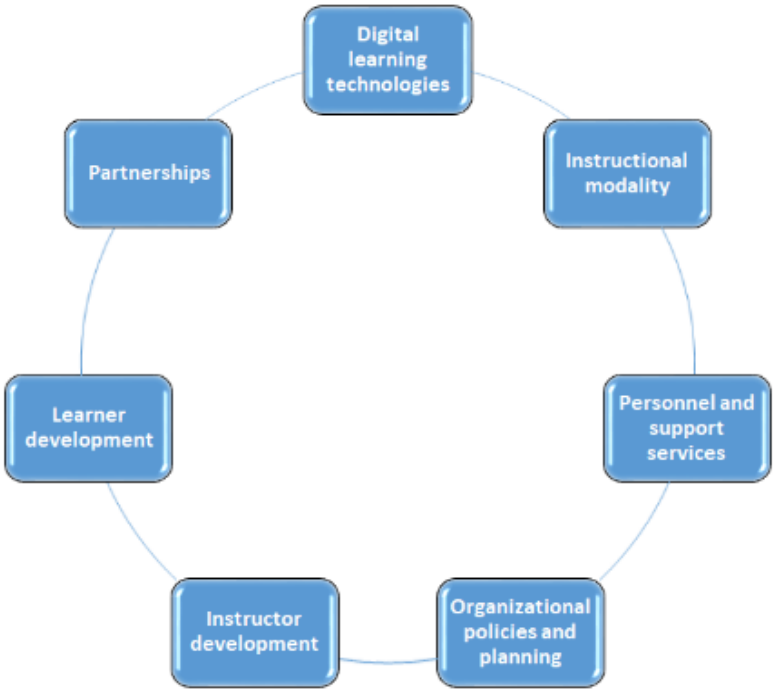
Scheme

The ecosystem can be visualized as a network diagram where stakeholders are connected by actions representing interactions and dependencies:



The public VET sector in Tunisia is an important part of the country's education and training system. The sector is facing several challenges, but the government is working to address these challenges and improve the quality of VET provision. With continued investment and reform, the public VET sector can play an even greater role in supporting Tunisia's economic development.

The successful implementation of digital learning strategies in the Tunisian VET sector requires a collaborative effort from all stakeholders. By working together, the MFPE, VET providers, trainers, industry partners, teacher training institutions, and learners can create a robust digital learning ecosystem that equips graduates with the skills and knowledge needed to thrive in the digital workplace.

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A.2. Overview of the interrelated actions

Interrelated actions, relevant to digital learning strategies, such as legislations, strategies, projects and policies, that the Tunisian VET sector can refer to, are significant for the support and guidance of VET centres in creating a robust digital learning ecosystem that empowers trainers, engages learners, and prepares graduates for the evolving job market. Actions like these are important to orient and guide VET organisations regarding the direction they should follow towards their digital transformation.

Although there are few such actions currently implemented in the Tunisian VET sector, following is a brief overview:

- **Legal framework, Regulations and Laws (IVET)**

"FAD Order of 23 November 2020"

Minister's Order, setting the terms and conditions of initial distance vocational training.

- **National Guidelines and links between e-learning strategies and policies**

The VET reform strategy 2016-2020 in Tunisia aimed to increase the attractiveness of VET and support the professional development of trainers. The Ministry and social partners, in collaboration with the International Labour Organization (ILO), started discussions for a new National Employment Strategy for 2020 to 2030.

In line with the Ministry's strategy, ATFP has embarked on a digital transformation process. This project is changing the face of the agency, enabling fast, efficient administration that meets the expectations of staff, learners and environment. This direction is being implemented through periodic roadmaps. The projects resulting from these roadmaps consider all the agency's processes.

In addition, the National Centre for Training of Trainers and Training Course Design (CENAFFIF) affiliated to the Ministry of Employment and Vocational Training works to develop educational research to promote modern training methods and tools in the field of educational innovation in VET. As most strategies are not redefined yet but they are currently undertaken such actions.

- **Related programs and practices**

There are only a few individual initiatives and practices in international projects, in a limited number of vocational training centres, under the supervision of the Ministry and the Tunisian Vocational Training Agency (ATFP).

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A.3. Mechanisms to collaborate with stakeholders

Introduction to Collaboration in the Public VET Sector

In the Vocational Education and Training (VET) sector, working together with stakeholders and key players (as detailed in the previous section of Roles and Dependencies) is vital for enhancing the efficiency and flexibility of education and training programmes to market needs.

This section defines different mechanisms which encourage collaboration and engagement with stakeholders, ensuring that VET programmes are in sync with labour market demands and enhance student outcomes.

Communication Channels for VET Collaboration and Stakeholder Engagement

Engagement events are crucial for receiving feedback and promoting collaboration. Some of these events are company roundtables, learner focus groups, and industry advisory board meetings. These occasions provide spaces for talking on changes to the curriculum, skill requirements, and industry advancements:

- **Meetings with Industry Advisory Executives:** These combine participants from government agencies, companies, educational institutions, and industry organizations to offer strategic counsel on training requirements and curriculum development.
- **Employer Roundtables:** Meetings of employers to share ideas on current marketplace dynamics as well as required skill sets that affect VET programme design.
- **Learner focus groups:** Ask learners about their desired outcomes and activities, then apply their responses to help designers of training programmes understand their needs and objectives.

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Communication Channels in the Public VET Sector

Building and maintaining partnerships, sharing information, and fostering discussion among VET stakeholders all require effective communication channels. Some of these channels consist of:

- **Industry Forums:** Frequent gatherings of industry participants to talk about training requirements and labour trends.
- **Educational Conferences:** Forums for sharing research results, innovative approaches, and the latest developments in VET.
- **Online platforms:** Digital areas, such as discussion boards, forums, and collaborative tools, where stakeholders can communicate frequently and collaborate on assets.

Advisory Committees and Industry Partnerships

The success and usefulness of vocational training and educational programmes are heavily dependent on cooperation between industries and advisory committees. These groups, which include representatives from companies, industry organizations, government agencies, and educational institutions, collaborate in order to provide input on a range of VET-related subjects, including:

- **Curriculum Development:** Creating a curriculum that is up to date with the norms and practices of the company in question.
- **Promoting internships, training programmes,** and other practical training opportunities are examples of work-based learning opportunities.
- **Skills Training:** Identifying and solving skills gaps related to the industry.

Policy Dialogues and Consultations

Stakeholders are involved in the creation and execution of VET policies through policy dialogues and consultations. These processes make sure that guidelines, funding requirements, implementation of programs, and legal frameworks are all influenced by the requirements of learners and the industry.

- **Policy Dialogues:** Scheduled talks to match VET policies with workforce development and financing goals involving government agencies, business leaders, and academic institutions.
- **Meetings:** Using focus groups, questionnaires, and open forums to get input from stakeholders in order to inform policy choices.

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Feedback Mechanisms

In the VET sector, collecting input from stakeholders is crucial to ongoing progress. A number of techniques can be used to collect feedback and evaluate the success of a program:

- **Feedback Forms:** Companies, learners, and educators are given surveys and questionnaires to complete in order to get their feedback.
- **Performance Metrics:** Data-driven evaluations of programme results, such as learner satisfaction and employment rates, to pinpoint areas in need of development.

Partnership Opportunities

In the VET sector, collaborative partnerships improve the level of quality and relevance of training initiatives. These collaborations can take on a number of forms, such as:

- **Apprenticeship Programmes:** Collaborative efforts to offer practical training and industry experience, involving educational institutions and industry partners.
- **Industry Certifications:** Programmes designed in collaboration with professional organizations to ensure that credentials match to industry norms.
- **Work-Integrated Learning:** Through co-ops and internships, learners can apply their academic knowledge in practical contexts.
- **Skills Improvement Projects:** Collaborative initiatives that fill certain skill gaps while developing innovative instructional resources.

Proposed Sections and Features for Online Collaboration

An online platform for the public VET sector should have the following features to facilitate stakeholder participation and collaboration:

- **Discussion Forums:** Forums where those with an interest can exchange concepts, discuss problems, and work together to find solutions.
- **Resource Libraries:** Collections of research reports, best practice manuals, and digital learning resources.
- **Skills Assessments:** Materials to assist trainers and learners in assessing their abilities and highlighting areas in need of development.
- **Job Placement Services:** digital directories that link learners with internships and possible employers.
- **Interesting content:** Infographics, videos, and interactive materials that promote the positive benefits of teamwork and highlight effective alliances.

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- **Stakeholder Maps and Organizational Chart:** Illustrative representations of the linkages and interconnections between stakeholders.
- **Current Partnerships and Projects:** Details about advisory boards, current projects, and partnership arrangements.

Strong collaboration amongst all stakeholders is essential for the successful implementation of digital learning initiatives in the Tunisian VET sector. Through the utilisation of many communication channels, advisory committees, engagement events, and collaborations, the industry can guarantee that training programmes maintain their relevance, efficacy, and reactivity to the changing needs of the labour market. In the end, this cooperative strategy will improve educational outcomes while promoting Tunisia's economic growth.

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Section B: Digital learning readiness checklist

B.1. Strategic planning for digital learning

Why do VET organisations need a Digital Learning Strategy?

In the 21st century, the pervasive influence of digital technologies underscores the critical importance of human capital skills for sustained economic and social advancement. As technological innovation accelerates, the need for employees with robust digital competencies becomes increasingly imperative for both society and organizations. Vocational Education and Training (VET) emerges as a pivotal solution to meet this demand. However, amidst the fragmented nature of the VET sector in many countries and the absence of comprehensive national or transnational policies, VET organizations face a pressing need to develop tailored strategic plans. These plans are essential for aligning their learning objectives with the rapid pace of technological progress and development, ensuring relevance and effectiveness in the digital age.

What is a strategy?

Strategies represent an organization's overarching plan, or a series of interconnected actions aimed at accomplishing long-term objectives, all of which should be in harmony with the organization's vision and mission. These plans reflect the strategic objectives of the organization and serve as the foundation for its policies and procedures.

Strategies answer the question "Why are particular strategic objectives being pursued?"

Policies encompass a set of guidelines, standards, rules, and regulations established and enforced by the organization to facilitate rational decision-making in the execution of the strategy. Their ultimate purpose is to enable and reinforce the achievement of the strategy's objectives.

Policies answer the question "How will your vision and objectives be realized?"

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Procedures encompass the daily actions and activities that operationalize policies. In essence, they detail the methods through which the organization attains its predetermined goals. Procedures encompass training, tools, instruments, devices, and specific steps that must be undertaken.

Procedures answer the question "What actions are being taken to implement policies?"

Setting your strategic objectives

Setting strategic objectives is a crucial step in developing a digital learning strategy for VET organizations. These objectives serve as the guiding principles that shape the direction and focus of your institution.

1. **Align with Organizational Vision and Mission**: Review your organization's vision and mission statements and identify key themes or goals that can inform your strategic objectives. Aim for synergy between digital learning efforts and broader organizational aims.
2. **Be Specific and Measurable**: Craft strategic objectives that are specific, measurable, achievable, relevant, and time-bound (SMART). Break down broad goals into specific, actionable objectives with clear metrics for success. For example, instead of aiming to "improve digital literacy of your learners," set a SMART objective such as "increase the completion rate of a specific online digital skills course by 20% within one year."

Tip: The most effective organisations prioritize strategic objectives that focus on addressing digital skill gaps and skillsets that are aligned with industry needs and trends.

3. **Foster Innovation and Adaptability**: Embrace a culture of innovation and adaptability. Include objectives that promote experimentation, piloting of new technologies, and continuous improvement cycles. Encourage feedback loops and agile methodologies to iterate and refine digital learning initiatives based on real-world insights.

Tip: Learning from other organizations in the VET sector provides valuable insights into learner expectations, best practices, and organizational strengths and weaknesses, which can inform your digital learning initiatives.

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Setting the ground – 5 Principles

1. **Define your role and position in the field**: VET trainers and institutions are responsible for shaping the future of society and the economy, by developing its most valuable resource: human capital. VET trainers are ambassadors of this idea striving to maintain the flame of learning alive.
2. **Consider your target groups**: Education is a continuous procedure that never ends. However, many adults are still not willing to participate in any form of education and training and that is for a good reason.

Have in mind: *Some learners do not have positive past learning experiences, which can make it hard for them to feel confident in the classroom. They might have felt inferior, disappointed, or struggled academically before.*

3. **Understand your organization's digital capacity**: There is a plethora of educational technology available in the marketplace. VET organizations should prioritize digital solutions that best enable their strategic goals. They should also strike a balance between investing in expertise and outsourcing, while building internal digital capacity.

4. **Promote digitalization**: Prioritize digital literacy and skills development among educators, staff, and learners. Provide training, workshops, and resources to enhance digital competencies and ensure everyone can effectively use digital tools and technologies. Next, identify suitable digital tools, platforms, and technologies to support teaching, learning, and administrative processes. Choose solutions that align with pedagogical principles, accessibility standards, and data privacy regulations.

5. **Foster a culture of change**: Changes do not happen overnight, and neither does increasing the digital capacity of your VET organization. It's important to consider the human aspect of change, which includes identifying and addressing the concerns and resistance of the people who will be impacted by the change.

Developing a Digital Action Plan

Following the above gathered knowledge and the below practical steps and guidelines, VET organizations can develop a Digital Action Plan that enhances teaching and learning experiences, improves digital outcomes, and prepares learners for success in the digital age.

Step 1: Conduct needs analysis

Conduct a thorough analysis of the current state using methods such as SWOT analysis. This allows you to identify the gap between your current and desired state, to spot areas for improvement and opportunities to leverage digital technologies.

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When analysing needs, you can assess your organisation's digital maturity level, such as:

1. The goals you have for the digital future of your organisation.
2. How you use digital tools to perform activities or deliver services to your target audience.
3. How you use digital tools to get information about your target audience (i.e., trainers, learners) - their digital expectations, preferences, behaviours.
4. How you use digital channels to reach out to your target audience.
5. How you encourage new technology in your organisation.
6. How you protect your digital information with clear processes that you update.

Tip: *Explore best practices and innovative approaches to digital education and training both within and outside the VET sector. Learn from successful initiatives and case studies to inform your Digital Action Plan.*

Step 2: Recruit the digital transformation team

Identify the key stakeholders, including employees, learners, parents, and community partners, through a stakeholder mapping process considering, their influence and interest in the organisation's operations.

Ministries/governmental bodies/local authorities, higher education institutions, research hubs and student associations, businesses, youth organizations/social groups/NGOs, consultancy organizations/career advising services/employment offices, VET & adult education organizations all surround your organization and should be mapped.

Next, form a digital transformation committee with representatives from these key stakeholder groups, ensuring diverse input and alignment with the organisation's broader objectives.

Step 3: Set clear objectives

Based on the results from your needs analysis, develop a clear vision statement and strategic SMART objectives. You can form objectives that focus on the aspects you are lagging behind and/or the four dimensions of digital transformation: learner experience, operational processes, business models and organisational culture and leadership. For example, you may focus on enhancing the learning experience, improving operational efficiency, and fostering a culture of innovation.

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Step 4: Identify Resources

Assess the resources, including financial, technological, and human resources, needed to implement the Digital Action Plan effectively. Determine how these resources can be allocated and optimized to support digital initiatives.

Step 5: Plan and prioritise tasks

Create a detailed roadmap outlining the steps, activities, and timelines for implementing digital initiatives. You also need to establish the timeline and milestones and set a system for monitoring progress and updating the strategy.

Consider factors such as curriculum development, teacher training, infrastructure upgrades, and stakeholder engagement.

Prioritise the initiatives and allocate the resources accordingly (e.g., for staff training). Prioritisation allows you to focus on the most urgent and beneficial tasks required.

Step 6: Monitor and evaluate the digital action plan

Establish mechanisms for monitoring and evaluating the implementation of the Digital Action Plan. Set and track Key Performance Indicators*, gather feedback, and assess the impact of digital initiatives on learning outcomes and organizational objectives.

Monitoring and evaluating your digital action plan are a systematic process. It starts with regular check-ins, scheduled at intervals that suit the nature and scope of your plan, such as weekly or monthly. This way you can review progress and make adjustments as necessary. Based on the feedback, refine the Digital Action Plan, remain flexible and adaptive to emerging technologies, trends, and opportunities in digital education and training.

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*KPIs (Key Performance Indicators)

KPIs are quantifiable measures to monitor and evaluate your progress towards the desired objectives. In the context of a digital action plan, KPIs might include average internet speed available to users, number of digital devices (e.g., computers, tablets) per student, percentage of available devices actively used for educational purposes, assessments of teachers' digital skills pre- and post-training, percentage of students completing digital courses or modules, usage statistics of digital learning platforms (e.g., logins, time spent on platform, interaction rates), quantity of digital learning resources (e.g., e-books, online modules) developed and used, feedback from students and teachers on the quality and relevance of digital content, percentage of teachers integrating digital tools and methodologies into their teaching and surveys and feedback from students on the effectiveness of digital teaching methods.

Have in mind: *The key to a successful digital action plan is not just setting and implementing strategies, but also consistently monitoring and adjusting them based on performance data and feedback.*

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Recommendations of Key Directives and Policies

VET organisations could consider adapting to their local context the following and other relevant key initiatives to enrich the digital learning strategies and address specific challenges and priorities related to digital education, skills development, and workforce readiness in their area.

1. **European Skills Agenda**: The European Skills Agenda focuses on ensuring that individuals have the necessary skills for employment and lifelong learning, promoting upskilling and reskilling to meet evolving labour market demands.
2. **Digital Education Action Plan 2021-2027**: This action plan outlines strategies for promoting high-quality, inclusive digital education in Europe, with objectives such as improving digital skills, fostering digital literacy, and leveraging technology for innovative teaching and learning approaches.
3. **Pact for Skills**: The Pact for Skills is a European initiative aimed at mobilizing stakeholders to address skills mismatches and shortages, promoting collaboration between industry, education, and training providers to develop relevant skills.
4. **VET Recommendation (Recommendation on Vocational Education and Training)**: This recommendation provides guidelines for modernizing and improving vocational education and training systems across Europe, emphasizing the importance of quality, relevance, and inclusiveness.
5. **EUROPASS Learning Model**: EUROPASS is a framework that facilitates the documentation and presentation of skills and qualifications across Europe, supporting individuals in showcasing their competences and enhancing their employability.

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Good practices

1. **The European Digital Competence Framework for Citizens (DigComp 2.2)** is a tool to assess and improve people's digital skills. It outlines different levels of digital competence, from basic to advanced, and provides guidelines for individuals to develop their skills in areas such as using digital tools, information processing, communication, content creation, safety, and problem-solving in digital environments.

2. **The Digital Competence Wheel** is a framework that provides an overview of digital competences and offers concrete tools for enhancing them. It is based on the principles of the Digital Competence Framework (DigComp) and serves as a practical guide for individuals and organizations to assess and improve their digital skills.

3. **The European Framework for the Digital Competence of Educators (DigCompEdu)** is a framework developed to define what it means for educators to be digitally competent. It provides guidelines and a reference framework to support the development of digital competences specifically tailored for educators across all levels of education, including early childhood, primary, secondary, vocational, and adult education.

4. **DigCompOrg Framework** is a model that outlines the digital competences required for organizational contexts. It consists of seven key elements and fifteen sub-elements that are applicable across all education sectors. Additionally, it allows for the inclusion of sector-specific elements and sub-elements. This framework emphasizes the interconnectedness and interdependence of digital competences within organizational settings.

5. **The European Digital Credentials Infrastructure (EDCI)** is a system developed by the European Commission to enhance the recognition and verification of qualifications and learning achievements across Europe. It provides a secure and efficient platform for issuing, storing, and authenticating digital credentials, such as diplomas, certificates, and other learning achievements. This infrastructure aims to promote transparency and facilitate the mobility of individuals within the European Union by ensuring the validity and credibility of their educational credentials across borders.

6. **SELFIE for work-based learning (WBL)** is a free online tool designed to support Vocational Education and Training (VET) schools and companies in optimizing the use of digital technologies for teaching, learning, and training in work-based learning contexts. It allows VET professionals to assess their current digital practices and receive a tailored report with recommendations for improvement. By answering a series of questions, users can generate a digital action plan to enhance their use of technology in work-based learning settings.

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B.2. Infrastructure and equipment

Recommendations for Digital Infrastructure and Equipment

The role of infrastructure in enabling innovative practices and expanding learning boundaries is paramount. From physical to virtual spaces, infrastructure plays a crucial role in fostering openness and flexibility, allowing for learning anytime, anywhere, and on any device.

As VET organizations strive to modernize their practices and enhance learning outcomes, the design, adaptation, and reorganization of both virtual and physical learning spaces become imperative. This section focuses on recommendations tailored to VET organizations, aiming to bolster their infrastructure and equipment to support the seamless integration of digital learning initiatives. By ensuring reliability, security, and scalability in their digital services, VET organizations can pave the way for comprehensive and transformative learning experiences.

***Digital infrastructure**: The organization possesses the requisite skills and procedures to efficiently identify, choose, and implement various digital learning tools suitable for its size and requirements. It's crucial that customer-facing services operate smoothly for both staff and students. Achieving this necessitates the ubiquitous presence of essential ICT infrastructure and services such as networks, portals, Wi-Fi, and cloud systems.*

1. **Improve Internet Connectivity**

- Improve basic connectivity by conducting thorough assessments of the current internet infrastructure and identifying key areas for improvement.
- Collaborate with local internet service providers (ISPs) to enhance broadband infrastructure or engage with government authorities and ISPs to negotiate better internet packages and prioritize educational institutions for connectivity upgrades.
- Explore satellite internet services as an alternative, especially for remote areas where traditional broadband infrastructure is challenging to implement.
- Establish community-based networks where local resources are pooled to create a shared internet service, often more cost-effective and reliable in underserved areas.
- Provide mobile data solutions, such as portable Wi-Fi hotspots or data packages, to ensure students and teachers have internet access.

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2. **Provide and Manage Digital Devices**

- Form partnerships with government bodies, international organizations, and tech companies to secure donations or subsidized rates for essential devices like laptops, tablets, and smartphones.
- Establish programmes to collect, refurbish, and redistribute used devices to students and staff.
- Set up a dedicated IT support team to provide ongoing maintenance, troubleshooting, and user training.

3. **Provide a Range of Digital Learning Technologies**

- Offer a diverse range of digital learning technologies, tools, applications, content, and services to support anytime/anyplace learning.
- Take necessary steps to ensure accessibility across various settings, including formal and informal learning environments, and support one-to-one deployment initiatives.

4. **Optimize Physical Learning Spaces for Digital Learning**

***Physical and Virtual Learning Spaces**: The design of both physical and virtual learning environments can subtly communicate the prevailing educational approach and have a significant impact on teaching and learning methods. Hence, the educational institution prioritizes careful planning and organization of these spaces to ensure they support the desired teaching and learning objectives effectively.*

- Assess the current layout and furnishings of physical learning spaces to ensure they align with the affordances of digital-age learning.
- Design classrooms that can be easily reconfigured for different teaching methods, from traditional setups to collaborative and digital learning stations.
- Ensure physical spaces are ergonomic and accessible to all students, including those with disabilities.
- Incorporate flexible seating arrangements and adaptable technology infrastructure to accommodate diverse learning activities.
- Equip physical spaces with a wide range of digital tools, content, and services to support interactive and collaborative learning experiences. For example, equip classrooms with projectors, interactive whiteboards, and other digital tools to facilitate interactive and engaging learning experiences.
- Ensure classrooms have adequate electrical outlets and charging stations for all digital devices.
- Implement secure storage for digital devices to prevent theft and damage and establish safety protocols for using digital devices and ensure all staff and students are trained on cybersecurity best practices.

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5. **Enhance Virtual Learning Spaces**

   - Customize virtual learning environments (VLEs) and learning platforms to reflect the organization's pedagogic approach and goals.
   - Ensure that virtual spaces provide a seamless transition from face-to-face settings, maintaining consistency in the learning experience.
   - Prioritize usability, accessibility, and user experience in the design or customization of virtual learning spaces to promote engagement and effective learning interactions.

6. **Support Bring Your Own Device (BYOD) Approaches**

   - Develop and implement a Bring Your Own Device (BYOD) policy that outlines guidelines for staff and students to use their own devices.
   - Facilitate connectivity to organizational services and resources, allowing users to seamlessly integrate personal devices into their learning and working environments.

7. **Implement an Acceptable Usage Policy**

   - Develop and enforce an Acceptable Usage Policy (AUP) that outlines guidelines for the use of digital technologies, content, platforms, and services by staff and students.
   - Ensure that the AUP is formally adopted by the organization and clearly communicated to all users to promote responsible and safe digital usage.

8. **Address Risks of Inequality and Digital Inclusion**

   - Implement measures to address inequalities among socio-economically disadvantaged students in access to digital devices and connectivity.
   - Ensure special provisions are in place to meet the needs of these students, mitigating the risk of exacerbating existing disparities.

9. **Utilize Assistive Technologies for Special Needs**

   - Implement assistive technologies and appropriate digital content organization-wide to support students requiring additional or differentiated learning support.

10. **Provide Technical and User Support**

    - Integrate technical and user support into digital infrastructure planning to ensure reliable performance and seamless access to digital technologies.
    - Consider establishing a Service Level Agreement (SLA) to define the scope of support services provided, either internally or by external service providers.

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11. **Protect Privacy, Confidentiality, and Safety**

- Develop and enforce policies, procedures, and safeguards to protect individual privacy, confidentiality, and safety in digital learning environments.
- Ensure compliance with legal obligations related to data protection and licenses, and provide formal guidelines for staff and students.

12. **Establish an Operational Plan for Core ICT Backbone and Services**

- Develop a viable operational plan for the procurement, maintenance, interoperability, and security of core ICT backbone and services tailored to the organization's scale and needs.

13. **Plan Procurement Effectively**

- Consider general and specialist requirements in procurement planning, including discipline-specific software and high-end workstations.
- Utilize whole-life costing models to inform procurement decisions regarding networks, equipment, and software.

14. **Leverage Pedagogical and Technical Expertise**

- Ensure access to both pedagogical and technical expertise, either internally or through external resources.
- Utilize this expertise to inform decision-making processes regarding investments in digital technologies, resources, and services.

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B.3. Digital Operations and Communication

The section below provides several recommendations for protocols and tools for effective communication and management of digital learning activities within VET centres, including administrative processes and workflows.

The Internet and digital tools have simplified communication and collaboration. Various tools facilitate connectivity (connecting people), communication (exchanging information), coordination (managing activities and resources), and collaboration (working together towards a common goal) among individuals or teams.

Following the European Framework for the Digital Competence of Educators, educators' digital competence encompasses their proficiency in utilising digital technologies to enhance teaching and facilitate professional interactions with colleagues, learners, parents, and other stakeholders. Additionally, it includes their commitment to personal professional development and contributing to the collective advancement and continuous innovation within the organization and the teaching profession. This is the focus of Area 1.

Figure 1: Educators' Professional Engagement (Redecker, 2017, p. 19)

Communication protocols and tools

Following standardized procedures and guidelines for communication inside and outside the VET centres, it is pivotal for ensuring that all communications are clear, efficient and effective, hence supporting a productive learning environment. Using the proper communication protocols, VET centres can ensure timely responses and facilitate effective interactions between staff, learners, and external partners.

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Types of Communication

Communication can be synchronous (i.e. online chat, WebEx, Microsoft Teams) or asynchronous (i.e. forum).

Asynchronous communication *can include email announcement and discussion forums that are available in virtual learning environments (e.g. Moodle) and give the chance to the participants to respond asynchronously at their convenience and their own time with a possible delay in the response time.*

Synchronous communication *can include tools like tele-conferencing platforms and online chat tools that allow for real-time communication and immediate interaction between two or more people.*

To enhance the digital organizational communication, VET centres can establish the use of both asynchronous and synchronous communication tools among teachers, trainers and learners as well as with third parties (e.g. collaborators, the wider communication, learners' families, etc.).

Asynchronous communication

a. **Emails and Groups**: Email constitutes the primary communication medium in organisations. Each email is sent to a specific individual, entity or group of people and it requires an email address (e.g. Username@domain.Top-Level-Domain). To maintain a cohesive visual identity, it is highly recommended that employees of the same organisation use the same domain that is usually the organisation's name. For the effective use of emails, users should use clear subject and relevant content and response in an appropriate time. Best practices include using professional language and checking the grammar and syntax. It is also important to confirm receipt of emails, especially those that require feedback and actions. For organisations using Gmail, Google groups can serve as an effective internal communication tool that supports both asynchronous communication and real-time chatting, facilitating online discussions among team members.

VET centres could use email for formal communication while for internal informal communication, they could use synchronous communication tools, like Microsoft Teams, Google Meet, etc.

b. **Discussion Forums:** Tools such as forums embedded in Virtual Learning Environments (VLE) like Moodle, and Discourse, can facilitate threaded discussions in which participants can post and reply to questions and messages on their own time. Within VLE such as Moodle, a weekly discussion forum could be an effective way of engaging learners in pedagogical discussion. To encourage learners to participate in discussion forums, teachers could post

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questions and prompt learners to respond. Teachers should encourage learners to contribute to discussion as well as open new discussion topics and communicate with each other.

c. **Messaging Apps**: Platforms such as Slack and Microsoft Teams (available through Office 365) have features that can support asynchronous communication through direct messages, channels, and threads.

Platforms like Slack and Microsoft Teams are recommended for prompt communication between the staff of VET centres. Such platforms could be effective in providing updates when working in teams or collaborating on tasks.

d. **Video-sharing platforms**: Tools such as YouTube, and Vimeo, provide users with the opportunity to share recorded video content that viewers can watch at their convenience. The users can easily comment on these videos and interact with learners.

VET providers and trainers can use these video-sharing platforms by creating and sharing online videos including case studies, events, training, etc. It could be also utilized as a tool for co-creating value between teachers and learners. Flipgrid is also a free video-sharing and social learning platform designed for educational purposes and allows teachers to facilitate video discussions, by creating and sharing short video responses on various topics.

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e. **Webpages/weblogs/blogs**: Webpages or websites are locations on the Internet that can be accessed through a browser. Websites can be created using various tools such as WordPress. Within the VLE, trainers and teachers could use Wiki, which is a collaborative tool that provides learners with the opportunity to co-create and modify one or more pages of course-related materials.
Weblogs, or blogs, are similar to websites but feature content organized by the date of publication, with the most recent posts appearing first. Blogs typically allow users to comment on the posts.

VET centres, teachers and trainers can create a website either using external tools or by selecting the appropriate tools within the VLE (e.g. Wiki) to showcase learners' projects, initiatives, training material, etc. A dedicated team can be assigned to moderate the webpage.

f. **Newsletter**: A newsletter is an email communication from a company or organization containing information relevant to its customers, such as product updates, promotions, or upcoming events. Individuals interested in staying informed about the organization can subscribe to receive the newsletter.

VET providers or trainers can be involved in creating a monthly newsletter to present learners' work or initiatives to a broader audience.

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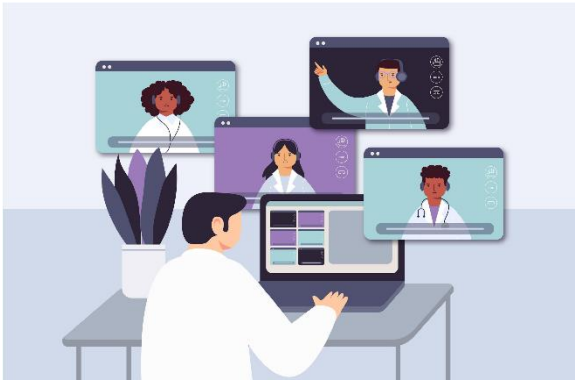
Synchronous communication

Instant messaging and videoconferencing can be used as effective tools for internal communication.

a. **Video Conferencing Platforms**: These platforms allow teachers and trainers to meet with learners in real-time from anywhere as long as there is internet access. Some common examples are Zoom, Microsoft Teams, WebEx and Skype. Good practices for using video conferencing platforms effectively include scheduling meetings in advance, and setting clear agendas. To engage participants, VET trainers and teachers could use interactive features like polls and breakout rooms and ensure technical readiness before meetings.



Video conferencing platforms could be used ideally for remote communication with external partners and internally, accommodating diverse work schedules. VET providers/trainers/teachers could use video conferencing platforms to schedule weekly or monthly meetings to address any arising issues.

b. **Instant Messaging Apps**: Instant messaging is a form of communication where individuals communicate with each other online through text messages (chat). Such platforms like Slack, Microsoft Teams, and WhatsApp allow users to exchange text messages, files, and other multimedia in real-time, either one-on-one or in group chats. Chat is also available within VLE such as Moodle. This feature enables participants to have text-based, real-time synchronous discussions. Chats are useful for learners who participate in online courses to regularly connect and share experiences with others taking the same course but in a different location, for learners temporarily unable to attend in person to contact their teacher to catch up on work, etc.

VET centres can use instant messaging apps for internal, casual communication within their centre. Teachers and trainers can establish a group chat for the whole centre or class or smaller groups of learners based on corresponding needs.

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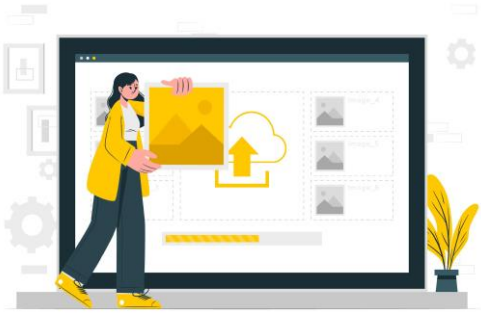
Management of digital learning activities

Here we will explore the use of cloud services, as well as VLEs, which can support VET providers, teachers and trainers in the management of digital learning activities. The integration of cloud services and VLEs plays a crucial role in supporting VET providers, teachers, and trainers in managing digital learning activities effectively. These tools not only streamline administrative tasks but also enhance the overall learning experience for learners.

a. **Cloud services**: Cloud services like Google Drive, Dropbox, and Microsoft OneDrive offer centralised platforms for storing and sharing resources and materials. Standardising file storage practices ensures that all documents, course materials, and multimedia resources are organised systematically, making them easily accessible to both educators and learners. In this cloud environment, they can upload and download data, view and edit it, and even collaborate with others in real-time using various tools.

   I. Microsoft OneDrive: OneDrive is Microsoft's cloud storage service. It supports the storage of all file types. After a short loading time for synchronization, files become available on all devices where OneDrive is installed. For example, teachers and trainers can easily upload a file to OneDrive and share it with their learners, allowing everyone to work on the same file simultaneously. Additionally, large files that cannot be directly uploaded to the Moodle platform due to size limitations can be uploaded to OneDrive. Trainers and teachers can then share these files and post the relevant link on the Moodle platform.



   II. Google Drive: It is Google's cloud storage service and thus it requires a Google account. On Google Drive, VET trainers and teachers can create text documents, spreadsheets, and presentations, as well as upload and edit files online. They can also share individual documents or folders with others. Editing is synchronous, meaning multiple people can work on a file simultaneously. Google Drive can be accessed via a PC using a browser or on a smartphone and tablet using an app.

VET trainers and teachers can utilize shared Google Drives to enhance collaboration and streamline resource sharing across the organization. For instance, they can create a dedicated drive for the digital strategy committee to collaborate on plans and documents,

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and another drive for sharing teaching materials like lesson plans and assignments. This approach facilitates easy access to resources, supports project collaboration, and aids professional development by sharing research and training materials.

b. **Virtual learning environments (VLE)**: Platforms like Moodle, and Blackboard, provide comprehensive solutions for managing digital learning activities. They support course creation, assignment submissions, grading, and feedback mechanisms.
    i. Moodle is a free learning platform that can provide VET centres with the opportunity to create and host courses online. Within Moodle, users can be enrolled either as learners or as teachers or as trainers. Teachers and trainers can develop course content and activities, such as assignments and tests, which learners can complete. All participants' activities are tracked and recorded within the system.

VET centres can use both the internal and external tools available in the online learning platforms-VLE. For example, in Moodle trainers and teachers can create a discussion forum, add a chat activity, etc. WebEx is also integrated with Moodle and thus, trainers and teachers can host online meeting sessions within the platform.

c. **Project management tools:** Structured planning can be challenging, particularly when multiple people are involved. However, several online tools can facilitate planning and information sharing and manage projects and workflows efficiently. One popular example is Trello.

VET centres can use a planning tool like Teamwork, Trello, Freedcamp etc., to organise all internal tasks, particularly those that trainers need to complete within specific timeframes. Effective project management involves setting clear objectives, defining roles and responsibilities, and regularly updating project statuses. Trainers could be also encouraged to use this tool for collaboration, such as sharing teaching materials and coordinating efforts.

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Interactivity

Online interactivity refers to the communication that happens between people, technology and educational material (learners and their peers, learners and their teachers, learners and tools to facilitate teaching and learning). Research supports this approach, demonstrating a positive correlation between online interactivity, learner satisfaction, and learning outcomes. In other words, the more engaged learners are with each other, the teacher and the material, the better they learn and the more satisfied they feel with the learning experience.

Interaction methods and tools provide additional possibilities for the learner to deepen their understanding on the subject matter, e.g. test questions, answer formats, simulators, etc. Some examples of digital tools that could be used for enhancing interactivity are Padlet (for asynchronous discussions, sharing and summarizing ideas, and opinions), AhaSlides (for voting in real time) and Kahoot (a game-based learner response system).

VET centres should encourage the use of the right amount of interactivity in online settings based on the needs of the target groups (e.g. teachers, learners) and the learning objectives.

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B.4. Continuous professional development

Training Strategies for Continuous Professional Development (CPD)

Based on the desk and field research conducted in the Tunisian VET centres participating in the DISCOVER project, VET trainers and teachers require ongoing support and opportunities for professional development tailored to digital teaching methods. While there are positive aspects, such as discussions on CPD needs and opportunities for teacher collaboration, there is a need to ensure that CPD opportunities specifically focus on digital technologies.

Collaboration among educators within schools and participation in external professional development programmes can facilitate the sharing of best practices and innovative teaching approaches.

Continuous Professional Development (CPD) is the ongoing process of maintaining, as well as enhancing, existing and acquiring new skills, knowledge, and experience required, typically through short and/or long training programmes. This can help professionals stay relevant and competent throughout their careers. It is a commitment to lifelong learning that benefits both the individuals and their profession as a whole.

It can have the form of both formal and informal learning. **Formal Learning** is when the acquiring of knowledge and skills is being intentionally through planned learning activities, where some form of learning support is present (e.g. adult literacy, courses organised by civil society organisations), while **informal learning** includes acquiring knowledge and skills unintentionally through daily activities, not designed especially for teaching or learning (e.g. learning through the social media).

For their continuous professional development, VET teachers and trainers can:

- Attend courses/seminars either in person or online
- Attend formal qualification programmes

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- Organize observation visits to other schools, business premises, public or non-governmental organisations
- Conduct peer and/or self-observation and coaching
- Participate in a network of teachers and conferences
- Read professional literature

As educators are lifelong learners whose professional needs evolve and change throughout the years, VET centres should first identify the teachers' current skill level and clearly understand their teachers' **needs** and **gaps** in using digital technologies to determine the **appropriate form** of training that can have a positive impact on them. This can be achieved by **assessing** the teachers' **current situation,** using both **quantitative** and **qualitative** data.

Quantitative Data

VET centres can adopt the established frameworks for technology-enhanced learning and digital transformation. Some examples are the below:

- **TPACK framework**: Proposed by Lee Shulman in 1986. VET providers can use this framework to assess teachers in the three core areas of technological knowledge, pedagogical knowledge and content knowledge and identify needs and gaps, in order to be able to support them accordingly. The model can also be used to evaluate the results after the supporting mechanisms are implemented.

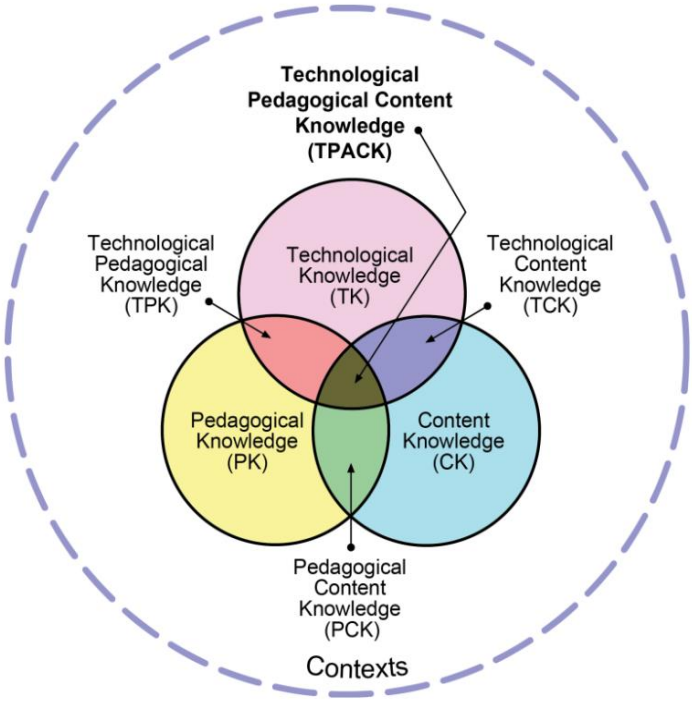

Figure 2: TPACK model
http://tpack.org

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- **DigCompEdu:** Developed by the European Commission (2017). It allows identifying the existing gaps and establishing the relevant supporting mechanisms. VET providers can use the specific framework to assess the digital skills of teachers and identify their training needs based on the general categories of a) educators' professional competences, b) educators' pedagogic competences and c) learners' competences.
- **SELFIE Tool**: Developed by the European Commission. It can be used by VET centres to promote VET self-reflection on digital readiness and the use of technologies for innovation in teaching and learning as well as by teachers to identify their strengths and gaps on their digital pedagogical and professional competences.

Qualitative Data

To conduct a need analysis VET centres could also collect qualitative data. This can be done by interviews or focus groups. Round table discussions with representatives of all stakeholders could be also used. VET centres could collect further insights on the opportunities that teachers already had and the additional that they might need, on their main professional development needs and the support that they need. Their input is important for determining the support mechanisms to be incorporated into the VET centres' digital transformation plan and for making informed decisions.

Based on the analysis and interpretation of the quantitative and qualitative data collected, VET centres can identify their teachers and trainers' needs to achieve their full potential. Below are some important steps to be taken into consideration before implementing the professional development plan:

- **Set SMART Goals**: Define what the teachers/trainers would like to achieve through CPD, aligning with their needs and the organisation's goals.

- **Choose training format**: Decide how teachers/trainers will learn. There are a number of options available both online and face-to-face and VET centres should choose the most appropriate:
    - Provide **in-house training** with planned activities such as induction courses, training material, video-based learning, observation and hands-on-activities.
    - Offer **mentorship programmes** that can enhance the creation of communities of practice, in which teachers could share and reflect on different approaches to find solutions to common problems. A good idea would also be to assign as a mentor a more experienced teacher to support a less experienced teacher. This could be further supported when VET centres are engaged in collaborations with other networks.
    - Build internal **expert groups** or facilitate access to **expert knowledge** and technical support.
    - Collaboration between **VET centres** and **external stakeholders** can enhance the professional development of teachers and trainers in various ways. Specifically, collaboration with **other schools and universities** can assist teachers in sharing experiences with educators from different

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institutions, which in turn allows them to learn innovative teaching methods, curriculum development approaches, and assessment strategies. Furthermore, collaboration with **research centres and teams** can provide access to the latest pedagogical research and best practices grounded in evidence. In addition, working with **policymakers** can ensure alignment of VET programmes with current industry needs and national skills development plans. Collaboration with **NGOs** can provide access to training programs on specific topics such as inclusion strategies, or catering to diverse learning needs. At the same time, working with **teachers' unions** allows for sharing challenges and advocating for resources and support programmes for professional development. Lastly, signing partnerships with **local and/or international providers** (e.g. Microsoft), can offer support for digital tools and online settings.

  - Organise **webinars** in which experts and speakers provide their experience on the field.
  - Enroll in **MOOCs** launched by other Universities that are free and online.

- **Implement the Plan**: Based on the strategy selected, VET centres should develop internal training or involve teachers and trainers in external programmes like online communities for CPD.

- **Monitor & Evaluate**: Track progress through regular meetings and encourage knowledge sharing among teachers and trainers.

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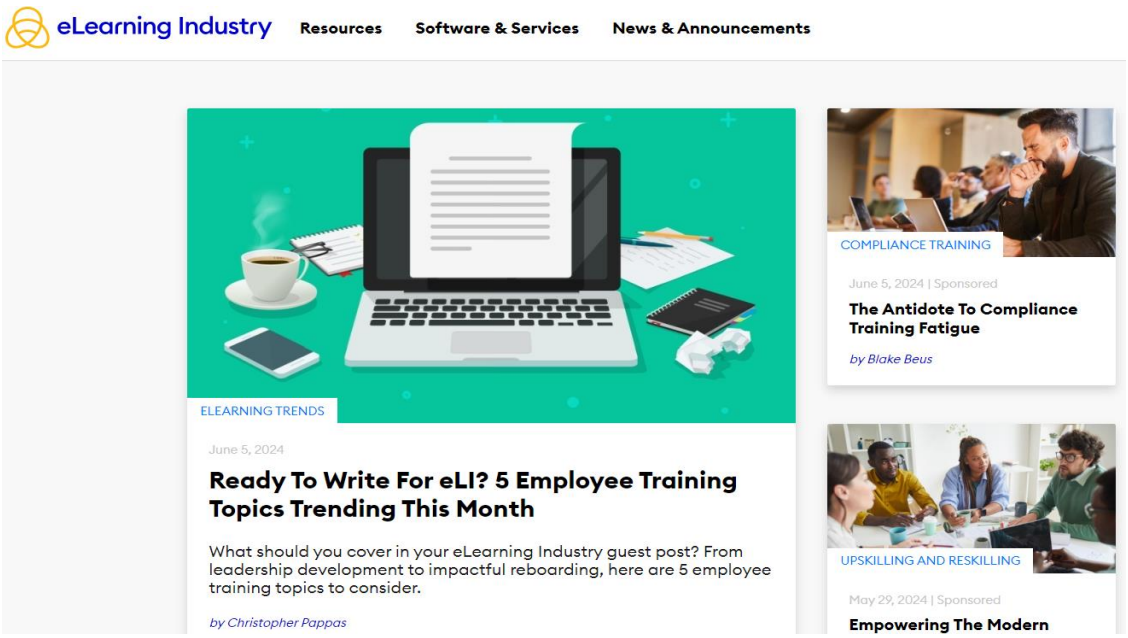
Good practices & Examples

There are several online platforms for exchanging best practices, and professional development of teachers. Specifically, the **e-learning Industry** is a leading publishing platform that delivers inspiring, industry-specific content to eLearning professionals. It also offers interesting resources to help teachers use connectivity to create interactive and high-quality learning.



At the same time several **Erasmus+ programmes** provide training packages and open educational resources (OER) that aim to provide VET providers with the tools needed to digitize as well as modernize their practices and become more resilient to rapid technological and labour market changes.

One such example is the **GROOVE project**. Alongside the **Khan Academy** and **Ideasgym Academy**, numerous online platforms have emerged as valuable resources for educators. These platforms provide STEM-oriented lessons alongside training and support for teachers and trainers.

Similarly, there is a number of successful examples of **MOOCs**, in which VET trainers and teachers can enrol for free and attend online, including **EdX**, **Coursera**, **LinkedIn Learning**, and **Future Learn**.

Several European countries are also implementing initiatives to equip teachers with digital tools and skills. In **Greece**, the Ministry of Education offers **online training to teachers** and access to existing digital platforms like **e-books** and **e-learning solutions**. In **Bulgaria**, the "Education for Tomorrow" project promotes digitalization in schools by utilizing cloud technologies, OER and personalized learning approaches. In **Cyprus**, the Cyprus Pedagogical Institute (CPI) provides digital learning environments (e.g. Office 365) and resource repositories. Additionally, programmes such as "Digital

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Competences Development for Educators" and the **Innovative Schools project** aim to strengthen teachers' digital skills for effective technology integration in teaching and learning.

Effective Continuing Professional Development (CPD) for VET educators requires a paradigm shift towards a dynamic and personalized model. This necessitates the incorporation of flexible learning pathways, diverse delivery methods, and just-in-time support tailored to individual needs and learning styles. Moreover, fostering collaboration and emphasizing deep pedagogical reasoning within the CPD framework will equip teams to seamlessly integrate technology and innovative teaching methods.

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B.5. Teaching and learning online

In today's digital age, a wealth of educational resources is available online, offering numerous options for enriching and enhancing online teaching and learning. This section dives into strategies for selecting, creating, and managing these digital educational resources (DERs) effectively, discovering valuable Open Educational Resources (OERs), and developing a critical eye for evaluating DERs to ensure they align perfectly with corresponding teaching goals and the needs of the learners.

Teaching in online contexts

When teaching online, VET trainers and teachers should:

1. **Establish a strong online presence**, since learners may not see you in person:

    - **Be Accessible**: Regularly check and respond to emails to ensure learners feel supported.
    - **Stay Active**: Post questions at the start of each topic or lecture week and provide general feedback to show their involvement.
    - **Encourage Participation**: Prompt learners to contribute to discussion forums. Teachers can either start a conversation/add a discussion topic or join the conversation to maintain engagement without overshadowing learners' interactions.
2. **Motivate and engage leaners** as to increase their participation in the course:

    - **Create Interactive Content**: Use videos, compelling assignments, and interactive elements to make the course content engaging.
    - **Foster Engagement**: Interesting and varied course materials will encourage learners to log in more frequently, stay engaged longer, and enhance their learning outcomes.

Requirements for an Effective Online Teaching

1. **Deepen the subject knowledge**: VET trainers and teachers should ensure they have a deep understanding of their subject and related course materials.
2. **Understand your audience**:

    - **Introductions:** Use discussion forums or video introductions to get to know the learners. Platforms like Moodle offer built-in video recording options. Try to connect with their hobbies and experiences. Teachers and trainers could also use online meetings through WebEx, Microsoft Teams, Zoom, etc. for synchronous communication with the learners. During these sessions, teachers could dedicate time for brief introductions (depending on the number of learners).

    - **Questionnaires:** Send out questionnaires to gather relevant information about the learners. The questionnaire could include questions like the below:

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- Outline your goals for this course (what do you hope to achieve?).
- Explain your preferred learning methods (e.g., learning styles, what techniques work best for you?).

3. **Familiarize yourself with tools and equipment**

- **Choose carefully:**
  - Select the mode of delivery that suits their content best (e.g., video, audio, webinars).
  - Use the most appropriate tools for creating course materials.
  - Ensure you are comfortable with the tools you choose.

Open Educational Resources (OER)

Following a brief definition provided by UNESCO, Open Educational Resources (OER) are teaching, learning and research materials in any medium – digital or otherwise – that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions.

Some examples of OER are the following:

- **Comprehensive University Courses:** Includes all materials such as readings, lecture videos, homework assignments, and lecture notes.
- **Interactive Mini-Lessons and Simulations:** Focused on specific subjects like math or physics, providing engaging, hands-on learning experiences.
- **Standards-Aligned Lesson Plans and Activities:** Ready-to-use worksheets, lesson plans, and activities that meet educational standards.
- **Peer-Reviewed Digital Textbooks:** High-quality digital textbooks, supplemented with additional supporting materials.

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By following the links below, VET trainers and teachers can easily find OER courses as well as course material:

- OER Commons - It is free of use and includes a lot of different materials. Users can search by subject and educational level.
- MIT Open Courseware - MIT Open Courseware is a free and open collection of material from thousands of MIT courses, covering the entire MIT curriculum.
- OER in EDUCAUSE - It includes websites with OER resources in HE (e.g. OpenStax, Free Online Course Materials, WikiEducator, The World Digital Library (WDL).

In addition, several books, textbooks, images and multimedia can be found as OER and be easily used by VET teachers and trainers during their teaching:

OER Books & Textbooks

- Open Edition Books - A web platform for books in the humanities and social sciences.
- Open Stax - A library with free books on business, college success, computer science, humanities, math, nursing, science and social sciences.

Copyright Free Media

Below, VET teachers and trainers can find images and multimedia to enrich their teaching:

- Wikipedia Commons
- Pixabay
- Unsplash
- FreeSound

OERs offer a variety of free learning materials. However, **copyright** plays a crucial role. OERs have licenses (like Creative Commons) that dictate how they can be used and modified. Always check the license, credit creators, and be mindful of restrictions. Additionally, to get the most out of OERs, choose resources that align with corresponding curriculum and learning objectives. Look for high-quality materials from reputable sources with clear licensing and accessibility features for all learners. Finally, consider how adaptable the OER is to corresponding teaching style, learner needs and learning objectives.

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Accessibility and inclusion

Each learner is unique and brings his/her own background, strengths, needs, and interests. Therefore, curriculum should provide genuine learning opportunities for each and every learner, with or without disabilities.

Universal design for learning (UDL) adapts the learning environment to ensure every learner can succeed. By minimizing barriers and maximizing learning opportunities, VET teachers and trainers can create inclusive classrooms that cater to diverse needs. UDL consists of three core elements: Engagement, Representation, and Action & Expression:

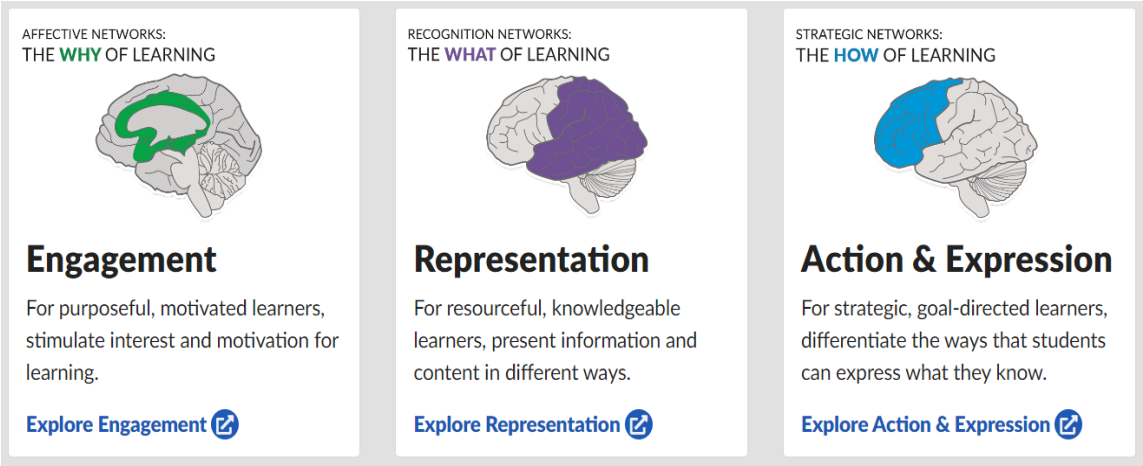

Figure 3
https://www.cast.org/impact/universal-design-for-learning-udl

1. Provide multiple means of **Engagement**, by providing the learners with options that engage them and keep their interest. Give learners choices to fuel their interests and autonomy and help them risk mistakes and learn from them. But remember, always keep in mind the learning goal.
2. Provide multiple means of **Representation**, by showing the information in different ways. Present content and information in multiple media and provide varied support. Use graphics and animations, highlight the critical features, activate background knowledge, and support vocabulary so that learners can acquire the knowledge being taught
3. Provide multiple means of **Action & Expression**, by allowing the learners to approach learning tasks and demonstrate what they know in different ways. Give learners plenty of options for expressing what they know and provide models, feedback, and support for their different level of proficiency.

In practice, VET teachers and trainers should:

- **Present Content in Multiple Formats:** Provide information in various ways, such as through visuals, auditory tools, and interactive media. This includes graphics, animations, and highlighting key features to support vocabulary and concept comprehension. Accompany lectures with slides to provide learners

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with the option of accessing the information visually and help them in identifying key points, taking notes, and processing aural information.

- **Activate Background Knowledge:** Help learners connect prior knowledge to new learning objectives by pre-teaching concepts and using advanced organizers.
- **Ensure Accessibility:** Make all materials accessible to learners with disabilities by using text-to-speech tools, screen readers, closed captions, and alternative text descriptions for images. In addition to printed text, provide learners with the option of accessing the information through digital text for easier visual access or speech conversion.
- **Create Relevant Learning Experiences:** Use culturally significant activities, group work, and peer tutoring to make learning more relevant and engaging.
- **Foster Collaboration:** Encourage learners to communicate and collaborate through various interactive activities and tools.
- **Offer Diverse Ways to Demonstrate Knowledge:** Provide multiple options for learners to express their understanding, such as written reports, video presentations, projects, and interactive activities.
- **Support Varied Proficiency Levels:** Give learners models, feedback, and support tailored to their proficiency levels, allowing them to choose how they complete assignments.
- **Utilize Different Media for Responses:** Allow learners to respond using different formats, such as text, speech, film, or music, to better showcase their learning.

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B.6. Educators' digital and pedagogical competences

The competencies of educators in the modern educational environment go well beyond conventional pedagogical skills. Specifically, digital competencies have become essential tools that influence how teachers use technology to improve student learning and instruction. These competencies cover a wide range of abilities and fields of knowledge, all of which are essential for equipping teachers to successfully negotiate the challenges of the digital age.

In particular, digital competences are now crucial instruments that impact how educators employ technology to enhance instruction and learning for students. These competencies encompass a broad range of skills and subject areas, all of which are necessary to prepare educators to successfully navigate the demands of the digital age.

Educators need to develop and exhibit these digital competencies in order to participate fully in society on a personal and professional level as citizens. Acting as mentors, their job is to teach students how to use digital technology creatively and critically so they may confidently traverse the digital world.

But educators are more than just role models—their primary responsibility is to facilitate learning. To effectively use digital technology in their teaching methods, educators need particular digital competencies in addition to the basic digital competencies needed for life and work.

Digital Competences

Technical Skills, Information Management, Communication, Safety

In order for educators to effectively traverse the digital world, they need to possess a variety of skills and knowledge areas known as digital competencies. Technical proficiency, information management, communication, and safety procedures are some of these competencies.

- **Technical Skills:** Teachers must be adept at using a variety of digital tools and technology that are pertinent to their line of work. This entails being acquainted with both software and technology, such as interactive whiteboards, PCs, and tablets, which are used for managing data, producing educational materials, and fostering communication.
- **Information Management:** To enhance teaching and learning, educators need to be proficient in the management and organization of digital information. Information literacy, the capacity to assess internet sources critically, and familiarity with copyright and intellectual property regulations are some of the abilities required for this.
- **Communication:** Teachers must communicate effectively in the digital sphere in order to interact with students, parents, and other educators.

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- **Safety:** In order to safeguard both themselves and their pupils online, educators must be knowledgeable about digital safety and security concerns. This entails being aware of privacy regulations, data protection techniques, and safe internet usage rules.

With a total of **22 competencies**, the DigCompEdu framework separates educators' digital competency into six categories:

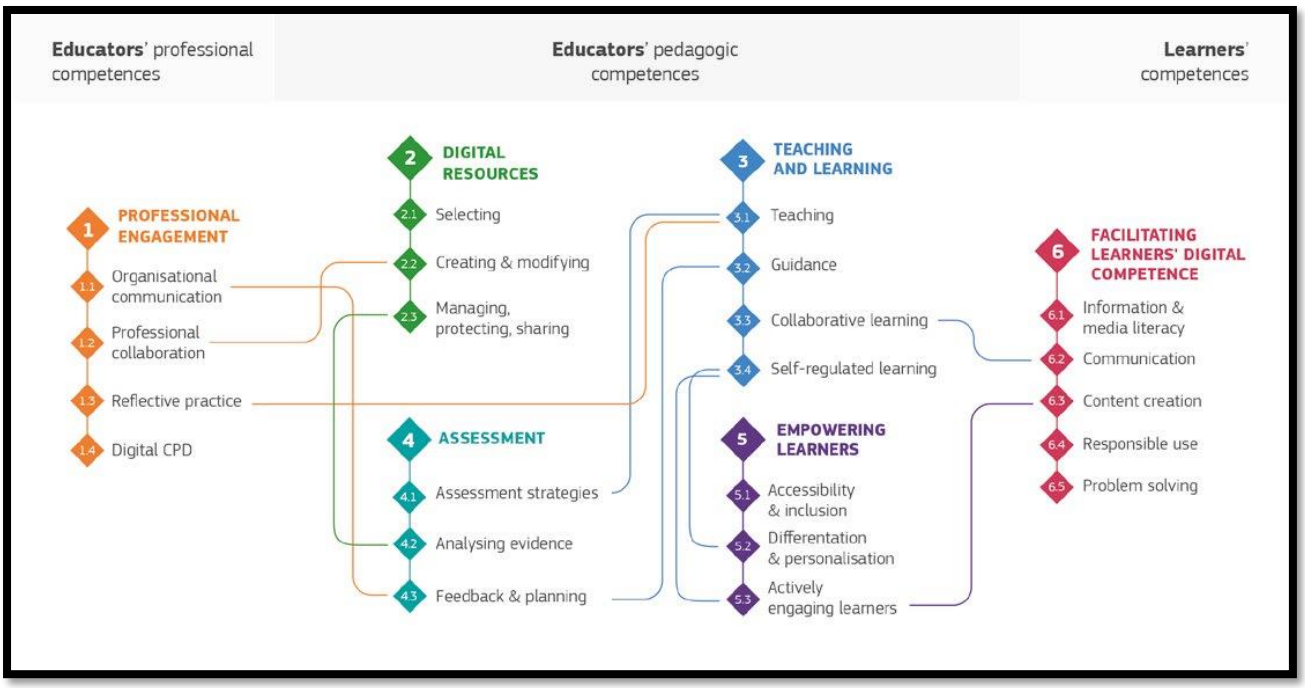

Figure 4: DigCompEdu competences and their connections
https://publications.jrc.ec.europa.eu/repository/handle/JRC107466

An overview of the DigCompEdu Framework

The six main domains of the DigCompEdu framework define the digital pedagogical competency of teachers and students. In order to promote effective, inclusive, and creative teaching and learning practices, these domains offer a thorough framework for comprehending and evaluating digital skills.

With regard to creating digital competency models, educators at all levels—including those in early childhood education, higher education, vocational training, and non-formal learning contexts—can refer to the DigCompEdu Framework. It promotes adjustment to particular situations and requirements. The framework was created after lengthy deliberations with practitioners and experts with the goal of achieving agreement on the essential components and domains of digital competency for educators and their advancement.

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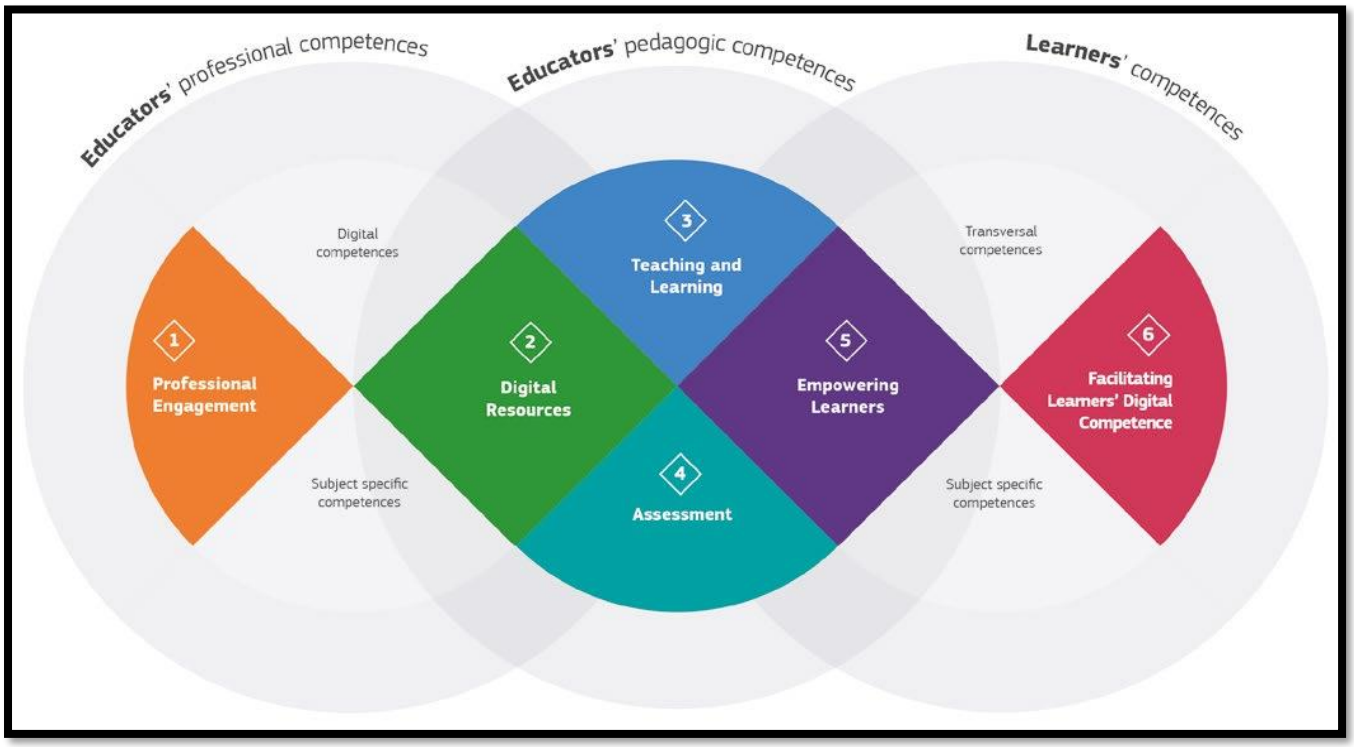

Figure 5: DigCompEdu areas and scope
https://publications.jrc.ec.europa.eu/repository/handle/JRC107466

The DigCompEdu framework, which is centred around Areas 2–5, outlines the digital pedagogic competency of educators in six important domains. These domains encompass the digital competencies that teachers need to cultivate effective, inclusive, and creative teaching and learning approaches.

Area 1 is on the wider professional context of educators, including how they utilize digital technologies in their interactions with parents, learners, colleagues, and other stakeholders. It also has to do with how educators grow professionally on an individual basis and how they contribute to the business as a whole.

Areas 2 and 3 are based on the phases that are present in every educational process, whether or not technology is used to support it. They go into detail on how teachers might use digital technologies to efficiently plan, carry out, and evaluate teaching and learning activities.

Overview of Educators' Pedagogical Competences

Key Competence: Pedagogical Content Knowledge, Classroom Management, Differentiation

Pedagogical approaches are fundamental to successful education. Therefore, in order to master the art of teaching and learning, educators need to possess strong pedagogical competencies. These pedagogical abilities, when combined with digital competencies, are critical to creating dynamic and influential learning environments.

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- **Pedagogical Content Knowledge**: To effectively engage students and aid learning, educators must possess both in-depth subject matter expertise and knowledge of successful teaching practices.

- **Classroom Management**: Managing student conduct, fostering respect and collaboration among peers, and establishing a welcoming and inclusive learning environment are all components of effective classroom management.

- **Differentiation**: To fulfil the various learning needs of learners, educators must be able to differentiate their instruction. This entails modifying instructional strategies, resources, and evaluation protocols to account for the diverse skills, passions, and learning preferences of the students.

Pedagogical approaches are fundamental to successful education. Therefore, in order to master the art of teaching and learning, educators need to possess strong pedagogical competencies. These pedagogical abilities, when combined with digital competences, are critical to creating dynamic and influential learning environments.

Additionally, in recent years, there has been a significant surge in school and governmental activities related to digital skills, remote learning, and blended learning, particularly in response to the COVID-19 epidemic. These projects consist of several elements, such as the technical part (tools), conceptual models, and mitigating actions. Tools that are designed for real-world use include electronic libraries, self-assessment tools, and e-learning platforms. Furthermore, a lot of nations have created or are using a variety of frameworks and principles to direct digital teaching and learning.

Recommendations for Teaching and Learning

Digital technology integration is becoming more and more common in today's quickly changing educational environment, changing the way that teaching and learning are conducted. It is critical that educators embrace efficient tactics that make use of digital resources to improve learners' engagement, understanding, and overall learning outcomes as they traverse this digital change. This section contains our main recommendations, which are meant to enable teachers to maximize their instructional strategies by carefully combining digital tools and pedagogical techniques.

These suggestions cover a wide range of topics, from the creation and selection of digital materials to the promotion of cooperative and independent learning environments. By following these suggestions, educators may fully utilize digital technology to build inclusive, dynamic learning environments that cater to the varied requirements of today's learners.

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Recommendations for Digital Sources

Create effective search techniques to locate online materials for education. Select appropriate digital resources keeping in mind the unique learning context and goals. Consider carefully the legitimacy and dependability of online materials and sources.

Take into account any potential limitations on using or reusing digital resources, including those pertaining to copyright, file types, technical specifications, accessibility, and legal obligations. Evaluate how well the selected pedagogical approach, the learner group's competency levels, and the learning purpose are addressed by the digital resources.

Recommendations for Producing and Adapting Digital Content

When allowed, alter and modify already-existing digital content. When allowed, combine and mix already-existing digital resources, or portions of them. Produce fresh online learning materials. Work together to create digital tools for education.

Suggestions for Teaching

To increase efficacy, plan and incorporate digital tools and resources into educational procedures. Appropriately manage and plan digital instructional interventions. Try out and create new teaching formats and pedagogical strategies.

Make use of technology in the classroom to enhance instruction, such as mobile devices and electronic whiteboards. Lessons should be designed to include digital activities that are learner- and teacher-led and that support the learning goal. Organize interactions, activities, and learning sessions in a virtual setting. Organize and oversee communication, cooperation, and content in a digital setting.

Suggestions regarding Guidance

Make use of digital communication methods to answer students' queries and worries as soon as possible, especially when it comes to homework. When creating educational activities for digital environments, consider the support that students may require. Engage in dialogue with students in online learning environments. Observe how students behave online throughout class and offer assistance as needed.

Suggestions for Cooperative Education

Encourage and improve student collaboration with digital tools. Give students the opportunity to use digital tools for group projects to improve communication, teamwork, and knowledge generation. Conduct cooperative education exercises with digital tools, resources, or information techniques. For collaborative learning activities, use online platforms like blogs, wikis, or learning management systems. Encourage students to collaborate and share knowledge by utilizing digital tools. Assist students in creating collaborative knowledge in online settings.

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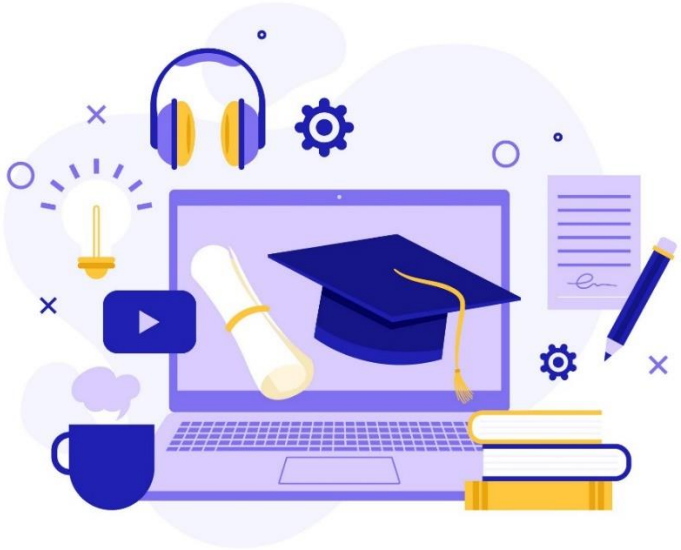
Self-Regulated Learning Activities

Make use of digital tools to help learners plan their own learning, such as blogs, diaries, and planning software. Provide students with the tools they need to gather proof and document their learning with digital tools like images, videos, and audio files. Use digital tools to record and display students' work, such as ePortfolios or learner blogs. Utilizing digital technology to support self-regulated learning processes, learners can plan, monitor, and reflect on their learning as well as share insights, create original solutions, and show progress.



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B.7. Digital and Online assessment practices

Definition and Significance of Digital and Online Assessment

The use of digital evaluations in VET has completely changed the nature of education and offers several advantages for both teachers and students. These tests, which are made possible by digital platforms and technologies, offer a quick and easy way to gauge how well students are grasping the material and demonstrating their ability.

The flexibility of digital examinations in VET is one of its main benefits. Digital exams, in contrast to traditional pen-and-paper exams, can be given remotely, enabling students to finish them from any location with an internet connection. For adult learners and working professionals participating in VET programs, this flexibility is especially helpful because it allows them to manage their studies around their current schedules and obligations.

Additionally, instantaneous feedback mechanisms offered by digital examinations give students rapid insights into their performance and opportunities for growth. Learners can obtain fast feedback on their assessments via automated grading systems and real-time scoring. This allows them to modify their learning tactics and advance at their own speed.

The flexibility of digital assessments in VET to suit a range of learning preferences and styles is another important advantage. To meet the needs of diverse learners, digital assessment platforms can provide a variety of question styles, such as multiple-choice, short response, and interactive simulations. To further improve the learning process, these platforms can offer customized assessments based on the strengths, limitations, and learning goals of each individual student.

Moreover, digital evaluations encourage the incorporation of multimedia components into evaluation tasks, including pictures, videos, and interactive graphs. Multimedia information can be used in examinations to mimic real-world situations and useful applications, giving students the chance to show off their abilities in real-world settings.

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Digital assessments aid teachers and training providers in addition to improving students' learning experiences. By streamlining the evaluation process, these tests cut down on the time and materials needed for administration and grading. Teachers can identify areas for instructional improvement, obtain insights into student performance trends, and adjust their teaching tactics by utilizing the data analytics and reporting elements found in digital assessment platforms.

Types of Digital and Online Assessment

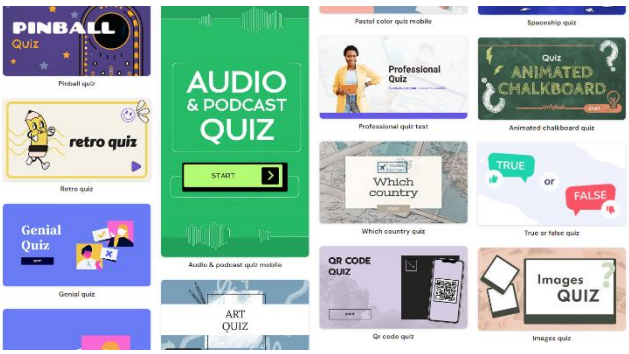
Different assessment techniques can be applied in online learning environments such as Moodle to improve learning results, interactivity, and engagement. These techniques, which are frequently included as platform features or plugins, give teachers a variety of choices for assessing the knowledge and development of their students. The following are a few common assessment techniques seen in online learning environments:

Online quizzes: With multiple-choice, true/false, short answer, and other interactive assessment options, educators can build dynamic tests. These tests include the option to be automatically graded, giving students immediate feedback and sparing teachers from having to spend time administering tests.

Assignments: The Assignments function lets teachers give students written assignments, projects, or chores that they can turn in electronically via the website. Teachers may grade assignments and provide feedback right within the application, which makes communication and assessment tracking easier.

Forums and Discussions: By enabling students to have asynchronous conversations, discussion forums encourage group learning and critical thinking. Teachers can evaluate students' contributions to forum conversations in order to determine their level of participation, critical thinking abilities, and content knowledge.

Peer evaluation: Students can assess and comment on each other's assignments or work using peer evaluation tools. This approach lessens the workload for instructors by encouraging peer learning, improving communication and critical thinking abilities, and fostering peer learning.



Interactive material – gamification: Multimedia presentations, interactive tests, and simulations are examples of interactive material that can be included into online learning environments. These interactive components hold students' attention, help them remember ideas, and offer formative assessment opportunities. (https://genially.com/templates/gamification/quiz/)

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Rubrics: With the aid of rubric tools, educators can produce grading rubrics that specify standards and requirements for tasks or projects. Rubrics ensure uniformity in grading across examinations, expedite the grading process, and make assessment criteria apparent to students.

Learning Analytics: Student engagement, performance, and progress data are tracked and analyzed by learning analytics systems that are integrated into online platforms. These insights can help teachers identify kids who are at danger, tailor their instruction, and enhance student learning.

Through the utilization of these assessment techniques in online learning environments such as Moodle, instructors can design dynamic, captivating, and productive learning programs that encourage student accomplishments.

Self-assessment resource on the Jobs and Skills Digital Platform

Through the Digital Skills and Jobs Platform, users can use a self-assessment tool for digital competency. The application, which is based on DigComp, is accessible in all EU languages. Users can find out more about their digital abilities and, most importantly, what has to be done to improve them by taking the exam. The platform will suggest learning opportunities and courses that help achieve this objective, along with the digital skills that a user should focus on.

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B.8. Learner profile – digital competences

Overview: Digital Competence Framework for Citizens

The Digital Competence Framework for Citizens, or DigComp, serves as a unified reference to define and describe essential digital skills. It is an EU-wide instrument designed to enhance citizens' digital competences, aid policy-makers in crafting supportive policies, and guide education and training initiatives for specific groups. DigComp version 2.2 is presented in this Toolkit along with updated examples of the required knowledge, abilities, and attitudes. In order to make the framework's implementation easier, it also gathers important reference materials.

Understanding DigComp and its Application in VET

The DigComp proposal has two distinct but connected outputs:

- a self-assessment grid that suggests the Digital Competence categories and three competency level descriptions;
- a framework that lists all the relevant competencies for each area and includes information on each one, such as a basic description, three-level descriptors, examples of the knowledge, attitudes, and skills, and examples of how it can be applied to various scenarios.

Comprehensive competences covering five domains and subtopics are provided by the Digital Competence Framework for Citizens. Every competence offers thorough justifications of what can be accomplished at various skill levels and how to modify distinct instances.

How should I read it?

The term "dimension" used in the DigComp refers to the arrangement of the framework, or more specifically, how the framework's content is presented. Five dimensions are identified in the DigComp, which are presented below.

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Dimension 1: Recognized areas of digital competences &

Dimension 2: Relevant competences that fall under each area

AREAS AND COMPETENCES	
DIMENSION 1 **Competences areas**	**DIMENSION 2** **Competences**
1. Information	1.1 Browsing, searching and filtering information 1.2 Evaluating information 1.3 Storing and retrieving information
2. Communication	2.1 Interacting through technologies 2.2 Sharing information and content 2.3 Engaging in online citizenship 2.4 Collaborating through digital channels 2.5 Netiquette 2.6 Managing digital identity
3. Content creation	3.1 Developing content 3.2 Integrating and re-elaborating 3.3 Copyright and licences 3.4 Programming
4. Safety	4.1 Protecting devices 4.2 Protecting personal data 4.3 Protecting health 4.4 Protecting the environment
5. Problem solving	5.1 Solving technical problems 5.2 Identifying needs and technological responses 5.3 Innovating and creatively using technology 5.4 Identifying digital competence gaps

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FOUNDATION	*1*	At basic level and with guidance, I can...
	2	At basic level and with autonomy and appropriate guidance where needed, I can...
INTERMEDIATE	*3*	On my own and solving straightforward problems, I can…
	4	Independently, according to my own needs, and solving well-defined and non-routine problems, I can...
ADVANCED	*5*	As well as guiding others, I can:
	6	At advanced level, according to my own needs and those of others, and in complex contexts, I can...
HIGHLY SPECIALISED	*7*	At highly specialised level, I can…
	8	At the most advanced and specialised level, I can...

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Knowledge	Examples of knowledge, skills and attitudes
Skills	Examples of knowledge, skills and attitudes
Attitudes	Examples of knowledge, skills and attitudes

The examples of knowledge, skills, and attitudes are grouped together using graphic symbols: a book represents knowledge, a bicycle represents abilities, and a heart represents attitude.

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Dimension 5 - The purpose (or context) in which each particular competence can be applied /

Illustrations of how the competency can be applied to various scenarios

The DigComp offers examples of learning and employment. Leisure, social, purchasing and selling, education, employment, citizenship, and well-being are additional characteristics that may also be taken into account. Here is an example, using the competence area of Communication and the competence of Interacting through technologies:

Dimension 1 Competence area	**Communication**			
Dimension 2 Competence title and description	**2.1 Interacting through technologies** To communicate using a range of digital tools and apps, to comprehend the distribution, display, and management of digital communication, to recognize acceptable digital communication practices, to make reference to various communication formats, and to adjust communication techniques and approaches for the target audience.			
Dimension 3 Proficiency levels	**FOUNDATION** I can engage with others using basic aspects of communication tools, (e.g. email, chat,)	**INTERMEDIATE** I can communicate with people using a variety of digital tools by utilizing more sophisticated capabilities of tools for communication (such as a cell phone, digital tools)	**ADVANCED** I can adopt a variety of platforms for online communication effectively. I'm able to use digital communication channels and methods that are most appropriate for the job	**HIGHLY SPECIALISED** I can create solutions to complex problems with limited definition that are related to interacting through digital technologies and digital communication means.

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Dimension 4 Knowledge examples	**Knowledge:** Aware that many communication services and digital environments (e.g. social media) use mechanisms such as nudging, gamification and manipulation to influence user behaviour. **Skills:** Knows how to use a variety of videoconferencing features (e.g. moderating a session, recording audio and video) **Attitudes:** Willing to listen to others and to engage in online conversations with confidence, clarity and reciprocity, both in personal and social contexts.
Dimension 5 Application	**INTERMEDIATE** **EMPLOYMENT SCENARIO: organise an event** By myself: • I can interact with participants and other colleagues using my corporate email account app on my smartphone in order to organise an event for my company. • I can also select options available in my email suite to organise the event, such as sending calendar invitations. • I can fix problems, e.g. an incorrect email address. **LEARNING SCENARIO: prepare group work with my classmates** By myself: • I can use a commonly-used chat on my smartphone (e.g. Facebook messenger or WhatsApp) to talk to my classmates and organise group work. • I can choose other digital communication means on the classroom tablet (e.g. my classroom forum) that could be useful to talk about the details of organising group work. • I can fix problems such as adding or deleting members to the chat group.

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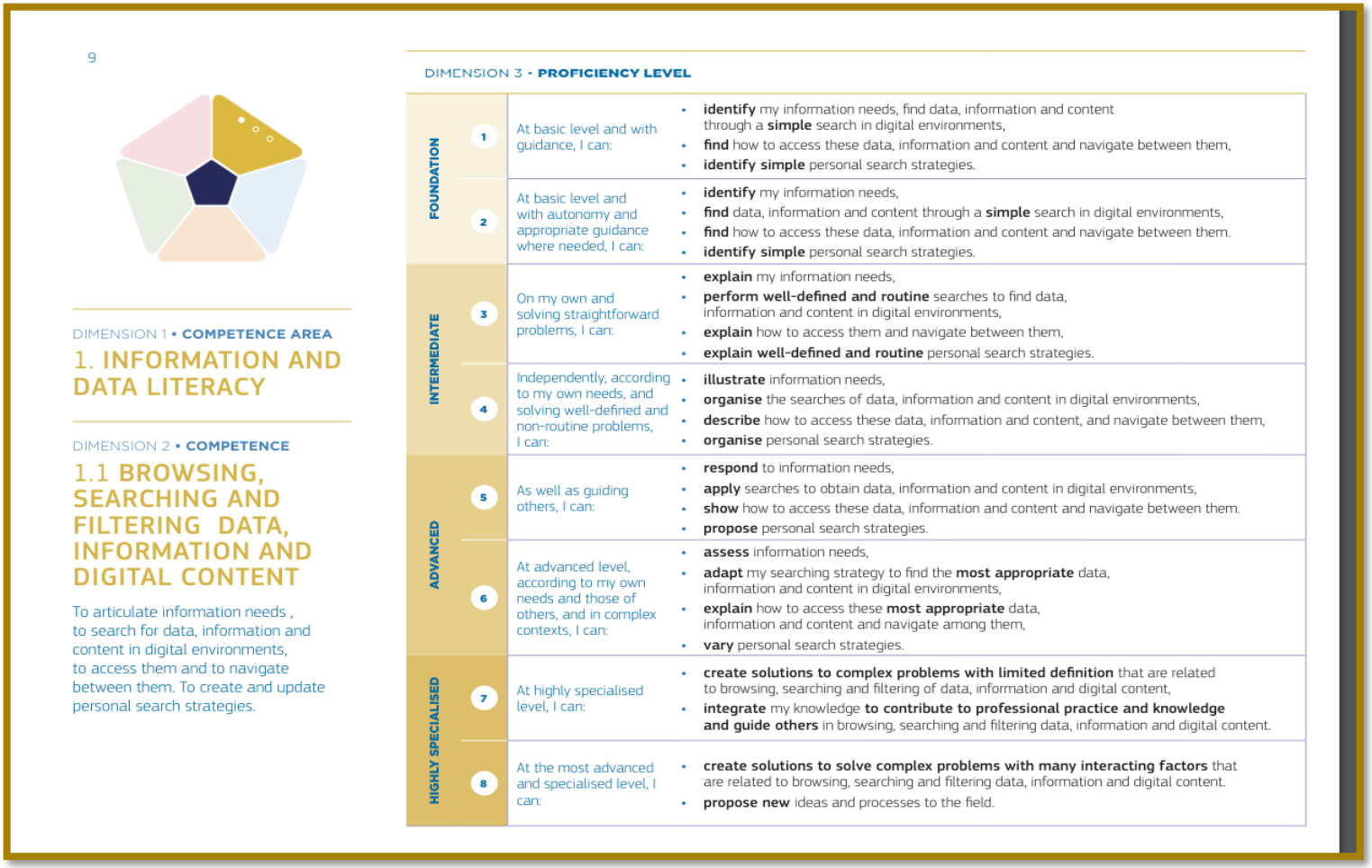

9

DIMENSION 1 • **COMPETENCE AREA**

1. INFORMATION AND DATA LITERACY

DIMENSION 2 • **COMPETENCE**

1.1 BROWSING, SEARCHING AND FILTERING DATA, INFORMATION AND DIGITAL CONTENT

To articulate information needs , to search for data, information and content in digital environments, to access them and to navigate between them. To create and update personal search strategies.

DIMENSION 3 • **PROFICIENCY LEVEL**

FOUNDATION	1	At basic level and with guidance, I can:	• **identify** my information needs, find data, information and content through a **simple** search in digital environments, • **find** how to access these data, information and content and navigate between them, • **identify simple** personal search strategies.
	2	At basic level and with autonomy and appropriate guidance where needed, I can:	• **identify** my information needs, • **find** data, information and content through a **simple** search in digital environments, • **find** how to access these data, information and content and navigate between them. • **identify simple** personal search strategies.
INTERMEDIATE	3	On my own and solving straightforward problems, I can:	• **explain** my information needs, • **perform well-defined and routine** searches to find data, information and content in digital environments, • **explain** how to access them and navigate between them, • **explain well-defined and routine** personal search strategies.
	4	Independently, according to my own needs, and solving well-defined and non-routine problems, I can:	• **illustrate** information needs, • **organise** the searches of data, information and content in digital environments, • **describe** how to access these data, information and content, and navigate between them, • **organise** personal search strategies.
ADVANCED	5	As well as guiding others, I can:	• **respond** to information needs, • **apply** searches to obtain data, information and content in digital environments, • **show** how to access these data, information and content and navigate between them. • **propose** personal search strategies.
	6	At advanced level, according to my own needs and those of others, and in complex contexts, I can:	• **assess** information needs, • **adapt** my searching strategy to find the **most appropriate** data, information and content in digital environments, • **explain** how to access these **most appropriate** data, information and content and navigate among them, • **vary** personal search strategies.
HIGHLY SPECIALISED	7	At highly specialised level, I can:	• **create solutions to complex problems with limited definition** that are related to browsing, searching and filtering of data, information and digital content, • **integrate** my knowledge **to contribute to professional practice and knowledge and guide others** in browsing, searching and filtering data, information and digital content.
	8	At the most advanced and specialised level, I can:	• **create solutions to solve complex problems with many interacting factors** that are related to browsing, searching and filtering data, information and digital content. • **propose new** ideas and processes to the field.

Figure 6: DigComp Competence Information and Data Literacy Dimension 1 & 2

https://publications.jrc.ec.europa.eu/repository/handle/JRC128415

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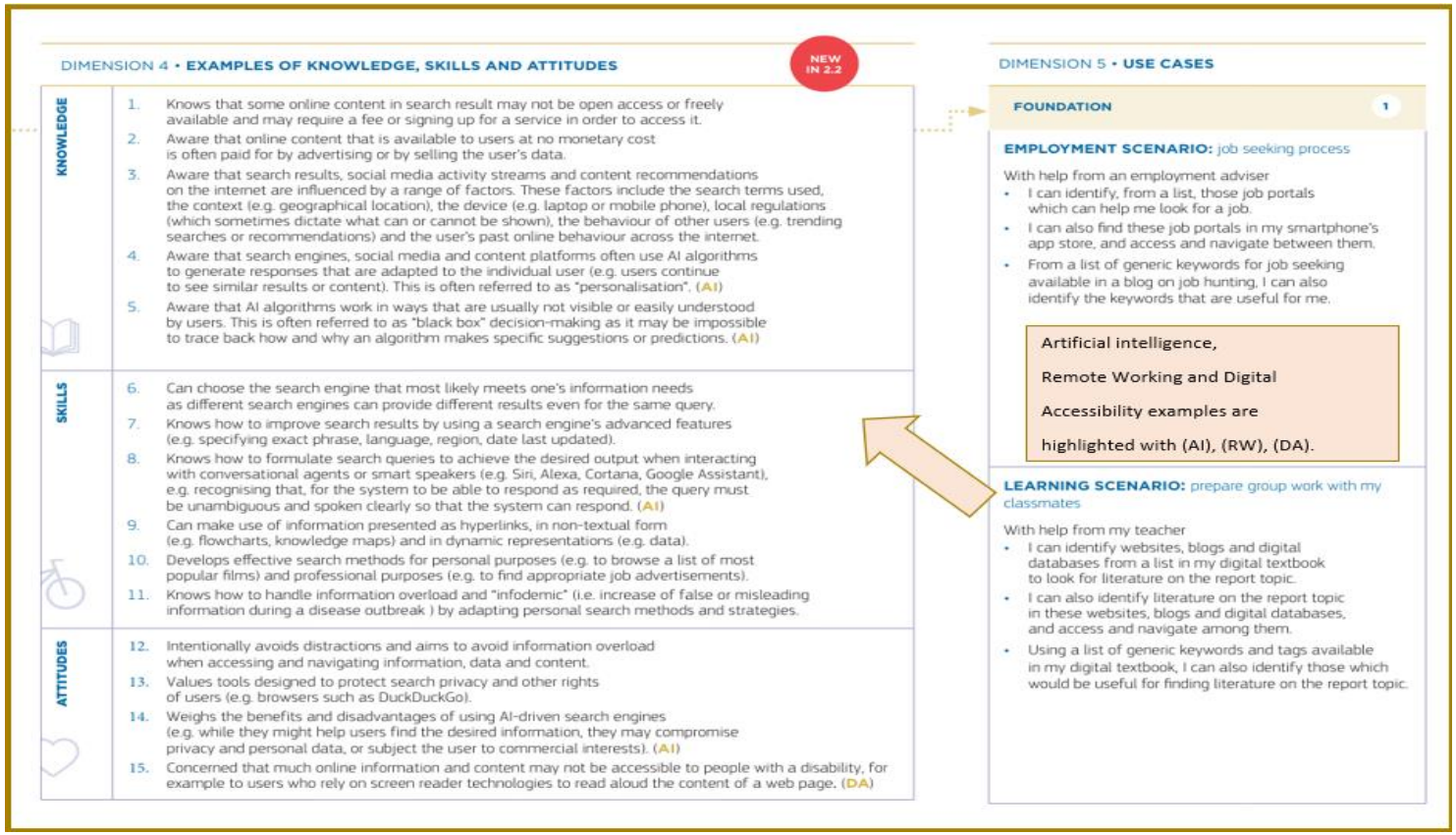

Figure 7: DigComp Competence Information and Data Literacy Dimension 4

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The aforementioned explanations should aid in accurately interpreting the different dimensions of the DigComp framework and support the integration of the framework.

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Additional resources

The following resources can provide valuable insights and guidance for the development and implementation of digital learning strategies in the Tunisian VET sector.

- **Online Learning Resources: Online Platforms** - A comprehensive list of online platforms and resources to support digital learning, provided by the European Commission.
  - Source: European Commission
  - Link: https://education.ec.europa.eu/resources-and-tools/online-learning-resources/online-platforms

- **EU Code Week -** EU Code Week is an annual initiative that aims to bring coding and digital literacy to everyone in a fun and engaging way. It includes events, resources, and activities designed to promote coding and computational thinking skills across Europe.
  - Source: European Commission
  - Link: https://codeweek.eu/

- **ICT Academy by Huawei -** Huawei's ICT Academy is a global initiative that collaborates with universities and colleges to train students in digital and ICT skills. The academy provides courses on various topics such as networking, cloud computing, and AI, which are essential for building a digitally skilled workforce.
  - Source: Huawei
  - Link: https://e.huawei.com/en/talent/ict-academy/

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