Digital Facilitator Trainer Role

THE DIGITAL FACILITATOR TRAINER ROLE

COMPETENCE MAP FOR VET TEACHERS AND TRAINERS

FROM TURKEY, SPAIN AND ROMANIA

Co-funded by the Erasmus+ Programme of the European Union

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Competence Map for VET Teachers and Trainers

From Turkey, Spain and Romania

Cooperation for innovation and exchange of good practices

VET – Vocational Education and Training

"DigiFacT"

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Abstract	The digital transformation, accelerated by the COVID-19 pandemic, cause a digital wave over the last three years, affecting all areas of society and requiring for a skills revolution in Europe, especially impacting education. The entire European public education system, from primary schools to universities, is in urgent need of modernisation. It is key to assess and improve digital education programmes, which are largely obsolete. The institutions must reform its curricula at all levels, making them responsive to changing realities and needs of the labour market. In this context, the DigiFacT project aims at providing opportunities for teachers and trainers to improve their competences, creating the figure of the Digital Facilitator Trainer, aim at supporting educators to include digital tools and processes in their teaching.

	As part of the comprehensive pedagogical methodology created by DigiFacT, we have mapped the digital competences needed in educators to implement ICT tools.
Keywords	Artificial Intelligence, Gamification, Data analytics, digital facilitator, digital tools, training, competence map, digital skills, teaching methodology, DigCompEdu.

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Contents

Introduction

The following paper has been developed as part of the DigiFacT project, co-funded by the Erasmus+ program of the EU, carried out by three organizations from Spain (Femxa Formación S.L.U.), Romania (TEAM4Excellence) and Turkey.

DigiFacT is a project cofounded by the Erasmus+ programme of the European Union, that creates and design the new figure of the **Digital Facilitator Trainer** for VET educators, which objective is using digital technologies and open pedagogies to support the development of digital competences of educators from vocational education and training. This innovative learning methodology for teaching and learning digital focuses in 3 fields: Artificial Intelligence (AI), Gamification and Data Analytics.

DigiFacT addresses a huge gap in the VET community in Europe, the lack of digital learning resources in teaching, essential to help educators to develop their own digital skills, with the ultimate purpose of engaging their students and provide them with the key knowledge and skills in the digital era.

The goal of the following report is to offer a map of digital competences required in VET educators today, following the state-of-the-art of digital education, the recommendations of the DigCompEdu Framework by the European Commission, and the prior findings of the research developed as part of the project. The developed reports by the DigiFacT consortium to be the core of the Digital Facilitator Trainer Role are the following:

- Digital tools and best practices in the use of gamification, data analytics and artificial intelligence in education – Transnational research
- The needs and gaps in digital competences of VET Educators – Assessment Report
- The needs and gaps in digital competences of VET Students – Assessment Report
- The needs and gaps in digital competences of VET providers – Interviews Report
- The Digital Facilitator Trainer Role. Guidelines for VET trainers and teachers
- The Digital Facilitator Trainer Role. Map of competencies for VET teachers and trainers

Target groups

This competence map is specially created for people who contribute directly to the educational activities and want to have a digital teaching style, such as **digital facilitator and trainers**. The map has been developed in the basis of the needs and requirements identify in the VET community, but transferable to any educational context where the teacher or trainer aims to enhance their class by improving their digital skills and usage of attractive and interactive digital tools.

It is a priority of this map and the Digital Facilitator trainer role course to provide the opportunity and the resources for trainers to became effective trainers in the digital age context, that focuses more on student learning, and not only in the transmission of knowledge.

Through this map of competencies, trainers will have strong understanding of the digital competencies required in educators following the model address by the DigiCompEdu Framework. They will be able to identify their level of skill in different areas, how this affects their teaching and how to improve it. As well as multiple examples and cases to better comprehend the situations in which improving digital skills will enhance their teaching. The trainers will be able to identify and develop specific competences apply to the fields of: Gamification, Data analytics and AI.

Map of competences for VET Educators. DigiCompEdu.

Competency mapping is the process of identifying the specific skills, knowledge, abilities, and behaviours required to operate effectively in a specific trade, profession, or job position. Competency maps are often referred to as competency profiles or skills profiles.

Specifically in the field of education, maps are how skills and competencies, or competency definitions can be aggregated to form more comprehensive skills and competencies or decomposed into component skills or competencies. Taxonomies are simple maps in the form of trees, according to the IMS Reusable Definition of Competency or Educational Objective - Best Practice and Implementation Guide[1]

Competence maps allow defining curriculum content in terms of interrelated competencies rather than in terms of fragmented or disassociated knowledge, skills, and attitudes.

The following publication constitutes a map of competencies requires in any educator to became digital facilitators and introduce digital skills, platforms, processes, and tools in their teaching to enhance the learning experience of students. It is aimed to help educators understand and asses the digital skills they required, identify their needs and gaps, and work towards improving their competencies.

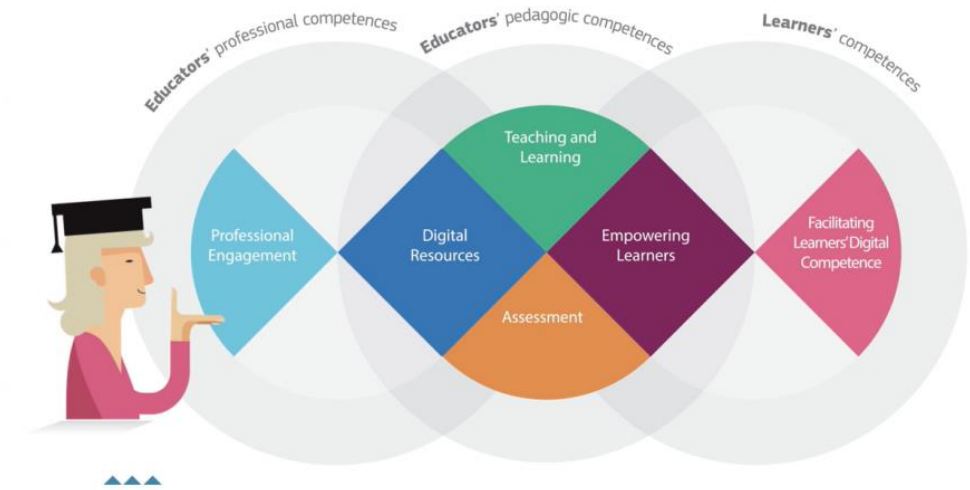
The DigiFacT consortium has chosen to use the DigCompEdu Framework as their reference document. The **European Framework for the Digital Competence of Educators (DigCompEdu)** is a scientifically sound framework describing what it means for educators to be digitally competent. It provides a general

[1] IMS, IMS Reusable Definition of Competency or Educational Objective - Best Practice and Implementation Guide, Version 1.0 Final Specification, May 2016

reference frame to support the development of educator-specific digital competences in Europe. DigCompEdu is directed towards educators at all levels of education, from early childhood to higher and adult education, including general and vocational education and training, special needs education, and non-formal learning contexts.[2] In the fields of education and training, and employment, there was a need to have a common reference framework of what it means to be digitally savvy in an increasingly globalised and digital world.

The Digital Facilitator Trainer Role competence map is divided in the 6 areas of competence, following the DigCompEdu structure:

1. Professional Engagement
2. Digital Resources
3. Teaching and Learning
4. Assessment
5. Empowering Learners
6. Facilitating Learners Digital Competence



Each has been broken down in 3 dimensions:

1. Explanation of the area of competence
2. The needs assess in the VET community of Spain, Romania, and Turkey in the specific area
3. The specific competences of educators in each area of competence

[2] Redecker, C. European Framework for the Digital Competence of Educators: DigCompEdu. Publications Office of the European Union, Luxembourg, 2017, ISBN 978-92-79-73494-6, doi:10.2760/159770, JRC107466

The competence map also provides specific skills identify during the research develop on the project in each of the fields of focus: Gamification, AI, and data analytics, apply to education and training.

Area of competence 1: Professional Engagement

Dimension 1: What is and why is important to foster Professional Engagement in educators?

The importance of considering the area of competence refer to as Professional Engagement when examining the digital competences of educators, lies in the fact that the simple use of digital skills for the learning and teaching process would not cover all the aspects of an educator's work, as we cannot ignore the rest of the professional and educational relationships that unfold. Educators have to maintain good communication with their students, families, the school and third parties involved at all times; they need to communicate and collaborate with other educators to continue to develop professionally but also to provide a better educational experience for their students; and they must use technologies to organise themselves, improve their pedagogical skills, learn new skills and adapt to changes in the educational world and the world of work.

The domain on professional engagement refers to two important areas, the engagement of the teachers with their professional development as ongoing learners. And their engagement with all parties of the teaching and learning process, meaning colleagues, their teaching institutions, students, and families. Therefore, the maintenance of participation and collaboration with all actors of the teaching community that they are a part of, with the goal of fostering students' well-being and intellectual and personal development.

Source: Edmentum blog

Summing up, the application of digital competences to the sphere of professional engagement implies the proper use of digital tools and processes to all tasks related to the professional practice of educators.

According to the DigiCompEdu Framework, 2017, we can find four main professional engagement competencies, that are required in educators to have an adequate level of digital competence, these are the following:

Organisational communication	To use digital resources to improve the communication with learners, the teaching institutions, and third parties involve in the educational and labour world. Meaning to provide better and more efficient communication, as well as to contribute with and share organizational strategies for communication.
Professional collaboration	To use ICTs to collaborate with other educators, to improve the exchanges of knowledge and experiences, and to work collaborative in the improvement of teaching techniques and pedagogical approaches.
Reflective practice	To reflect, assess, develop, and improve your own digital pedagogical practices for your individual professional development, but also in the aspects that involve learners and the educational community.

Digital Continuous Professional Development (CPD)	To use digital resources for your continuous professional development as an educator.

Dimension 2: Needs assessed in VET educators

As part of the project, individuals developing or involved in VET education were interviewed in the three countries that are part of the DigiFacT consortium: Spain, Romania, and Turkey, with the intention of gathering the real needs of VET educators in the geographical scope of this project. VET workers, NGO staff and E-learning associations have been asked a series of questions to depict their views on Professional Engagement and how it's influence by digital technologies in the day-to-day practice of an educator.

Participants in the interview answered two key questions in relation to this area of competence:

"Q1: Which digital tools do you use to contact and collaborate with colleagues, learners, and parents? How do you use them?"

The first questions refer to two of the main competences priorly announce on the area of Professional Engagement of educators: Organisational communication and professional collaboration. The interview question aims at collecting the ways in which VET educators are communicating with the learning community and collaborating with colleagues to promote the sharing of good practices and innovations.

The answers collected in the three countries depict a varied handful of digital tools for communication and learning platforms that are also use by educators to communicate and collaborate, and a series of statements in relation to what is valued by educators when choosing these tools, they can be sum up in the following characteristics:

- Tools that allow direct and fluid communication.
- Tools that prioritize effectiveness of time and costs.
- A user-friendly tool adapted to the level of the target group of students that, if possible, is already familiar to the learners.
- A balance between richness of functionalities and effectiveness (the simpler the platform, the less time is wasted in setting up the communication channel and more in the actual exchange between users).

The answers also show that it is not possible to pick a single digital tool that will be the best option for communication and collaboration with all parties of the VET community, rather, it is a question of knowing what to take into account when choosing these digital tools, i.e. knowing the characteristics of who you want to communicate with, what their level of digitisation is and what project or specific function you need this communication channel for. On the other hand, it is important to consider that it is necessary to be constantly learning and renewing your knowledge on the available tools and new communication and collaboration strategies, so that the above statement is possible.

"Q2: How do you seek information to develop your awareness of the latest digital trends in your field of education? What sources of information do you use?"

This second question aims to determine how VET educators are improving their digital pedagogical practices and how are they using digital resources for their continuous professional development.

The answers of the interviewed educators show that they implement a mixture of autonomous researching and assessing online as well as a more formal approach of attending to conference, seminars, and courses. In general, participants get their information from official sources, such as websites of the ministries, academic articles, conferences. Other secondary sources of information can be found on social media: YouTube, Facebook, LinkedIn.

One issue to point out is that most participants do not report collaboration and exchange of experiences with other educators as a way of developing reflective practice, or they report it as a secondary method. This could be an indicator of a lack of digital channels or online opportunities to help educators exchange knowledge and work together to improve their educational practice, and therefore a lack of these competences on the part of teachers.

Dimension 3: Specific Competences

Dimension 3.1: Organisational communication

Organisational communication	To use digital resources to improve the communication with learners, the teaching institutions, and third parties involve in the educational and labour world. Meaning to provide better and more efficient communication, as well as to contribute with and share organizational strategies for communication.

On one hand, individuals who have this basic competence would rarely make use of digital tools and platforms for communication, and rather prefer to support their communication with learners and the rest of the VET community with analogic solutions. The ones that do make use of it, do it in a very basic level, they are aware of some resources for digital communication and use them with some of the parties involved in the educational process, i.e., learners, families, stakeholders and third parties of the labour market, colleagues, or support staff.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, people who reach a reasonable level of competence (intermediate level) can use digital solutions for communication in an effective way and attending to the main principles of security and ethics online. They also choose different digital technologies according to the situations, meaning that they adapt to the needs of the specific target groups and purpose of the communication when choosing the communication technic and tool. In this level, educators have an extensive directory of digital resources, and they consider aspects to adapt to the needs of the recipient.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, people who are fully competent to organise communication strategies and tools, can evaluate and assess the adequacy of communication strategies, and involved other experts in the discussion. They also provide benefits to the recipients of communication that could not be achieved by using more traditional approaches to communication, meaning that they use technology to make processes with colleagues, learners and third parties easier, transparent, and more efficient. The more advance educators can also create and redesigning the adopted communication strategies to improve them for their professional practice and for the leverage of all parties involved in their educational community.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for organizational communication and reach a higher level of this specific competence, educators need to:

- To use digital technologies to communicate organisational procedures to learners, i.e., rules, appointments, events, evaluations, programmes, etc.
- To use digital technologies to inform and communicate with learners on an individual basis, meaning using technologies to facilitate the process of providing specific tutoring and recommendations for students.
- To use digital technologies to communicate with colleagues.
- To use digital technologies to communicate with third parties, i.e., experts to be invited, companies and other employers.
- To communicate via official and recognisable channels with possible learners, stakeholders, and others, i.e., corporate, or institutional social media channels and/or websites, e-learning platforms with communication tools incorporated, etc.
- To contribute to collaboratively developing and improving organisational communication strategies for your educational community.

It is important for VET educators nowadays to also be digital facilitators, as they teach in an area that must be highly adapted to the requirements of the labour markets and to have and transfer to their students the digital competences that are required in the world of work, and that employers demand from employees. As we lived in a world that is increasingly globalise and digitalise, every competence required both in education and in the labour market, such as communication skills, must now be adapted to the use of digital technologies.

Dimension 3.2: Professional collaboration.

Professional collaboration	To use ICTs to collaborate with other educators, to improve the exchanges of knowledge and experiences, and to work collaborative in the improvement of teaching techniques and pedagogical approaches.

On one hand, individuals who have this basic competence would rarely make use of digital tools and platforms for collaboration, and rather prefer to support it with analogic solutions. The ones that do make

use of it, do it in a very basic level, they are aware of some resources for digital collaboration and use them to share and exchange practices with their colleagues form their teaching institutions.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework.

On the other hand, people who reach a reasonable level of competence (intermediate level) can use digital solutions to share and exchange good practices and knowledge, and to learn new pedagogical techniques from the educational community beyond their organisation, i.e., using online communities to exchange practices. They also implement digital resources to collaboratively work on new ideas in a more effective and convenient way.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, people who are fully competent to professionally collaborate thought the usage of digital technologies constantly explore news methods and process to improve their teaching, they incorporate the acquired knowledge to their practices, and disseminate the gained experience to help others improve as well. Therefore, they are constantly improving their resources to collaborate online. They also participate in the collaborate process of creating new methods for digital collaboration and share them with their peers.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for professional collaboration and reach a higher level of this specific competence, educators need to:

- To use digital technologies to collaborate with other educators in specific projects, to improve their knowledge and practices, and with the goal of improving the collective or individual learning process of common students.
- To use digital technologies to share their experience, knowledge, and new ideas with other colleagues from their organization and beyond.
- To use digital technologies to improve their teaching by learning from other educators, new innovations and techniques that are available in digital educational communities.
- To use digital technologies to collaboratively develop educational resources and improve the learning process of students, involving their peers but also their learners' opinions and those of key stakeholders.
- To use professional collaborative networks to explore and reflect on new pedagogic practices and methods and well as to be up to date with the requirements of employers.

Dimension 3.3: Reflective practice

Reflective practice	To reflect, assess, develop, and improve your own digital pedagogical practices for your individual professional development, but also in the aspects that involve learners and the educational community.

On one hand, individuals who have this basic competence would be aware of their need to improve and assess their current skills but would have difficulties to identify specific gaps in their practice and/or would

not know where to start their professional development journey. The ones that do actively practice self-reflection and self-improvement do it in a restrictive way, meaning that they do assess their digital and pedagogical practices and improve their development but only know or access a minimum number of digital resources.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework.

On the other hand, people who reach a reasonable level of competence (intermediate level) can use techniques such as peer review and autonomous research to actively improve their digital pedagogical practices. In this level, educators experiment with new digital solutions and support their development by accessing a less or more wide range of digital sources and resources. They also seek for advice and attend to seminar and courses.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, educators who are fully competent in reflective practice, continuously enhance and improve both their digital and pedagogical skills, renew the repository of digital resources and communities where it is possible to improve their practice, and incorporate the latest innovations and research findings to their teaching. They also help peers from their organizations and beyond to improve their development as educators. The more advance educators develop research and innovative process regarding digital and pedagogical practices, that they incorporate to their teaching and continuously improve.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of reflective practice of educators by using digital technologies educators need to:

- To critically reflect on their own digital and pedagogical practice, what are their gaps and where they need to improve.
- To know where to find ways of self-development and how to research and be up to date with new and innovative techniques regarding the improvement of their practice.
- To develop a repository of resources and online communities that is in constant growth and will facilitate the process of constant improvement, as well as to invite other colleagues.
- To know and access specific training for their needs regarding digital and pedagogical opportunities.
- To collaborate with their peers to exchange knowledge and help each other in their development journey as educators and digital facilitators.
- To provide feedback and/or actively contribute to developing organisational practices, policies, and ideas on the use of digital technologies.

Dimension 3.4: Digital Continuous Professional Development (CPD)

Digital Continuous Professional Development (CPD)	To use digital resources for your continuous professional development as an educator.

On one hand, individuals who have this basic competence would make little use of the Internet to update their knowledge. The ones that do actively include online sources do it in a restrictive way, meaning they do not update the sources they research on, but they do access the internet for updating their knowledge in their subject and/or pedagogical approaches.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework.

On the other hand, people who reach a reasonable level of competence (intermediate level) can use the internet to search for seminar, conferences and courses that will allow them to continuously develop professionally. Some of them also attend to webinars and online course, access online materials and tutorials. They do not only use the internet to search for learning opportunities but engage in learning online.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, people who are fully competent in regard to digital continuous professional development (CPD) consult a wide range of resources and websites that allow them to be up to date with the latest learning opportunities, that they assess critically to learn in the most fruitful and effective way possible. They consider their teaching style, target group of learners and subject specific requirements when choosing a course, seminar or downloading some learning material. They also participate in online training and actively exchange knowledge with peers. The more advance educators are the ones that provide the continuous learning opportunities to others by creating their own online communities, websites, material and resources or courses.

In a nutshell, to improve their Digital Continuous Professional Development (CPD) capabilities and reach a higher level of this specific competence, educators need to:

- To identify training and professional development sites that provide training opportunities that are adequate for the educator specific characteristics, considering their field of teaching and their own professional development needs.
- To successfully search for sources and resources online that provide training and to assess their quality and effectiveness correctly.
- To use digital professional communities as a source of professional development.
- To use online training opportunities, e.g., seminars, video tutorials, courses, webinars, etc.
- To use digital environments to provide training opportunities for other educators, i.e., courses, seminar, blogs, websites, etc.

Area of competence 2: Digital Resources

Dimension 1: What is and why is important to introduce digital resources for educators?

The expectations of society for high-quality educational services must be considered in today's educational processes, along with trends in science and technological progress. Purposeful use of digital educational resources is perhaps one of the most efficient methods.

Digital resources are the applications (apps), software, programs, or websites that involve students in learning activities and support their learning objectives. Furthermore, digital resources can be defined as materials that have been conceived and created digitally or by converting analogue materials to a digital format.

Any instructional content that is kept on digital media is referred to as a digital educational resource. According to L. L. Bosova's (n.d.) definition of the term, "digital educational resources" means “Digital educational resources necessary for the educational process and to the digitized resources, namely, photographs, video sequences, static and dynamic models, role-playing, objects, objects of virtual reality and interactive modelling, maps, sound recordings, symbolic objects and business graphics, text documents and other educational materials selected in accordance with the content of a specific tutorial attached to lesson planning and provided with necessary methodical recommendations”.

In the framework of updating and transforming the worldwide educational environment, digitalization of education is a powerful trend. All forms of information (texts, sounds, visual pictures, videos, and other data) must be converted to a digital language to be considered digital.

Digital resources competences imply:

Selecting digital resources	To find, evaluate, and choose digital materials for education. While choosing digital resources and organizing their use, to consider the learning purpose, setting, educational method, and learner group.
Creating and modifying digital resources	To add to and make modifications to already-existing openly licensed materials and other resources where it is allowed. To develop new digital learning materials alone or in collaboration. When creating digital resources and organizing their use, to consider the learning purpose, setting, pedagogical method, and learner group.
Managing, protecting and sharing digital resources	To arrange digital information so that students, parents, and other educators may access it. Properly safeguard delicate digital material. Should adhere to and properly enforce copyright and privacy laws. To comprehend the production, usage, and correct attribution of open licenses and open educational materials.

Currently, there are several digital (educational) materials available to teachers that they may use for their lessons. Understanding this variety, effectively identifying resources that best suit their learning objectives, learner group, and teaching style, structuring the wealth of materials, establishing connections, and modifying, expanding, and developing their own digital resources to support their teaching are all critical competencies that educators must develop (DigCompEdu, 2017).

They must also understand how to utilize and handle digital information appropriately. When using, changing, and sharing materials, they must adhere to copyright laws and safeguard private information like grades or digital tests. Access to technology, professional development (PD) in the use and integration of digital resources, time constraints, limited opportunities to find and adapt digital resources, and traditional teaching methods that frequently do not prioritize equitable instruction or the support of diverse learners are additional challenges.

Digital educational resources are re-engineering the vocational education system, increasing the proportion of active learning. The immediate demands of students engaged in independent study of the course's theoretical content are addressed by the electronic educational tools provided by professors. Additionally, digital resources are created as a tool for students to use to improve their digital capabilities, which are crucial for students to have in the 21st century (Volkodav 2021).

Source: eLearning Industry

Dimension 2: Needs assessed in VET educators

Teachers today have access to a multitude of digital (educational) materials that may be used in their lessons. One of the key skills any educator needs to develop is the ability to deal with this variety, to efficiently identify resources that best suit their learning objectives, learners' group, and teaching style, to structure the wealth of materials, establish connections, and modify, add to and develop their own digital resources to support their teaching.

VET workers, NGO staff and E-learning associations have been asked a series of questions in order to depict their opinions about digital resources they choose to use in professional contexts. This section of the interview required respondents to give information on the factors that are taken into consideration when choosing digital tools: "Which aspects do you take into consideration when selecting a specific digital tool (e.g., the learning objective, the context, the learners' group)?".

The most common answers can be divided into two categories: pedagogical approach and features of educational tools.

Pedagogical approach

The majority of those who responded to this item felt that it is substantial to choose digital resources in accordance with pedagogical principles. The overall responses to this question focused on choosing educational digital tools depending on the lesson aim, such that they facilitate its achievement. Moreover, educational digital tools are chosen in conformity with learners' needs and characteristics: age, preferences, previous knowledge and existing digital skills. Another interviewee alluded to the notion of "autonomous learning" that describes educational digital tools that allow students to learn without trainers' directions.

Features of educational tools

In response to the question, most of those surveyed indicated that accessibility is one of the key principles when choosing an educational digital tool. In addition to this, the price of the educational digital tools is vital, the favourite ones being those which are free. As well, it is major that all the students can access the digital resources, no matter the devices they possess or the Internet connection they have. Furthermore, the majority opted for digital resources with user-friendly interface. In the end, another aspect that is taken into consideration when choosing educational tools is its language. When both categories (trainers and students) have language skills, then they have access to a larger number of educational resources.

It can be seen from the data above that choosing digital resources is not a simple decision. It must respond to a series of characteristics to be accessible for both teacher and students. As a teacher, it is imperative to choose a tool that best respects the pedagogical principles to positively respond to the goal of the lesson and students' needs. As a student, it is mandatory to have a useful tool and be able to use it.

Dimension 3: Specific Competences

Dimension 3.1: Selecting digital resources

Selecting digital resources	To find, evaluate, and choose digital materials for education. While choosing digital resources and organizing their use, to consider the learning purpose, setting, educational method, and learner group.

On one hand, individuals who have this basic competence would make little use of the internet to find resources. They will hardly ever utilize the internet to discover teaching and learning tools. More than that, they can become aware and make basic use of digital technologies for finding resources. Also, they can find digital information that is appropriate for teaching–learning activities and use straightforward internet search techniques. What is more, they are aware of popular educational websites that offer educational materials.

On the other hand, people who reach a reasonable level of competence, regarding selecting digital resources, identify and assess suitable resources using basic or complex criteria. They can modify the search tactics in response to the outcomes, use relevant criteria to filter results and evaluate the value of digital resources on fundamental standards. Furthermore, they can find, edit, and adapt materials, such as games and/or applications, focusing on the applicability to the target learner audience and their particular learning goal. Moreover, it can be provided criticism and suggestions on selected sources.

Ultimately, people who are fully competent to select digital tools can comprehensively identify and assess suitable resources, considering all relevant aspects and promoting the use of digital resources in education. These people assess the acceptability and dependability of information using a variety of factors while also confirming its neutrality and correctness. In the end, they can advise colleagues and create their own, properly annotated, and graded library of materials, making it accessible to their co-workers.

In a nutshell, to properly select digital resources and reach a higher level of this specific competence, educators need to evaluate the quality of the digital learning resources following the next sections:

- academic quality: information reliability and relevance;
- pedagogical quality: pedagogical formulation, construction, strategies and assessment methods;
- didactic quality: veracity of learning activities and content of the educational tool;
- technical quality: design, browsing, technological ingenuity.

The number of digital learning tools is rising quickly because of the opportunities provided by information and communication technology (ICT) in today's classrooms. When using digital learning resources, learning takes place in a very different environment than when using conventional learning resources, where human interactions are mediated. Careful attention to the quality of the given digital material is especially crucial in these new settings when the student is alone in front of the computer.

Creating and modifying digital resources	To add to and make modifications to already-existing openly licensed materials and other resources where it is allowed. To develop new digital learning materials alone or in collaboration. When creating digital resources and organizing their use, to consider the learning purpose, setting, pedagogical method, and learner group**.**

On one hand, individuals who have this basic competence would create and modify resources using basic tools and strategies. They occasionally use digital materials, but they don't normally modify or produce my own. Once this competence is better reached, they can create and edit worksheets, tests, and digital slideshows for teaching reasons.

On the other hand, people who reach a reasonable level of this specific competence, can create, and modify digital resources using some advanced features. They can adjust the digital learning resources to the learning context and make some fundamental changes, such as modifying or removing pieces. Moreover, they can adapt advanced digital resources to a concrete learning context, such as mixing and creating existing materials to design learning activities for a specific learning context, objective, and learners' characteristics.

Ultimately, people who are fully competent to create and modify digital resources can create, co-create, and modify resources according to the learning context, using a range of advanced strategies. They use a range of sources outside search engines, such as official repositories, collaborative platforms, etc. Furthermore, they assess the acceptability and dependability of information using a variety of factors, while also confirming its neutrality and correctness. In the end, they can create complex, interactive digital resources and develop their own applications and games.

In a nutshell, to reach a higher level of creating and modifying digital resources, educators need to improve the outcome of a series of activities, such as:

- Provide effective searching methods in order to locate digital resources for research, teaching, and learning;
- Consider the unique learning context and learning purpose and choose appropriate digital resources for teaching and learning;
- Assess the authority and dependability of online sites and materials;
- Take into account any limitations that may apply to the usage or reuse of digital resources (such as copyright, file type, technological specifications, legal constraints, and accessibility);
- Evaluate the effectiveness of digital resources in meeting the learning purpose, the selected pedagogical technique, as well as the competency levels of the specific learner group.

Technology now plays a crucial part in the instructional processes in the modern era of learning. Most educational resources today are "born digital," meaning that they are physically digital files before they are put into print or any other format. This emphasises the importance of educators' competence to create and modify digital resources to achieve the lessons' aims and facilitate the teaching-learning process both for trainers and trainees.

Managing, protecting and sharing digital resources	To arrange digital information so that students, parents, and other educators may access it. Properly safeguard delicate digital material. Should adhere to and properly enforce copyright and privacy laws. To comprehend the production, usage, and correct attribution of open licenses and open educational materials.

Managing, protecting, and sharing digital resources means arranging digital information so that students, parents, and other educators may access it. properly protect sensitive digital material. To adhere to and properly enforce copyright and privacy laws. To comprehend the production, usage, and correct attribution of open licenses and open educational materials.

On one hand, individuals who have this basic competence would not employ strategies for sharing resources. They can organize and save digital materials for later use. Moreover, they would create and modify resources using basic tools and strategies. These people can provide links or email attachments with instructional information, and they are aware that some materials made available online are protected by copyright.

On the other hand, people who reach a reasonable level of this specific competence, can effectively share, and protect resources using basic strategies. They can disseminate instructional information in virtual learning settings by uploading, sharing, or embedding. Also, they can successfully preserve sensitive material, such as tests and student reports. Moreover, they are aware of the copyright policies governing the digital materials (including photos, text, audio, and video) used for academic purposes. Once this competence is better reached, people professionally share resources. They can distribute materials by integrating them into digital settings, implement access restrictions, secure data, and accurately cite works that are protected by copyright.

Ultimately, people who are fully competent to manage, protect and share digital resources can create, co-create, and modify resources according to the learning context, using a range of advanced strategies. To accomplish it, they assemble thorough digital material archives and make them accessible to students or other instructors. Furthermore, they grant licenses to the online resources. In the end, they professionally publish self-created digital content. These people can annotate the digital materials they distribute, making it possible for others to review, comment on, edit, rearrange, or contribute to them.

In a nutshell, to reach a higher level of creating and modifying digital resources, educators need to improve the outcome of a series of activities, such as:

- Where allowed, alter and change already-existing digital content;
- If it is allowed, to merge and mix already-existing digital content or portions thereof;
- Develop fresh digital learning materials;
- Collaborate on the creation of digital learning tools;
- When modifying or developing digital learning resources, should take into account the individual learning purpose, setting, pedagogical method, and learner group;

- Comprehend the many licenses that are applied to digital materials and the effects on their reuse.

In the era of the internet, digital tools and applications make it simpler for teachers to include their pupils in their lessons and incorporate new forms of collaboration and learning. The instructors are able to acquire data through the usage of these edtech solutions and so there is the responsibility to manage, protect and share it properly.

Area of competence 3: Teaching and Learning

Dimension 1: What is and why is important Teaching and Learning for educators?

Teaching and learning are a process that includes many variables. These variables interact as learners work towards their goals and incorporate new knowledge, behaviours, and skills that add to their range of learning experiences.

To teach is to engage students in learning process; thus, teaching consists of getting students involved in the active construction of knowledge. A teacher requires not only knowledge of subject matter, but knowledge of how students learn and how to transform them into active learners. Good teaching requires a commitment to systematic understanding of learning. The aim of teaching is not only to transmit information, but also to transform students from passive recipients of other people's knowledge into active constructors of their own and others' knowledge. The teacher cannot transform knowledge without the student's active participation. Teaching is fundamentally about creating the pedagogical, social, and ethical conditions under which students agree to take charge of their own learning, individually and collectively.

Learning can be defined as the activity or process of gaining knowledge or skill by studying, practising, being taught, or experiencing something (Merriam-Webster dictionary). Learning is about what students do; not about what teachers do. Learning is “a process that leads to change, which occurs as a result of experience and increases the potential for improved performance and future learning” (Ambrose et al, 2010, p. 3). The change in the learner may happen at the level of knowledge, attitude, or behaviour.

Characteristics of Learning:

- Learning is growth.
- Learning is adjustment.
- Learning is intelligence.
- Learning is active.
- Learning is the product of Environment.
- Learning is both individual and social.
- Learning is Purposeful.
- Learning is organising experience.

Teaching and learning go together. Effective teachers continually improve their skills by learning about the latest trends in the field of education.

Teaching is the process of imparting information. Learning is the process of receiving knowledge as evidenced by a positive or negative change which lasts for a long time. Teaching is attributed with more authority, autonomy, and expertise. Teaching and learning policy promote best practice and establishes consistency in teaching and learning across the whole school. It aims to ensure that all children are provided with high quality learning experiences, leading to a consistently high level of pupil achievement and attitude.

Digital education is the innovative use of digital tools and technologies during teaching and learning and is referred to as Technology Enhanced Learning (TEL) or e-Learning. Digital tools and platforms are becoming more integral to our personal and working lives. Digital learning increases access to education and knowledge while empowering students with a mindset and capabilities that sets them up for success in their present and future. To support both teaching and learning, technology infuses classrooms with digital learning tools, such as computers and handheld devices; expands course offerings, experiences, and learning materials; supports learning 24 hours a day, 7 days a week; builds 21st century skills; increases student engagement and offers them with:

- Efficiency. Online learning offers teachers an efficient way to deliver lessons to students.
- Accessibility of Time and Place.
- Affordability.
- Improved Student Attendance.
- Suits a Variety of Learning Styles
- Technology Issues
- Sense of Isolation.
- Teacher Training

In many studies it is reported that online learning could increase student participation, improve discussion quality, and foster online interactions. The discussion forum could support students and improve learning by solving difficult problems. Well known examples include social media, online games, multimedia, and mobile phones. Digital learning is any type of learning that uses technology. It can happen across all curriculum learning areas.

The scope of how digital products and services can be used for educational purposes is limitless, and it has some incredible benefits for students, such as immersive learning, accessible long-distance learning, or a personalised education experience, among others.

According to the DigiCompEdu Framework (2017), we can the following digital competencies for educators in Assessment:

Teaching	To preparing lesson plans enhanced with digital tools and resources and to use them efficiently in the process of teaching. To use digital tools to motivate and engage them in the lesson actively. Using new technologies in the school subjects makes digital born students more active and participating in the courses and this will lead teachers to develop new formats and pedagogical methods for instruction.
Guidance	To use digital technologies and services to enhance the interaction with learners, individually and collectively. To guide and assist the students timely while using digital technologies. To develop new forms and formats for a better guidance and support.
Collaborative Working	To use digital technologies to foster and enhance learner collaboration. This enables learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration, and collaborative knowledge creation.
Self-Regulated Learning	To use digital technologies to support self-regulated learning processes, i.e., to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights, and come up with creative solutions

Dimension 2: Needs assessed in VET educators

Digital technologies can enhance and improve teaching and learning strategies in many ways. However, whatever pedagogic strategy or approach is chosen, the educator's specific digital competence lies in effectively orchestrating the use of digital technologies in the different phases and settings of the learning process. As one of the parts of this project VET teachers, trainers, workers, NGO staff and e-learning associations in project partner countries (Türkiye, Spain and Romania) were interviewed to collect the vital needs of VET educators in the geographical scope of this project. The target group of this interview have been asked a series of questions to depict their views on Professional Engagement and its influence on using digital technologies in their daily teaching as an educator.

These questions are just to understand the competence and the needs of VET educators, trainers in using digital tools in their teaching and learning activities/ courses. The answers collected from the interviewees in three partner countries are varied and the general inferences of the answers gathered to the **4th** question '**How do you design, plan, and implement new digital technologies that help learners self-regulate their own learning? Are you using artificial intelligence, for example?'** are as below.

- The teachers plan their learning activities according to the students' perception, comprehension and learning abilities and they use artificial intelligence due to the content of their teaching and learning topic. However, those teachers mostly prefer to use already planned and designed AI tools rather than designing it by themselves. And they recommend their students to use mobile applications in their tasks and studies.
- Teachers and trainers have an idea on AI and use them (e.g., Siri, DeepL, Google Translate, Write, and Improve, Speak, and Improve etc) in their teaching activities and focus on the importance of AI in this digitalized world. Teachers also use online evaluation tools Quizzlet, kahoot in which students can see their own progress.
- Teachers and trainer can learn how to use AI based tools not only by attending at in-service training courses but also by watching tutorial videos several times before implementing it in their courses.

With the beginning of Covid-19 teachers met distant e-learning platforms and many other digital tools of Database, AI and Gamification. Most of the teachers integrated them into their courses but still there are some teachers who either do not show any interest to learn and use them or do not know them. But all teachers are aware of the importance of using AI, database and gamification apps and tools into their courses to make their learning and teaching more engaging and efficient.

Artificial intelligence is used at a small scale in the participants' educational route. It is implemented through usage of Siri, Alexa, and Cambridge tools, participating directly to the learning process. Artificial intelligence is also indirectly incorporated through other commonly used tools such as DeepL, Google Translate.

In terms of designing, planning, and implementing new digital tools, participants first research what has been done in the field and start building from there.

The **5th** question is to understand **how teachers/trainers are designing their learning activities; in a traditional way (teacher-centred) or learner-centred and how do they adapt gamification tools in their courses.** Although there are common approaches in designing learning activities there are slight differences, too.

The teachers know learner-centred lesson plans and participation of students in learning, ensures that what they learn is more permanent and practical. In fact, training is not only about the trainer's delivering learning materials, but about the trainee getting the desired knowledge, skills, and attitudes (i.e., achieving the learning outcomes). Each person has a different learning style and teachers can implementing a questionnaire (kahoot, mentimeter, etc) to assess students' learning styles during the first session and design the learning activities according to their learning needs and styles. This will improve students' motivation, engagement, and the participation in the class.

Interviewees from 3 partner countries adopt gamification to their courses specially to improve students' engagement and increase their participation in the course. Teachers are keen on finding the right digital

tools and the associated training methods to meet trainees' expectations, learning needs and styles. Although, it is not possible to use digital tools in all courses or in all classes teachers mostly prefer to use them in their courses.

Gamification is used in various forms by the participants. Some have it in mind when building a training as a sequence of stories, some use tools to implement it. In terms of tools and methods, they use animated videos, Kahoots, puzzles, role plays, mobile apps.

The **6th** question is to understand **how the teachers encourage students to employ digital technologies for collaborative knowledge sharing (e.g., using blogs, wikis)?**

All Interviewees use using video and audio communication tools (WhatsApp groups, zoom, Moodle platforms, Facebook) to share information, documents, and ideas. Communication improves collaboration and teachers use different types of collaborative tools to assign tasks or projects to students to work in peers or groups. Improving collaboration skill is a very important qualification in professional life. Gaining this skill at school period makes finding a job easier for the students too .For a good communication and collaboration teachers can provide students with a Google Docs or Google Spreadsheets and ask them to answer forum questions and to comment each other' posts. Such activities improve students creative, collaborative skills. Giving the task of creating a simple web page (or a blog) or an account on social media that disseminates the topic to be covered, is usually another good method of collaborative work among a group of students. Besides the topic itself, the students also learn other transversal skills such as teamwork, communication, divulgation skills and digital skills.

Participants encourage collaborative work through setting up communication channels, such as WhatsApp groups, Moodle forums, shared Google docs. Learning via Zoom is also an opportunity for students to work together.

Allowing students to research on a specific topic together is a great way to engage with the subject and to work with others before the teacher offers his notes.

Dimension 3: Specific Competence

Dimension 3.1: Teaching

Teaching	To preparing lesson plans enhanced with digital tools and resources and to use them efficiently in the process of teaching. To use digital tools to motivate and engage them in the lesson actively. Using new technologies in the school subjects makes digital born students more active and participating in the courses and this will lead teachers to develop new formats and pedagogical methods for instruction.

Digital education is an innovative use of digital tools and technologies during teaching and learning and often referred to e-learning or technology-based learning. In 21st century it is expected that, since new generations are in a continuous transformation, they are required to have an advanced level of digital

competence. The learning habits of 21st century students have been changed. Their needs and circumstances are not the same with the students of 10 years ago. So for the schools at each level and type it is essential that they can learn how to provide an educational, didactic and safe response to the needs of students. And to achieve that schools need to work with the teachers who are updated training and possessing a degree of digital competence to undertake the teaching-learning process of students and to promote the acquisition of key competencies in students.

A teacher at A1 level makes little use of digital technologies for instruction. They either do not know how to use digital tools in school education or use it very rarely. Some teachers use only available classroom technologies, e.g., digital whiteboards, projectors, PCs.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigCompEdu Framework, 2017.

On the other hand, teachers at (Integrator) B1 or (Expert) B2 have a competence of integrating available digital technologies meaningfully into the teaching process and use digital technologies purposefully to enhance pedagogic strategies. They have the capability of organizing and managing the integration of digital devices (e.g., classroom technologies, students' devices) into the teaching and learning process and also set up learning sessions or other interactions in a digital environment.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Teachers who are competent enough to use different type of digital tools in their lesson plans can easily structure their sessions. These sessions can be structured teacher-led or student-led according to the topic of the lesson and learning needs of the students. Student centred and digitally structured lessons will re-enforce the learning objectives. Teachers at leader or Pioneer level can structure and manage content, contributions, and interaction in a digital environment. During their sessions they can also easily evaluate the effectiveness of digitally enhanced teaching strategies and revise their strategies according to it.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell to plan and implement digital devices and resources in school education process and lesson plans administrative should put some objectives and take precautions to enhance effectiveness of teaching interventions. They should orchestrate digital teaching interventions, especially at VET schools to manage the educational system appropriately. In order to realize that the educators need to:

- To use technologies and digital tools in the classroom to support instruction, e.g., smart boards, mobile devices, and classroom devices.
- To reinforce learning objectives with teacher-led or student–led digital activities.
- To prepare and form lesson plans, learning activities and interactions in a digital technological world.
- To prepare digital content and collaborate, communicate, and interact in a digital world.
- To utilize face-to face or virtual educator-led digital interferes to support the learning objectives.
- To adjust methods and strategies reflecting on the effectiveness and appropriateness of the digital pedagogical strategies.
- To use innovative and pedagogical methods in their teaching way. (e.g., flipped classroom-project-based learning).

In the 21st century all teachers, especially VET teachers and trainers should be kept on the track in digital education and keen on applying and implementing digital tools in their courses. Because VET sector is huge and VET students should be equipped with the needs of labour markets and the world of work.

Teaching and learning how to adapt digital tools into your courses or how to apply it into your topic, especially with project-based learning method will lead to real learning.

Dimension 3.2: Guidance

Guidance	To use digital technologies and services to enhance the interaction with learners, individually and collectively. To guide and assist the students timely while using digital technologies. To develop new forms and formats for a better guidance and support.

On one hand, teachers who have this basic guidance competence make little use of digital technologies for interacting with students. To interact with their students, they employ basic digital strategies. They either do not communicate with their students, or communicate very rarely through digital means like email, chat, texting to respond their questions or assignments.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigCompEdu Framework, 2017.

Digital technologies are perfect means of interaction with the students, and this enhances monitoring and guidance as well. Interacting with learners in the collaborative digital environments is a perfect means of monitoring their behaviour and providing individual guidance and support as needed. Teachers and trainers should experiment new forms and formats for offering guidance and support, using digital technologies.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, teachers who are competent to employ digital technologies strategically and purposefully to provide guidance and support can set up learning activities in digital environments. They can foresee students' needs for guidance and cater for them, e.g. with a help or FAQ section, or with video tutorials. Teachers can easily monitor students' working or his/her behaviour digitally and then they can offer guidance whenever needed. Digital guidance gives you many opportunities to be more objective and act and monitor the students like a fly on the wall. And new need may lead to develop new forms and formats for offering guidance and support, using digital technologies.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for guidance and reach higher level of this specific competence, educators need to:

- To use digital communicative tools to give respond answers to the students' questions, assignments, performance, or project works.
- To a better guidance to foresee the students' needs and set up learning activities according to their needs.
- To interact with students in collaborative digital world.
- To monitor students digitally during the learning activities and guide them whenever they need.

Guidance, especially the digital guidance is highly important at school and in social life. Teachers can assign school homework, projects, or any tasks to students. It is easier for VET teachers to assign immediate tasks to students at ateliers or classes. Teachers can monitor students' behaviour and working discipline digitally and can also learn more about the development of students' soft skills.

At digital guidance teachers can be a fly on the wall and this will give a perfect chance to monitor the students and get their real needs.

Dimension 3.3: Collaborative Working

Collaborative Working	To use digital technologies to foster and enhance learner collaboration. This enables learners to use digital technologies as part of collaborative assignments, as a means of enhancing communication, collaboration, and collaborative knowledge creation.

Teachers who have this basic competence make little use of digital technologies in collaborative learning activities. They never or very rarely think about how students could use digital technologies in their assignments or activities that should be done collaboratively. At such circumstances teachers should encourage students to use collaborative digital tools to realize their assignments and presentations.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework.

According to CEFR framework in the next level the teachers are expected to implement digital technologies into the design of collaborative activities to support collaborative learning. Teachers can design and set up collaborative activities for students to exchange information or realize tasks; digital presentations, videos, ebooks, e-newspapers, wikis, moodle, teams, google meet, websites or blog posts. While students are working collaboratively in digital environment teachers can monitor and guide them digitally, too. During collaborative work students can receive and give peer-feedback and also do self-assessment.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

On the other hand, teachers use digital technologies to innovate and develop students' collaborative learning and peer assessment. At this level teachers can design and manage various collaborative learning activities in which students collaboratively conduct research, document findings, and reflect on their virtual or face-to-face learning. During collaborative learning teachers can monitor and guide students and at the same time collaborative learning is a perfect environment to get peer and self-assessment.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in designing and setting digital technologies for collaborative learning, the educators need to:

- To implement collaborative learning activities in which digital devices, resources (e.g., wikis, blogs, LMS) or digital information strategies are used.
- To make use of collaborative digital tools to exchange knowledge among students and colleagues.

- To monitor and guide students while they are realizing learning activities/tasks collaboratively and assists and give guidance whenever needed.
- To use digital evaluation and assessment tools for peer-feedback and support for collaborative learning.

Dimension 3.4: Self-Regulated Learning

Self-Regulated Learning	To use digital technologies to support self-regulated learning processes, i.e., to enable learners to plan, monitor and reflect on their own learning, provide evidence of progress, share insights, and come up with creative solutions.

Understanding the way of their own learning and taking the responsibility of their own learning are very important skills. And digital tools improve the self-regulated learning via activities or tasks. At this level teachers either do not or rarely consider how students could use digital technologies in self-regulated activities or assignments and encourage them to use digital technologies to support their individual learning activities and assignments, e.g., for information retrieval or presenting results.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework.

Integrator and expert teachers have the capability to implement digital technologies into the design of self-regulated learning activities and use them to comprehensively support-self-regulated learning. At this level teachers encourages students to use digital technologies to collect evidence and record progress in producing video or audio recordings, photos, texts, e-portfolios, learner's blogs, etc. Such digital learning and teaching activities also allow students to manage and document all stages of their learning, e.g. for planning, information retrieval, documentation, reflection and self-assessment. With the support of digital technologies teachers also help students to develop, apply and revise criteria for self-assessment, with the support of digital technologies.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, teachers who have competence in using digital technologies can easily foster self-regulated learning and can develop various and innovative digital formats or pedagogies for self -regulated learning. In addition, they foster their self-regulated learning and enhance their strategies. Developing digital skills improves hard skills as well as soft skills both for teachers and students in this digital world.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence of developing innovative digital formats or pedagogies for self-regulated learning, the educators need to:

- To use digital technologies (e.g., blogs, diaries, planning tools) to allow learners to plan their own learning.
- To use digital technologies to allow learners to collect evidence and record progress, e.g., audio or video recordings, photos.
- To use digital technologies (e.g., ePortfolios, learners' blogs) to allow learners to record and showcase their work.

- To use digital technologies to enable learners to reflect on and self-assess their learning process.

Area of competence 4: Assessment

Dimension 1: What is and why is important to foster Assessment competencies in educators?

Assessment and evaluation have been key parts of teaching and learning from centuries, nevertheless they have been notoriously used incorrectly to measure the knowledge memorized by students instead of a way to monitor their development and skills gained. At the same time, these two concepts have been confused and used as synonyms on many occasions, when evaluation is just one part of the process of assessment. To continue with a delimited definition of what is assessment we will take the definition of Brown (1990), that describes assessment as a process that includes four basic components:

1. Measuring and assessing improvement over time.
2. Motivating students to learn.
3. Evaluating the teaching methods.
4. Ranking the students' capabilities in relation to the whole group evaluation.

As said before, Assessment is a significant part of education and therefore it is very important to integrate digital technologies into this process but considering that it is vital to enhance and improve existing assessment techniques and incorporate digital technologies just when it is necessary. Technology must always be a supporting tool for teaching and learning and not a burden for students or educators that hinders or generalise the process of assessment.

Source: Digitalbizmagazine

In addition, digital resources can be used to make the process of assessment easier and faster, to make it more creative for students, to assess aspects that would be impossible without it, to monitor the learner progress in a more effective way and to provide feedback between educators and students to each adjust their approaches to teaching and learning consequently.

According to the DigiCompEdu Framework (2017), we can the following digital competencies for educators in Assessment:

Assessment strategies	To use digital technologies for formal assessment. To enhance the diversity and adaptability of assessment processes.

Analysing evidence	To generate, collect, critically analyse, and interpret the results of learners. To monitor the progress and performance of learners in a more accurate and diverse way using digital technologies.
Feedback and planning	To use digital technologies to provide better, more personalized, and timely feedback to learners. This means to provide learners with advice based on their performance, and to monitor the incorporation of said advice. To enable learners to understand the evidence provided by digital technologies and use it for decision-making.

Dimension 2: Needs assessed in VET educators

The VET educators, NGO staff and e-learning associations individuals interviewed during the project to gather the level of competencies in the VET community of educators, have been asked a series of questions to depict their views on Assessment and how it's influence by digital technologies in the day-to-day practice of an educator.

Participants in the interview answered two key questions in relation to this area of competence:

"Q1. How do you store and manage data (i.e., on students' academic progress, timetables)?"

This question was used to determine how educators of the three analysed countries manage the assessment and storing of data from their learners. The responses show that most participants use Excel to store the data. However, where the opportunity for an e-portal is being given, participants choose to use it. With Moodle, participants can track very easily the progress of a course. Other tools to collect and store data: Google Forms, Doodle, Mentimeter, MailChimp.

In general, educators choose different digital resources to assess students' progress and store the data collected depending on the educator level of digital skills, accessibility given, i.e., some courses have a e-learning platform associated that provides sufficient assessment functionalities; and the specific needs determine by the course specific learning objectives and level of complexity.

"Q2. Do you perform data analysis? How do you use data to inform your decision-making?"

This question aims at determining at what level are educators analysing the data obtained from students through digital technologies, as well as how are they using this information to further improve their teaching and general decision making. The results show that participants perform analysis of data in Excel, or analyse the results generated from Moodle or other e-learning platforms used. The results are reflected upon or even discussed with other teachers and students to find solutions to any problem that might arise.

The overall results of the interviews performed with VET educators and trainers show that they have a basic and intermediate level of competencies in relation to assessment. Some of the issues that were raised and that might be the reason for the lack of more advance competencies are: lack of time to research more complex techniques and resources for data analysis, the diverse needs of the different courses that they teach as well as among their students, which makes the process of depurating once specific strategy for assessment and data analysis more difficult, and the lack of information available on courses and other learning opportunities to improves these competences.

Dimension 3: Specific Competences

Dimension 3.1: Assessment strategies

Assessment strategies	To use digital technologies for formal assessment. To enhance the diversity and adaptability of assessment processes.

On one hand, individuals who have this basic competence would rarely make use of digital tools and platforms for assessment activities, and rather prefer to use analogic solutions. If they do make use of digital technologies to assess students it is often for creating assessment tasks or tests that are later provided in paper to learners, i.e., for creating a test easier or to provide a calendar for students with the deadlines of tasks.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, people who reach a reasonable level of competence (intermediate level) can use existing digital solutions for formative assessment, i.e., digital quizzes, e-portfolios, games, and they can adapt or choose a specific tool according to their learning objectives and the goal of the assessment. Some have a wider range of options, tools, and *software* that they can implement depending on the requirements and target group needs, they can also properly analyse the adequacy and quality of the tools they implement.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, people who are fully competent to implement digital assessment tools and processes can adopt, modify, and create their own digital assessment formats. They can calculate the impact of using digital technology for assessing students and determine in which situations the digital approach is more beneficial. A more advance group of educators can develop innovative digital assessment formats, using digital technologies, and sharing them with their teaching community.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for assessing learners and their progress and reach a higher level of this specific competence, educators need to:

- To use digital assessment tools to monitor the progress of learners and obtain data regarding their performance.
- To use digital technologies to enhance and improve formative and summative assessment strategies, i.e., making it more attractive to learners, providing more effective ways of collecting results, etc.
- To use of a variety of digital and non-digital assessment formats and to understand how to use them appropriately to benefit students and not to simply for the sake of implementing technology, meaning to critically assess the adequacy and quality of tools and strategies used.

Dimension 3.2: Analysing evidence

Analysing evidence	To generate, collect, critically analyse, and interpret the results of learners. To monitor the progress and performance of learners in a more accurate and diverse way using digital technologies.

On one hand, individuals who have this basic competence would rarely make use of digitally obtained data from their students to monitor their development. If they do make use of digital technologies to assess and monitor students it is often the most basic data that can be obtained both through digital resources and analogically, such as test scores, attendance, interventions, etc. They use the data to provided individual feedback to students.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, people who reach a reasonable level of competence (intermediate level) use the data obtained through the digital resources or platform provided for these purposes, to monitor their students' progress and activity, and to provide them with direct feedback on their performance. Some of them would go a step further and implement the digital monitoring tools that they find necessary to generate the information they need to monitor their learners.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, people who are fully competent in the analysis of teaching and learning evidence make uses of data collection and assessment to improve the learning strategies of students, reflect on the learning content they create, and the pedagogical techniques used. They often use multiple digital data collection tools, that they choose according to the course and learners needs, and they use this information obtained to provide individual feedback and solutions to students. The more advance educators in the use of analytics will go a step further and implement more advance data generation and visualization processes and discuss and reflect on the adequacy of different methods as well as continuously research to improve their knowledge and continue to include innovations.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for analysing evidence and reach a higher level of this specific competence, educators need to:

- To implement processes that allow to generate and collect important data from their students' performances.
- To use digital technologies to collect, organize, visualised, evaluate and measure the significant data collected.
- To analyse and draw conclusion from the evidence collected that will ultimately help the learners improve their capabilities or learning methods, improve the teaching content and approaches, or to identify specific issues and provide solutions.

Dimension 3.3: Feedback and planning

Feedback and planning	To use digital technologies to provide better, more personalized, and timely feedback to learners. This means to provide learners with advice based on their performance, and to monitor the incorporation of said advice. To enable learners to understand the evidence provided by digital technologies and use it for decision-making.

On one hand, individuals who have this basic competence would rarely make use of digitally obtained data from their students to prove them with feedback and planning. The ones that do make use of digital technologies to inform feedback, tend to provide more basic information on the learner's progress.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, people who reach a reasonable level of competence (intermediate level) use digital technologies to provide different forms of feedback to students and tries to facilitate the access to the information on learners' performance to the students. They would try to improve the effectiveness of the feedback given by incorporating the usage of digitally obtained data. They would also do a follow-up of the feedback provided to help students plan accordingly and thus improve their learning progress.

The intermediate level corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately, people who are fully competent around feedback and planning would personalise the feedback as well as the follow up support and planning they provide to the individual student, supporting these actions with more advance data assessment techniques that allow them to obtain and assess more information in a more efficient way. They would also use the data obtained to reflect on their teaching, and some of these educators would make improvements to their teaching strategies based on the information collected through digital assessment, and thus continuously innovating and adjusting their teaching.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for feedback and planning and reach a higher level of this specific competence, educators need to:

- To use assessment management systems and processes to enhance the effectiveness of feedback provision.
- To use digital technologies to monitor learners' progress and provide support when needed, and to individualise this support as much as possible to tailor it to the gaps and needs of everyone.
- To adapt, modify and innovate their teaching and assessment practices, based on the data generated by the digital technologies used.
- To enable learners to evaluate and interpret the results obtained through all kinds of assessments.

- To assist learners in identifying areas for improvement and jointly develop learning plans to address these areas, and to use the information obtained for more long-term decision regarding their choices in education, and career wise.

Area of competence 5: Empowering Learners

Dimension 1: What is and why is important for educators to empower learners?

A change from a learner-centred to a teacher-centred approach, from information transmission and memorization to knowledge acquisition and application, is what defines the postmodern educational paradigm. The student takes an active role in the educational process by learning how to gather knowledge, evaluate it critically and use it ethically and creatively to solve problems that arise in daily life. The educator, in turn, transitions from being a knowledge provider to someone who works with and helps learners.

The inquisitive mind is more satiated than ever before because of improvements in eLearning technology and straightforward search engines like Google. It takes only a few mouse clicks to learn new information and abilities. With the ability to study on their own, individuals are driven to learn more (and more, and more) to be better equipped for a changing work environment. This indicates that they actively and consistently try to comprehend what, why, and how.

The term "empowered learner" now has a broader connotation. An atmosphere and activities that boost one's sense of self-efficacy and energy are provided as part of the empowerment process, which is described as the process of establishing intrinsic task motivation. Motivated and inquisitive, empowered learners see chances for both professional and personal improvement. This indicates that they always strive to improve all facets of their lives.

Digital technologies' capacity to enhance learner-centred pedagogical approaches and increase students' active participation in and ownership of the learning process is one of its primary benefits for education. So, while studying a subject, trying out various possibilities or solutions, comprehending connections, coming up with original solutions, or making an artefact and commenting on it, for example, digital technology may be utilized to support learners' active involvement.

Competencies for empowering learners imply:

Accessibility and inclusion	To make learning materials and activities accessible to all students, including those with special needs. To consider and address learners' (digital) expectations, capabilities, uses, and misunderstandings as well as any environmental, physical or cognitive limitations on how they utilize technology.
Differentiation and personalisation	To utilize digital technology to meet the various learning needs of students, allowing them to progress at varied rates and levels, while adhering to their own unique learning goals.
Actively engaging learners	To encourage students' active and imaginative involvement with a subject topic by using digital technology. To include digital tools into pedagogical approaches that encourage learners to think critically, creatively and employ cross-disciplinary abilities.

	To expose students to fresh and authentic settings for learning that include them in practical tasks, scientific research, challenging puzzles, or other methods to get more actively involved in difficult subject matters.

Engagement and empowerment are very different. Engagement is defined as mobilizing institutional and student time, effort, and resources to improve the student experience, learning outcomes, and institutional reputation. This suggests that the institution or the trainers have the primary burden of ensuring that the trainees are engaged.

Empowerment, on the other hand, denotes a transfer of learning responsibility from the institution or instructors to the students. It is not the only responsibility of trainers to plan engaging activities for their classes to keep students interested; rather, they must provide the circumstances necessary to ensure that students feel inspired to study due to the course's inherent design.

While participation suggests a more general emphasis, empowerment often has a narrower definition. Although empowered students are constantly active in their work, engaged students are not always empowered.

By providing learning activities customized to each learner's level of competency, interests, and learning requirements, digital technology may also assist classroom differentiation and personalized education. But at the same time, it's important to provide accessibility for all students, especially those with special educational needs, and to avoid escalating already-existing disparities (such as in access to digital tools or digital skills).

Source: Edmentum Blog

Dimension 2: Needs assessed in VET educators

VET workers, NGO staff and E-learning associations have been asked a series of questions in order to depict strategies for responding to their students' needs when implementing digital instruments. This section of the interview required respondents to give information on the factors that are taken into consideration when identifying students' needs and abilities: "How do you identify learners' different needs and abilities (considering physical or cognitive constraints) when implementing digital instruments?". Moreover, this question has a special focus on those students who present physical or cognitive constraints.

The most common answers focus on the evaluation process, and they can be divided into two categories: the moment of the evaluation and the types of evaluation.

Moment of the evaluation

The majority of those who responded to this item felt that it is suitable to identify learners' needs and abilities in different moments. This idea conducts to initial and formative evaluation. On one hand, the initial assessment is the process of determining a person's learning and support requirements to enable the creation of a personalized learning plan that will give their education some structure. It establishes the learner's beginning point for their learning program. In order to acquire information that is needed, the trainer takes data through the registration process, surveys, and questionnaires that are filled out before the start of the course. On the other hand, formative evaluation is intended to support the learning process by giving the learner feedback that may be utilized to pinpoint strengths and weaknesses and thereby enhance future performance. [3]It is agreed that the trainer focuses during the program on the students, identifying their needs. Furthermore, one participant commented that it is necessary to focus on the progress made by each student.

Types of evaluation

In response to the question, most of those surveyed indicated that it is viable to discover students' needs through observation. In the field of education, observation is frequently utilized as a method to enhance learning and growth. The interviewees agree that it is a suitable method for gathering data that may be used to analyse educational contexts, assess the efficacy of instructional strategies, and formulate improvement strategies. Directly asking the students is the alternate method and one of the interviewee's common answers. This method can be + correlated with metacognition, the process which explains knowledge and understanding of your own thinking.

The overall responses to this question revealed that the correspondents are conscious of some methods to reach out their student's needs. As well, the interviewees agree that, when discussing about identifying students' needs and abilities, they take into consideration different moments and different strategies of evaluation.

[3] Yambi, T. A. C. (2018). Assessment and evaluation in education. Research Gate. https://www.researchgate.net/publication/342918149_ASSESSMENT_AND_EVALUATION_IN_EDUCATION

Dimension 3: Specific Competences

Dimension 3.1: Accessibility and inclusion

Accessibility and inclusion	To make learning materials and activities accessible to all students, including those with special needs. To consider and address learners' (digital) expectations, capabilities, uses, and misunderstandings as well as any environmental, physical, or cognitive limitations on how they utilize technology.

On one hand, individuals who have this basic competence would be concerned about inclusivity and accessibility and their related issues. They can be worried that integrating digital tools into the classroom would make it much harder for already underprivileged pupils to engage and stay up with the rest. At the same time, they recognize how crucial it is to give every student access to the same digital tools and that digital technology may help or hurt accessibility

On the other hand, people who reach a reasonable level of this specific competence would address accessibility and inclusivity. They are aware of social and economic disparities caused by access to digital technology as well as how these factors affect how pupils utilize it. Also, they make sure that all the pupils can use the digital tools they employ, being aware of those students who require more help, such as those in need. Moreover, these educators would enable accessibility and inclusivity. It means that they use digital educational tactics that consider the learners' digital surroundings, such as time constraints or the type of device accessible. When choosing, altering, or developing digital resources, they take accessibility into account and address any possible problems. They also offer alternate or compensating tools or techniques for students with special requirements. What is more, they use digital tools and techniques, such as assistive technology, to address the accessibility issues that certain learners, such as visual or auditory disabilities, may have.

Ultimately, people who are fully competent to ensure accessibility and inclusion would enhance both. They can choose and deploy digital pedagogical tactics that are appropriate for learners' technological uses, competencies, expectations, attitudes, and misuses. Also, they can utilize design concepts, such as font size, colour, language, style, and structure, to make materials and digital learning settings more accessible. Furthermore, they can provide innovative strategies for accessibility and inclusion. These people can consider, debate, redesign, and develop approaches for inclusion and equitable access to digital education.

In a nutshell, to reach a higher level of creating and modifying digital resources, educators need to improve the outcome of a series of activities, such as:

- Ensure that all the pupils can use the digital tools that are being used.
- Imply assistive devices for students who require extra help, such as those with physical or mental disabilities or learning difficulties.
- Always keep an eye on how well the accessibility improvement measures that are put in place are working and adjust the approach as necessary.

Taken together, these results suggest that inclusion comprehends people's involvement and empowerment. People are valued and respected when they are included. When they are being their true selves, employees perform at their best. One must feel included in order to be one's true self.

Dimension 3.2: Differentiation and personalisation

Differentiation and personalisation	To utilize digital technology to meet the various learning needs of students, allowing them to progress at varied rates and levels, while adhering to their own unique learning goals.

On one hand, individuals who have this basic competence would be uncertain about the ability of digital technology to differentiate and personalize. They have no information about technologies as an instrument that offers personalised learning opportunities. Also, once they get a little bit more advanced, they would become aware of the possibilities for differentiation and personalization offered by digital technology. They are aware that digital technologies, such as those that offer activities at various levels and speeds, can assist differentiation and personalization.

On the other hand, people who reach a reasonable level of this specific competence, would employ digital technologies for differentiation and personalisation. They can choose and employ various learning exercises, such as games or quizzes, that let students move at different rates, choose varying degrees of difficulty and/or redo exercises that they didn't complete successfully the first time. Moreover, these educators would also judiciously employ a variety of digital tools to differentiate and personalize. Those people can employ a variety of different digital technologies when creating learning and assessment activities, and I adjust and modify them to take into consideration various requirements, levels, speeds, and preferences. Moreover, they consider diverse learning paths, levels, and speeds when sequencing and putting learning activities into place and nimbly adjust their techniques to suit emerging conditions or demands.

Ultimately, people who are fully competent to ensure accessibility and inclusion, would implement differentiated and personalized learning completely and thoughtfully. In partnership with students and/or parents, they can personalize and create learning plans that let each student use the right digital resources to match their unique learning requirements and preferences. Also, they consider how well the differentiation and personalization are fostered by the teaching tactics used and they adjust their teaching techniques and digital activities accordingly. In the end, they would use digital technologies to differentiate and personalize marketing efforts. As a final stage, these educators can consider, debate, redesign and create pedagogical approaches for individualized learning through the use of digital technology.

In a nutshell, to reach a higher level of creating and modifying digital resources, educators need to improve the outcome of a series of activities, such as:

- Employ digital technology to meet the unique learning demands of each student, such as those with dyslexia, ADHD, or overachievers.

- Consider various learning routes, levels, and rates when creating, picking, and putting into practice digital learning activities.
- Create personalized learning strategies and utilize digital tools to assist them.

With the increased use of technology in classrooms in recent years, individualized learning and differentiated teaching have become popular aspects in the education sector. Nearly everyone agrees that it is advantageous for schools to accommodate more and more the individual requirements of each student.

Dimension 3.3: Actively engaging learners

Actively engaging learners	To encourage students' active and imaginative involvement with a subject topic by using digital technology. To include digital tools into pedagogical approaches that encourage learners to think critically, creatively and employ cross-disciplinary abilities. To expose students to fresh and authentic settings for learning that include them in practical tasks, scientific research, challenging puzzles, or other methods to get more actively involved in difficult subject matters.

On one hand, educators who have this basic competence would make little use of digital technologies for learner engagement and would use these very rarely. Also, once they get a little bit more advanced, they would use digital technologies to engage learners. They can make use of digital technology, such as animations and films, to help students understand new ideas in a fun and engaging way. Also, they can use interesting and stimulating digital learning activities, such as games and quizzes.

On the other hand, people who reach a reasonable level of this specific competence would be encouraging active usage of digital tools by students. They can place the instructional process' active use of digital technology at the centre. Also, they select the resource that will best promote student active involvement in a particular learning setting or with a certain learning purpose. Moreover, they would utilize digital tools to encourage active learning about the subject. In order to build a relevant, rich and successful digital learning environment, they make use of a variety of digital technologies, such as addressing various sensory channels, learning styles, and techniques, as well as methodologically modifying activity kinds and group compositions. Furthermore, they consider how well the instructional techniques used to promote active learning and learner engagement.

Ultimately, people who are fully competent to ensure accessibility and inclusion would put into practice active learning methodologies completely and critically. They can choose, create, utilize, and coordinate the usage of digital tools in the learning process based on how well they can encourage students' active, imaginative, and critical engagement with the subject matter. Also, they consider how effective the many digital tools they employ are boosting students' active learning and they modify their techniques and decisions as necessary. In the final stage, trainers are supposed to develop new digital methods for active

learning. They can consider, talk about, redesign, and create new pedagogical techniques for getting students to actively participate.

In a nutshell, to reach a higher level of creating and modifying digital resources, educators need to improve the outcome of a series of activities, such as:

- Utilize digital tools to create interesting and stimulating visualizations and explanations of new ideas.
- Use interesting and compelling digital learning environments or activities.
- Place the active use of digital tools by students at the heart of the teaching process.
- To choose the best digital tools for a certain learning situation or a particular learning goal to promote active learning.

In general, therefore, it seems that active learning is an important technique in the modern classroom, especially with the various benefits and opportunities it brings. Active learning supported by the development of digital skills is crucial for learners in the digital world.

Area of competence 6: Facilitating Learners' Digital Competence

Dimension 1: What and why is it important to Facilitate Learners' Digital Competence?

In case of European policy recommendations there are two slightly different definitions of 'competence'. In the Key Competences Recommendation, 'competence' is defined as a combination of knowledge, skills and attitudes appropriate to the context (European Parliament and the Council, 2006). In the European Qualifications Framework recommendation, 'competence' is seen as the most advanced element of the framework descriptors and is defined as the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. Furthermore, in the context of the European Qualifications Framework, competence is described in terms of responsibility and autonomy (European Parliament and the Council, 2008).

Pixabay

Digital competence means that the teacher has to master communication in the digital environment, share resources and tools, share, interact and participate in communities and networks. It is one of the key competences and refers to the confident and critical usage of the full range of digital technologies for information, communication and basic problem-solving in all aspects of life.

Digital competence is one of the transversal competencies that educators need to instil in learners. Whereas fostering other transversal competencies is only part of educators' digital competence in as far as digital technologies are used to do so, the ability to facilitate learners' digital competence is an integral part of educators' digital competence. It is also considered that "as a transversal competence, digital competence also helps us master other key competences, such as communication, language skills, or basic skills in maths and science.

The following competences are important to facilitate learners' Digital Competence:

Information and media literacy	**To know how to reach the correct information at the right source and media literacy are top topics in this digital age and necessary to incorporate learning activities, assignments and assessments which require students to articulate information needs.** Besides teaching school subjects' teachers should also guide students to find information and resources in digital environments. They can also lead students to organise, process, analyse and interpret information to compare and critically evaluate the credibility and reliability of information and its sources.

Digital communication and collaboration	Students need to use digital communication and collaboration tools effectively and in civic participation to incorporate learning activities, tasks, assignments, and assessments. Such activities encourage students to interact through a variety of digital technologies. They can understand appropriate digital communication means for a given context and share data, information, and digital content with others through appropriate digital technologies. In the global digital world students will be able to seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.
Digital content creation	Students should incorporate digital learning activities, tasks, assignments, and assessments to express themselves through digital means, and to modify and create digital content in different format. Students should be aware of internet rules and ethics how copyright and licenses apply to digital content, how to reference sources and attribute licenses. Creating and editing digital content improves students encourage in realizing their tasks in future, too. They will gain the skill of understanding of how to plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.
Responsible use	Teachers should take measures to ensure students' physical, psychological, and social wellbeing while using digital technologies as well as empowering them to manage risks and use digital technologies safely and responsibly. Teachers should encourage students to use digital technologies with a positive impact with a creative and critical manner. Although it serves lots of positive effects in our school and social life, digital technology also contains and faces various risks and threats. Students should know internet safety and security measures to protect their personal data and privacy in digital environments to avoid health risks and threats to physical and psychological well-being while using digital technologies
Digital problem solving	Students can identify and solve technical problems or transfer technological knowledge creatively to new situations. Student can identify technical problems when operating devices and using digital environments, and to solve them. They can easily adjust and customise digital environments to personal needs. They can identify, evaluate, select, and use digital technologies and possible technological responses to solve a given task or problem and use digital technologies in innovative ways to create knowledge. With such qualifications students can understand where their digital competence needs to be improved or updated and support others in their digital competence development.

Dimension 2: Needs assessed in VET educators

Digital competence is one of the transversal competences educators need to instil in learners. Whereas fostering other transversal competences is only part of educators' digital competence in as far as digital technologies are used to do so, the ability to facilitate learners' digital competence is an integral part of educators' digital competence.

The 10th Question is how the teachers foster learners' information and media literacy (i.e., encourage learners to express themselves through digital means while avoiding possible dangers like cyberbullying or digital addiction)

The 11 interviewees from 3 project partner countries briefly accept that fostering the use of technologies in the educational environment is different from the use of digital tools or apps in social life, especially during the one's free time. The common idea is that in the virtual classroom environment generally, except very rare events, bullying or misinformation does not occur, as it is fully monitored by the teacher throughout the whole process. The digital tools and e-learning platforms are mostly experienced by the teachers before they are adapted to classroom activities or recommended to students to realize their tasks or project and performance works.

The interviewees make presentations to students and their parents on media literacy, privacy rules and internet ethics, cyberbullying, and digital addiction at the beginning of the educational year. Moreover teachers encourage students to take advantage of digital media, as they are a great source of immediate information, but always stressing the importance of knowing how to filter sources and emphasising that they should always speak with respect and tolerance, as this will be the personal and professional brand that they will build for their future.

When it comes to learners expressing themselves online, all participants encourage them to learn as much as possible about cybersecurity, but also to promote a respectful behaviour. Online platforms, such as Moodle, or even WhatsApp groups, can be managed to avoid conflicts and educate the members through set rules.

Dimension 3: Specific Competences

Dimension 3.1: Information and media literacy

Information and media literacy	**To know how to reach the correct information at the right source and media literacy are top topics in this digital age and necessary to incorporate learning activities, assignments and assessments which require students to articulate information needs.** Besides teaching school subjects' teachers should also guide students to find information and resources in digital environments. They can also lead students to organise, process, analyse and interpret information to compare and critically evaluate the credibility and reliability of information and its sources.

At this level teachers make little use of strategies to foster students' information literacy and encourage them to use digital tools to search for necessary information they need. In fact, they do not think much on guiding students to reach reliable source of information or resources.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

Teachers of these level implements activities to foster students' information and media literacy and use a range of pedagogic strategies for it. Moreover, they use different types of pedagogic strategies to enable students to compare and combine information. Teachers implements learning activities where students can use digital tools to reach correct and reliable information.

This is intermediate level, and it corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

At this level teachers plan their courses with the activities improving students' critical and comprehensive thinking abilities. They use innovative formats to foster students' information and media literacy. Teachers, according to their proficiency level, they reflect, discuss, design and re-design their innovative pedagogic strategies to create and improve students' awareness on information and media literacy. eTwinning and scientix platforms are great platforms in this sense. Teachers can run international eTwinning projects to improve students' knowledge on media literacy and improve their use of digital tools.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for facilitating learners' digital competence and reach a higher level of this specific competence, educators need to:

- To articulate information needs and according to their needs they develop personal search strategies for a better quality of information found.
- To analyse, evaluate and compare the credibility and reliability of sources of data, information, and digital content.
- To organise, store and retrieve data, information, and content in digital environments.

Dimension 3.2: Digital communication & collaboration

Digital communication and collaboration	**Students need to use digital communication and collaboration tools effectively and in civic participation to incorporate learning activities, tasks, assignments, and assessments. Such activities encourage students to interact through a variety of digital technologies. They can understand appropriate digital communication means for a given context and share data, information, and digital content with others through appropriate digital technologies.** In the global digital world students will be able to seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.

At this level teachers show their progress by making little use of strategies fostering learners' digital communication and collaboration and encourage them to use digital technologies for communication and collaboration. While some of the teachers do not or very rarely think of fostering students' digital communication and collaboration some teachers really encourage their students to use digital technologies to interact with other students, with their teachers or trainers, management staff and third parties.

The basic level corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, some teachers show their progress by implementing various educational activities to foster students' digital communication and collaboration. And while preparing these activities they use different range of pedagogies. Those learning activities are mostly based on using digital tools for communication and teachers guide students in respecting behavioural norms, appropriately selecting communication strategies and channels, and being aware of cultural and social diversity in digital environments. Teachers who are more skilful at this level use a range of different pedagogic strategies in which students use digital technologies for communication and collaboration. Such teachers support and encourage students to use digital technologies to participate in public discourses and to use digital technologies actively and consciously for civic participation.

This is intermediate level, and it corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

On the other hand, more skilful teachers on digital communication and collaboration incorporate assignments and learning activities which require learners to use digital technologies for communication, collaboration, knowledge co-creation, and civic participation effectively and responsibly. They critically reflect on how suitable their pedagogic strategies are in fostering learners' digital communication and collaboration and adapt their strategies accordingly and due to that reflection, they discuss, re-design and innovate pedagogic strategies for fostering learners' digital communication and collaboration.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital technologies for digital communication & collaboration competence and reach a higher level of this specific competence, educators need to:

- To know the appropriate and the right digital communication tools to interact, share data and information and digital content.
- To know referencing and attribution practices and participate in society using public and private digital services.
- To seek opportunities for self-empowerment and for participatory citizenship through appropriate digital technologies.
- To use digital tools for collaborative learning activities.
- To use digital tools to be aware of behavioural norms.
- To be aware of cultural and generational diversity in digital environments and to adapt communication strategies to the specific audience.
- To be able to use more than one digital identity and protect them.

Dimension 3.3: Digital content creation

Digital content creation	Students should incorporate digital learning activities, tasks, assignments, and assessments to express themselves through digital means, and to modify and create digital content in different format. Students should be aware of internet rules and ethics how copyright and licenses apply to digital content, how to reference sources and attribute licenses. Creating and editing digital content improves students encourage in realizing their tasks in future, too. They will gain the skill of understanding of how to plan and develop a sequence of understandable instructions for a computing system to solve a given problem or perform a specific task.

At this level while some teachers encourage students to use digital content creation by producing texts, images, and videos but some of them do not or only very rarely consider about it.

This is the basic level that corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, teachers implement educational activities in which students use digital tools to produce digital content, e.g., in the form of text, photos, other images, videos, etc. They encourage learners to publish and share their digital productions. Some more skilled teachers at this level use different pedagogic strategies to enable students to express themselves digitally, e.g., by contributing to wikis or blogs, by using ePortfolios for their digital creations. They encourage and enable students to understand the concept of copyright and licenses and how to re-use digital content appropriately

This is intermediate level, and it corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately some teachers detect and counteract plagiarism, e.g., in using digital technologies. They critically think on the suitability of their pedagogic strategies in fostering their students' creative digital expression and adapt their strategies to it appropriately. They guide their students in designing, publishing, and licensing complex digital products, e.g., creating websites, blogs, games or apps. And according to the feedback of students and the evaluation of how effectiveness of the implied formats teachers improves it.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using digital content competence and reach a higher level of this specific competence, educators need to:

- To prepare and edit digital content in different formats and use them to express themselves.
- To modify, refine, improve, and integrate already existing and necessary knowledge.
- To develop original and content relevant modules and know how copyright and licenses apply to data, information, and digital content.
- To plan and develop understandable instructions for a computing system to solve a given problem or perform a specific task

Dimension 3.4: Responsible use

	Teachers should take measures to ensure students' physical, psychological, and social wellbeing while using digital technologies as well as empowering them to manage risks and use digital technologies safely and responsibly.
Responsible use	Teachers should encourage students to use digital technologies with a positive impact with a creative and critical manner. Although it serves lots of positive effects in our school and social life, digital technology also contains and faces various risks and threats. Students should know internet safety and security measures to protect their personal data and privacy in digital environments to avoid health risks and threats to physical and psychological well-being while using digital technologies

On one hand, teachers make little use of strategies to foster their students' digital wellbeing since they know digital technologies can positively and negatively affect learners' wellbeing. However, some teachers foster students' awareness of how digital technologies can positively and negatively affect health and wellbeing, e.g., by encouraging them to identify behaviour (of their own or of others) that makes them happy or sad. I foster learners' awareness of the benefits and drawbacks of the openness of the internet.

This is the basic level that corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, teachers with more skills give practical and experience-based advice on how to protect privacy and data, e.g., using passwords, adjusting the settings of social media and assist them in how to protect their digital identity and manage their digital footprint. Teachers at this (intermediate) level develop strategies to prevent, identify and respond to digital behaviour that negatively affects learners' health and wellbeing (e.g., cyberbullying) and encourage them to create a positive attitude towards digital technologies and being aware of possible risks and limits. The students become confident enough that they can manage possible risks and limits.

This is intermediate level, and it corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately students understand the digital risks and threats in digital environment like identity theft, bullying, fraud, stalking, phishing and how to react them appropriately. Teachers adapt their strategies to foster students' digital wellbeing. And, some teachers innovate approaches to foster students' ability to use digital technologies for their own wellbeing and discuss and re-design it due to their needs.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in using responsible use competence and reach a higher level of this specific competence, educators need to:

- To protect digital devices and digital content and understand digital risks and threats in digital environments.
- To be aware of digital safety, internet risks, internet security and safety measures to be taken and understand it.
- To know details on not to leave digital footprints in digital world and how to protect themselves and others from any damage.
- To know and learn much on digital wellbeing.
- To monitor students in digital world especially in collaborative and communicative tasks and give prompt feedback or reaction to any digital threat.

Dimension 3.5: Digital problem solving

Digital problem solving	Students can identify and solve technical problems or transfer technological knowledge creatively to new situations. Student can identify technical problems when operating devices and using digital environments, and to solve them. They can easily adjust and customise digital environments to personal needs. They can identify, evaluate, select, and use digital technologies and possible technological responses to solve a given task or problem and use digital technologies in innovative ways to create knowledge. With such qualifications students can understand where their digital competence needs to be improved or updated and support others in their digital competence development.

On one hand teachers do not consider much, or very little, on how to foster students' digital tools using ability and how to solve any digital problems whenever they faced. Besides teachers encourage students how to solve technical problems using trial and error. They encourage them to transfer their digital competence to new situations.

This is the basic level that corresponds to the levels Newcomer (A1) and Explorer (A2) of the CEFR framework adopted in the DigiCompEdu Framework, 2017.

On the other hand, teachers implement learning activities in which students use digital technologies creatively and develop their technical knowledge and skills on it. Teachers also encourage students to collaborate and learn from each other. Teachers also implement different pedagogic strategies to enable students to apply their digital competence to new situations and encourage them to reflect on the limits of their digital competence and help them identify suitable strategies for further developing it

This is intermediate level, and it corresponds to levels Integrator (B1) and Expert (B2) of the CEFR framework.

Ultimately teachers at this level enable students to seek out different solutions for digital and technological problems, make use of its benefits and gain the skills of critical and creative thinking to solve problems. Teachers also enable students to apply their digital competence in unconventional ways to new situations and creatively come up with new solutions or products.

The advance level corresponds to levels Leader (C1) and Pioneer (C2) of the CEFR framework.

In a nutshell, to improve the level of competence in problem solving competence and reach a higher level of this specific competence, educators need to:

- To adjust and adapt digital technology and tools to personal needs and identify digital problems while using digital tools and to solve them.
- To solve a given task or a problem, teachers should identify, evaluate, select, and use digital technologies and possible technological solutions.
- To create necessary knowledge teachers should use digital tools in an innovative way and they must improve their needed competence and update it.
- To develop their digital competence in order to be up to date.

Skills and competences required in educators in the implementation of Data Analysis, Gamification and AI tools

Specific skills and competences required for the implementation of Data Analysis tools

Educators, as many other professionals, can make use of data analytics to improve the quality of their teaching methods, as well as to facilitate their daily tasks. Investing time and resources in upskilling their data skills can have a positive impact in their work, their teaching pedagogies, and the lives of their learners

Source: Portafolio.co

1. Data Analytics to improve teaching methods

Most educators already have a certain level of skills in data management and analytics, they consider elements such as grades, attendance, or participation as valuable information to track the progress or their students. However, seeing data through a more informed lens gives a new meaning to these words.

A more skilled in data analytics educator can take a lot of insight from these pieces of information, especially if they use the right digital tools, they can use this information to reveal what topics they should go back because they have not been understood, what topics are students more interested on, how to modify their teaching strategy to adapt to learners needs, etc. In addition, there is so much more pieces of information that can be collected to assess, monitor, and analyse students' performance, as well as your own as an educator. To facilitate this process, and since many classes take place online or using e-learning platforms, we can make use of automatic generated data through these platforms, i.e., Moodle, or other learning management systems (LMS). These online educational systems generally hold the data those skilled educators can extract and manipulate to design better educational experiences for learners.

2. Data Analytics to simplify tasks

In using data analytic tools to support teachers tasks they can have the information they required to assess learners progress in a more effective way. Many platforms generate not only data but also statistics and comparisons that can facilitate the process of recording data by the educator. The automation of this part of data analytics will make the process much easier that manually tallying statistics like the numbers of right and wrong answers in a test.

A mixture of pedagogical and technical skills are necessary for educators to implement data analytics in their teaching and benefit from it, such as the ability to know and choose the right digital tool to generate the data you required, the ability to separate the pieces of information that are valuable to measure an specific indicator, to be able to organize and visualize the information, to assess and draw conclusions from the collected data, and to transform the information obtained in actions such as feedback to learners, modifications in the teaching methodology, and future planning of lessons.

Hereafter, there is a collection of specific competencies necessary for educators that want to introduce data analytics in their practice:

- To choose the digital tools that are necessary to generate and extract the information we required, meaning to use the e-learning platforms, LMS, digital evaluation tools (quizzes, e-portofios, etc) that can provide as with the information we aim to collect to monitor our learners, that can vary depending on the learning objectives of the course and the characteristics or the target group.
- To use the already organize data that is provided by many e-learning platforms and other digital environments. These platforms already offer statistics of learners' progress, of tests or tasks perform, as well as assistance or time spend in a course.
- To be able to distinguish the trivial information for the data that can be useful to you as an educator.
- To be able to organize all the data collected from different means to be easier to be assess and visualize. Many educators use tools such as excel, or the functions already provided by their learning platforms that automatically organize information.
- To draw conclusions from the collected data from learners' progress, meaning to identify students that are struggling, to be able to determine where the subject is not being correctly understood, when questions or tasks have not been adjust to the level of student being too easy or too difficult, etc.
- To plan and to modify your teaching methods in accordance with the conclusion that you have achieve by analysing students' data. It is important to translate all this information into actions, that can be changes in a curriculum, approaching tasks or tests questions in a different way, individually providing specific feedback to students, to mentor students that are struggling for personal or academic reasons, to provide more explanations to some topis or your subject or to try and make the process of learning a topic more interactive or creative.

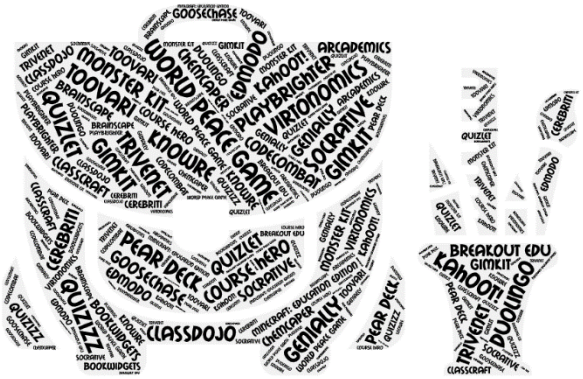
Educators are in the position to help student learn better, more efficiently and deeper. Using data analytics will aid educators in the tasks of identify issues, tracking progress, and many other actions. Digital data analytics tools can also be introduced to make the process of generating, organizing, and assessing data simpler and requiring less effort and skill.

Specific skills and competences required for the implementation of Gamification tools

Today's learners are digital natives and have new profiles. They grew up with digital technologies and have different learning styles, new attitude to the learning process and higher requirements for teaching and learning. Teachers are facing new challenges and must solve important issues related to the adaptation of the learning process towards students' needs, preferences, and requirements. Teachers must use different teaching methods and approaches that allow students to be active participants with strong motivation and engagement to their own learning. Modern pedagogical paradigms and trends in education, reinforced using ICT, create prerequisites for use of new approaches and techniques to implement active learning. Gamification in training is one of these trends.

According to Kapp gamification is "using game-based mechanics, aesthetics and game thinking to engage people, motivate action, promote learning, and solve problems**."** (Kapp, 2012)

Gamification is the use of game thinking, approaches, and elements in a context different from the games. Using game mechanics improves motivation and learning in formal and informal conditions (GamifyingEducation.org). Various definitions overlap and we can summarize gamification as: Gamification is an integration of game elements and game thinking in activities that are not games.



Implementation of game elements in education is logical since there are some facts that are typical for the games and training. Users' actions in games are aimed at achieving a specific goal (win) in the presence of obstacles. In education there is a learning objective, which must be achieved by performing specific learning activities or interaction with educational content. Tracking the players' progress in games is an important element, because next steps and moves are based on their results. In education tracking the students' progress is essential to achieve the learning objectives. Students' learning path is determined by the achieved levels of knowledge and skills (Glover, 2013). Collaboration in education is a milestone for the effective implementation of active learning. The focus in learning process should be rather towards developing skills for collaboration and teamwork and responsibility for the performance of the group instead of competition between students. Gamification is not directly associated with knowledge and skills. Gamification affects students' behaviour, commitment, and motivation, which can lead to improvement of knowledge and skills (W. Hsin-Yuan Huang, D. Soman, 2013).

Gamification refers to an innovative technology that meets the modern requirements of a digital society. Recently, the elements of gamification are actively introduced into the educational processes of schools, educational organizations of secondary vocational, and higher education. To use gamified digital tools in school subjects successfully teachers need to have some general skills and improve their competences in this area. The required skills and competences are:

- To be interested in the gamification tools that can be adopted to 5E Teaching and Learning model.

- To use game-based mechanics, aesthetics, and game thinking to engage students to the teaching topic, promote their learning and solve any educational problems.
- To distinguish and use motivating and entertaining gamification tools that attracts students with weak proficiency into participating in classroom learning.
- To use collaborative gamification tools to increase the soft skills of the students this has the same importance with their hard skills.
- To choose a gamified LMS that aligns with his/her current teaching method, the topic of the teaching theme or unit, the profile of students and the other educational resources.
- To acquire working knowledge of how gamification tools/platforms operate and its varied features and options.
- To create a variety of assignments that will be appealing and challenging to students with different profiles of students.
- To use gamified video or audio collaborative digital tools not only to improve students' collaborative skills but also give them tasks for co-construction and co-creation of resources and knowledge in order to improve students' creative skills.
- To consider on the level of their students, teaching objective and each course requirements before choosing a gamification tool and planning its implementation, especially when it's the first time they are implementing it.
- To protect sensitive digital content, apply privacy and copyright rules, to understand the use and creation of open licenses and open educational resources and their proper attribution.
- To help students to deal with failure as part of the learning process – in a gamified learning process, failure can be part of learning avoiding students to experience anxiety when facing the chance to fail.
- To apply game elements and game thinking in schools' activities will help to provide flow to students.
- Create challenges tailored to the student's level of knowledge, increasing the difficulty of these challenges as the student acquires new skills.

Gamification is an innovative technology, considered a leading trend in education at all levels. It has significant potential in the formation of digital skills in students and in increasing their motivation to learn. Teachers teaching students at all grades and with different skills need to improve their digital skills and competences to keep up to date. And they have various opportunities to improve their professional development in that area. They can attend at in-service trainings, learn from their colleagues or students, they can make use of many didactic videos on YouTube or at virtual free training activities.

Specific skills and competences required for the implementation of AI tools

Artificial intelligence in its many forms is becoming more and more prevalent in our daily lives, accompanying us in practically all our actions. We constantly have a smart gadget that tracks our activity and provides advice for a better life, from using GPS to locate our way to measuring our heart rate when participating in sports.

To better implement this interaction, it is important to know the skills and competences that are required. How AI will influence the future of mankind and education is a crucial subject that must be answered. Reviewing the effects of AI to reinvent knowledge and education within the guiding principles of inclusion and fairness in access to high-quality learning opportunities is necessary to provide an answer.

We must now endeavour to teach people how to create a notion of the artificial mind considering AI's expanding influence. We must emphasize how the human mind differs from an artificial one. Such skills will call for comprehension of both computational thinking and the workings of AI, as well as human-centred awareness of what each technology can and cannot do.

The importance of education, colleges and universities, instructors, and teaching cannot be overstated in relation to any of these. A report from UNESCO (2021) describes AI skills and it is predominantly focused on academic AI instruction competencies.

There were proposed four categories of AI competencies:

Engineering and design thinking	As well as representation and reasoning, algorithms, and coding, are all examples of computational thinking AI abilities
technology-oriented competences	Such as knowledge of AI methods, tools, and applications
Maker-oriented competencies	Designing AI applications and contextual data/algorithm-based problem solving
Human-oriented skills	Understanding the special nature of human intelligence, the ethical and societal implications of AI and data regulation and justice

These competences can be developed on three different levels:

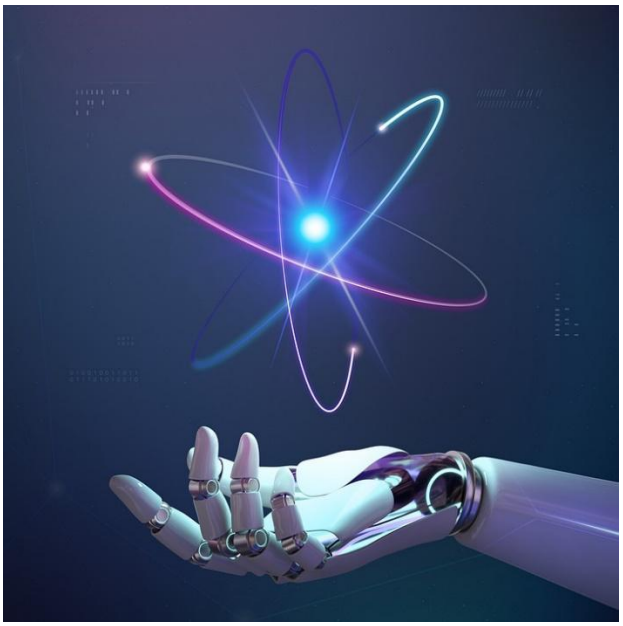
- at the national inter-sectoral level, which entails selecting the appropriate AI competencies and creating a budgeted master plan;
- in the educational sector, which entails creating textbooks and assessments;
- by training teachers.

Finally, AI literacy can be developed as part of lifelong learning, which includes informal and non-formal initiatives like coding clubs and hackathons. From a different angle, AI literacy entails a wide range of AI knowledge, such as:

- What AI can and cannot do, as well as the crucial role that humans play in all of AI's technological advancements.
- AI skills, such as creating and using AI;
- AI values, such as when AI is useful and when it should be questioned.

A combination of technological and human-oriented skills is required for AI literacy. The human-oriented competences focus on issues such as data justice and regulation, the history, present, and potential futures of AI, the uniqueness of people, the ethics of AI, and its societal implications. The sophisticated AI knowledge and abilities required to design, manipulate, implement, and interpret AI, on the other hand, are technology-oriented competences, which focus on AI methodologies, technologies, and applications.

In a nutshell, because AI is being utilized more frequently and influences our everyday decision-making throughout our lives, it is important for us to grasp what we need to accomplish it. From one perspective, AI competencies include AI knowledge, what AI can do, and what it cannot do; skills, creating and using AI; and values, when AI is useful and when it should be questioned. From another perspective, AI competencies include human-oriented competencies, computational thinking AI competencies, technology-oriented competencies, and maker-oriented competencies.



Source: Pixabay

About the partner organisations

In 1999, Femxa Formación S.L.U started its business trajectory as a training company, setting as its main objective to provide innovative training solutions to growing market needs and to anticipate future training needs arising in society. Since then, it developed consulting work specialising in Value Added training solutions, whose focus is on the development of projects of tailored training, aimed to solve the specific needs of customers more efficiently, which has allowed us to reach a landmark in the field of training. Our reason for being is to build training solutions that provide job opportunities for people and improve the competitiveness of organisations. In the last 20 years, we have trained more than 64.000 unemployed, 40.000 people aged over 45, 15.800 unemployed young people under 30.

TEAM4Excellence (T4E) is a Romanian association aiming to improve the quality of life through education, research, and consulting activities. To address societal challenges, T4E provide learning opportunities and career advice for social inclusion, development, and employability of people, and equip trainers with key competences and skills to foster personal as well as professional development. Within 30+ EU funded projects, the association produces and transfers innovation, experience and know-how through cooperation with domestic and international partners. By hosting events, training courses and conferences, T4E strengthens collaboration between people, supports organisations and bridges gaps between generations. The wide expertise in management enables T4E staff to provide consultancy to large companies and SMEs using EFQM Model and Business Model Canvas.

Osmaniye Provincial Directorate of National Education is a regional governmental organisation. Osmaniye covers an area of 3,767 km² and its population is 538.759 inhabitants. Osmaniye province is divided into 7 districts. The organisation takes care of the planning and coordination of all kinds of educational and training activities from preschool to the end of secondary school, vocational high schools, technical schools, adult education, and other institutions & centres in its region.

Osmaniye MEM organised many courses since 2019 for teachers to renew themselves and over 5000 teachers benefited from these courses. The project experts in the Research and Development office in our Institution have carried out the training of teachers, local or regional authorities and NGOs on preparing and managing EU projects. With these training activities more than 600 students, teachers and managers actively took part in EU projects.

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