

Online training curriculum: methodology of development and delivering



Digital Transformation, Industry 4.0 and Human Resources
Management: Innovative skills to enhance HE students'
employability, flexibility and transversal capabilities

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Introduction

This DigiWork online training methodology guide tries to be a comprehensive and innovative program that not only can help users to better adapt to the dynamic changes in the field of education, but also actively involves diverse parties in the process of developing effective training programs. It encompasses personalization, collaboration, practical application, knowledge incorporation, and stakeholder engagement, which adds up to a solid foundation for effective and modern online training. The methodology not only responds to current challenges, but also sets its sights on creating new standards in digital education.

The evolving landscape of online learning is entering a new phase. Over recent years, trends have been predominantly focused on the technological aspects. However, the future is geared towards a shift in more personalized and tailored approaches to education, training, and development.

Preparing this report, the Project Consortium conducted exhaustive research and analysis of the e-learning market worldwide, its ongoing trends, and the outlook for the forthcoming years. Data was gathered from many sources, including tools for content creation and online learning platforms, official statistics, and available expert articles. After an in-depth examination of the data gathered, it was mutually agreed among the Project Partners to dedicate this introduction to the rapidly evolving trends that substantially impact the education scene.

The following overview will address four key e-learning trend forecasts for the subsequent years: 1) the ascendance of adaptive learning; 2) the enduring adoption of gamification; 3) the burgeoning use of virtual reality in education; and 4) the novel applications of data analytics¹. Brief explanations of each of these emerging trends, as provided by the Project Consortium, follow in the subsequent sections.

¹ Bennet, "The Future Of eLearning: Emerging Technologies And Trends To Watch."
Bouchrika, "10 Online Education Trends: 2023 Predictions, Reports & Data."
Sheetrit, "The Future Of Learning: Educational Technology Trends To Watch In 2023."

For further information about the project and the developed learning contents please visit the website: <https://digiwork-project.eu/>

E-learning trends — overview

1) The Rise of Adaptive Learning

Adaptive learning is a way to help people learn faster by adapting to their individual needs based on their experience in the course. Students may learn at their own pace, so accelerate if they need to, but also slow down if they feel like they need more time with a concept thanks to the help of an algorithm that adjusts based on their performance. For example, if one struggles with a concept or section of your course, adaptive learning will give you more practice on that topic. So, adaptive learning uses a computer system to change instruction based on what students already know and whether they are ready for the next lesson. This makes learning content easier for students to succeed and, at the same time, reduces frustration level.

Advantages:

- Personalization: Adaptive learning provides a personalized learning experience tailored to each student's strengths, weaknesses, and learning preferences.
- Efficiency: Students can progress at their own pace, making learning more efficient.
- Feedback: Adaptive learning provides immediate feedback to students, allowing them to correct mistakes and improve their understanding.
- Engagement: Adaptive learning is more engaging and interactive than traditional learning methods because it provides students with challenging yet attainable learning activities.

Disadvantages:

- Cost: The development and implementation of adaptive learning can be expensive.

- Technical difficulties: Adaptive learning requires sophisticated technology, which may not always work seamlessly, leading to technical issues.
- Limited subject areas: Adaptive learning is most effective in subjects that can be broken down into discrete learning objectives, making it less effective in other topics.

2) Gamification

Gamification means using game design principles in non-game contexts, e.g., education. The idea behind gamification is to make learning, especially self-paced, more engaging, interesting, and fun. Using specific mechanics in course scenarios, teachers can prepare something more attractive for Gen Z and younger generations. Through gamification, recipients should experience the same or at least similar emotions as they do playing their favorite games.

The most popular gamification framework is the Octalysis Framework, designed by Yu-kai Chou, an author and international keynote speaker in gamification and behavioral design. The framework is a detailed instruction for human behaviors, feelings, emotions, and motivations, and that's why Chou highlights his idea as a human-focus design.

Advantages:

- Engagement: Gamification makes learning more fun and engaging, which can lead to higher levels of student motivation and participation.
- Immediate feedback: Gamification provides immediate feedback to students, allowing them to see their progress and adjust their approach to the learning material.
- Skill-building: Gamification can help students develop essential skills such as problem-solving, critical thinking, and decision-making.
- Long-term retention: Gamification can help students retain knowledge for more extended periods.

Disadvantages:

- Limited applicability: Gamification may not be suitable for all types of learning material, as it can be challenging to gamify certain subjects.

- Over-reliance: Over-reliance on gamification can lead students to focus more on the game elements than the learning material.
- Cost: Developing and implementing gamification can be expensive.
- Time-consuming: Creating functional gamification activities can be time-consuming and require specialized skills.

3) Virtual Reality Education

Virtual reality is another area where we've seen e-learning innovation take off in recent years. It is becoming more and more popular in education as well as entertainment, but it's not just about gaming anymore. There are many applications for VR in education that will benefit students and teachers alike. For example, VR can be used for training simulations where students learn how to perform tasks without actually doing them physically (such as operating machinery). This helps reduce injuries from workplace accidents while providing valuable training opportunities. Also, VR lets students experience things they may not be able to do otherwise — from visiting museums around the world without leaving home to doing an anatomy lesson on an operating table without cutting open a cadaver.

Advantages:

- Immersive learning: Virtual reality can provide an immersive learning experience, allowing students to experience and explore environments that are impossible in the real world.
- Engagement: Virtual reality can be more engaging than traditional learning methods, capturing students' attention and increasing motivation.
- Active learning: Virtual reality encourages active learning, as students must interact with the learning material and make decisions.
- Accessible: Virtual reality can be accessed from anywhere, allowing students to learn flexibly and conveniently.

Disadvantages:

- Cost: The cost of developing and implementing virtual reality can be expensive.
- Technical difficulties: Virtual reality requires sophisticated technology, which may not always work seamlessly, leading to technical issues.
- Limited subject areas: Virtual reality is most effective in subjects that can be visualized, making it less effective in other subject areas.
- Limited availability: Virtual reality may not be accessible to all students, requiring specialized equipment and technology.

4) Data Analytics in Education

Data analytics is another area where educators use technology to improve student performance in school environments by analysing data collected from devices like tablets or smartphones and software like user accounts on e-learning platforms and using that information to create reports that show what areas are problematic, boring, too easy, too complicated, etc. The main goal of implementing data analytics in the education sector is the improvement of teaching methods based on user experience.

Advantages:

- Personalization: Data analytics can provide a personalized learning experience tailored to each student's strengths, weaknesses, and learning preferences.
- Insights: Data analytics can provide insights into student performance, allowing educators to identify improvement areas and adjust their teaching approach.
- Efficiency: Data analytics can make the learning process more efficient by identifying areas where students need extra support and providing targeted interventions.
- Continuous improvement: Data analytics can help educators continuously improve their teaching methods and learning materials.

Disadvantages:

- Privacy concerns: The use of data analytics raises privacy concerns, as student data may be collected and used in ways that students and parents disapprove of.

- Technical difficulties: The collection and analysis of data require sophisticated technology, which may not always work seamlessly, leading to technical problems.
- Cost: The development and implementation of data analytics can be expensive.
- Misinterpretation: Data analytics may be misinterpreted, leading to incorrect conclusions and decisions.
- Bias: Data analytics may be biased if the data collected does not represent the student population or the algorithms used to analyze the data are biased.
- Limited applicability: Data analytics may not be suitable for all types of learning material or teaching styles.
- Over-reliance: Over-reliance on data analytics can lead to educators focusing more on the data than on their professional judgment and experience.
- Inaccessibility: Data analytics may not be accessible to all educators, requiring specialized skills and training.

These four abovementioned trends share a common goal of enhancing the learning experience for students by utilizing technology and data-driven approaches. Each offers unique advantages such as personalized learning, engagement, immersive learning, and insights into student performance while posing challenges such as technical difficulties, cost, and limited applicability. Overall, these trends demonstrate the increasing role of understanding human-machine interaction in designing educational materials and environments regarding a user-oriented approach. We consider it a crucial factor in teaching and learning as educators strive to improve student outcomes and prepare them for future success.

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Comparison of the DigComp Framework with the E-learning Trends and DigiWork project goals

DigComp 2.2 - The Digital Competence Framework for Citizens

Digcomp 2.2. was developed by the Joint Research Centre (JRC) of the European Commission. This framework provides the basis for framing digital skills policy by creating a “*scientifically solid and technology-neutral basis for a common understanding of digital skills and framing policy.*”² DigComp framework is part of the effort to improve the citizens’ digital competence since digital competence is one of the eight Key Competences for Lifelong Learning.

The first version of the DigComp framework was published in 2013³ and since then it has undergone a series of updated versions, with the latest version being published in the year 2022 under the name DigComp 2.2⁴.

DigComp 2.2 defines 21 competences and divides them into five areas of digital competences (see Fig. 1). One’s mastery regarding these competences can be described by a certain proficiency level, numbered from 1 (lowest) to 8 (highest). A self-reflection tool DigCompSat has been developed that helps assess all 21 DigComp competences corresponding to proficiency levels 1 to 6.⁵

² Vuorikari, R., Kluzer, S. and Punie, Y., DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes

³ Punie, Y. and Brecko, B., editor(s), Ferrari, A., DIGCOMP: A Framework for Developing and Understanding Digital Competence in Europe.

⁴ Vuorikari, R., Kluzer, S. and Punie, Y., DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes.

⁵ Clifford, I., Kluzer, S., Troia, S., Jakobson, M. and Zandbergs, U., DigCompSat,

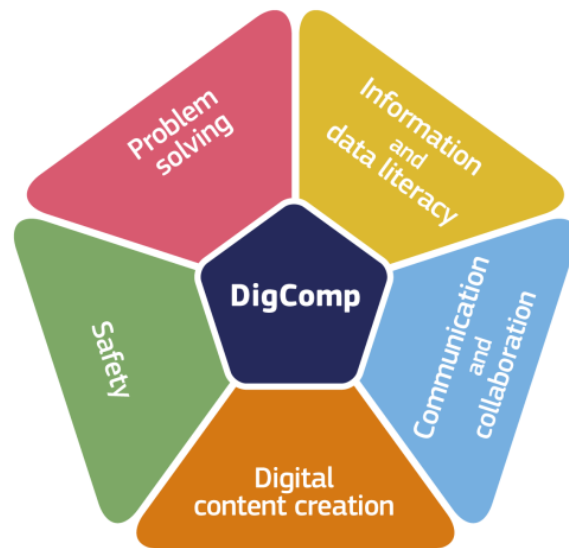


Figure 1 Five areas of digital competence according to DigComp 2.2. (Adopted from https://joint-research-centre.ec.europa.eu/digcomp/digcomp-framework_en)

Competences corresponding to each of the digital competence areas are listed in the DigComp 2.2⁶ as follows:

Area 1: Information and data literacy

- 1.1 Browsing, searching and filtering data, information and digital content.
- 1.2 Evaluating data, information and digital content
- 1.3 Managing data, information and digital content

Area 2: Communication and collaboration

- 2.1 Interacting through digital technologies
- 2.2 Sharing through digital technologies
- 2.3 Engaging citizenship through digital technologies
- 2.4 Collaborating through digital technologies
- 2.5 Netiquette

⁶ Vuorikari, R., Kluzer, S. and Punie, Y., DigComp 2.2: The Digital Competence Framework for Citizens - With new examples of knowledge, skills and attitudes.

2.6 Managing digital identity

Area 3: Digital content creation

3.1 Developing digital content

3.2 Integrating and re-elaborating digital content

3.3. Copyright and licences

3.4 Programming

Area 4: Safety

4.1 Protecting devices

4.2 Protecting personal data and privacy

4.3 Protecting health and well-being

4.4 Protecting the environment

Area 5: Problem solving

5.1 Solving technical problems

5.2 Identifying needs and technological responses

5.3 Creatively using digital technology

5.4 Identifying digital competence gaps

When assessing the alignment of the DigComp framework with e-learning trends, it is noticeable that DigComp as a technology-neutral framework of digital competences does not prescribe certain technologies (such as virtual reality learning) or methodologies (such as adaptive learning) for the educational process. However, it can provide a reference framework that can be used to implement adaptive learning using data analytics for digital competence education.

If a course is implemented in such a way that it includes data on the correspondence of topics to DigComp competence levels, then the system could analyze data collected from devices. If it concludes that some topic is problematic for a certain learner (either too

complicated or too easy), the system can use the DigComp framework to find a topic of the appropriate level.

The use of virtual reality in education aligns with the broader goals of DigComp to enhance digital competence and skills. It can help gain higher proficiency levels of competences that involve performing tasks that could be dangerous or expensive to do in a real-life situation.

The contents of the e-learning courses that will be created within this course do not directly correspond to the competences included in the DigComp 2.2. framework, but the set of 18 courses covers most of the competences from this framework at least partially. The correspondence between the courses and DigWork competences is represented in Table 1. Thus, it is reasonable to claim that by taking the full set of courses learners can comprehensively improve their digital competences.

Table 1. Correspondence between Courses developed within the DigiWork project and competences included in DigComp 2.2. framework

Course	Corresponding DigComp competence/ - es
PATH 1: First and foremost: DATA	
1. Data protection and privacy in digital services EU data protection rules	4.1 Protecting devices
	4.2 Protecting personal data
2. Business data evaluation and big data management	1.1 Browsing, searching and filtering data, information and digital content.
	1.2 Evaluating data, information and digital content
	1.3 Managing data, information and digital content
	5.2 Identifying needs and technological responses
3. Managing, integrating, and analyzing data inside and between organizations	1.1 Browsing, searching and filtering data, information and digital content
	1.2 Evaluating data, information and digital content
	1.3 Managing data, information and digital content
	3.2 Integrating and re-elaborating digital content

PATH 2: Work-flow 4.0: Supply Chain Fundamentals	
1. Smart-working and technologies enabling digitization in operational processes	2.1 Interacting through digital technologies
	2.2 Sharing through digital technologies
	2.4 Collaborating through digital technologies
	3.1 Developing digital content
2. Document management systems and digitization of workflows	1.3 Managing data, information and digital content
	2.2 Sharing through digital technologies
	2.4 Collaborating through digital technologies
	5.2 Identifying needs and technological responses
3. Supply chain certification and automatic process verification/ accountability	1.2. Evaluating data, information and digital content
	5.2 Identifying needs and technological responses
PATH 3: How to Start from Scratch to Production 4.0	
1. Governance of digitalization in the manufacturing sector and workplace	2.4 Collaborating through digital technologies
	4.1 Protecting devices
2. Digital integration for production assets and online services	5.1 Solving technical problems
	5.2 Identifying needs and technological responses
	5.3 Creatively using digital technology
3. Digital inefficiencies and risks in professionals' environments	4.1 Protecting devices
	4.2 Protecting personal data and privacy
PATH 4: Advanced Intelligent Manufacturing	
1. Automation systems integration and smart factories	5.2 Identifying needs and technological responses
2. Advanced robotics and human-robot collaboration	2.1 Interacting through digital technologies
	4.3 Protecting health and well-being
	5.2 Identifying needs and technological responses
3. Additive manufacturing	5.2 Identifying needs and technological responses
PATH 5: Industry 4.0: Benefits and Challenges	
1. Energy savings and environmental impact of production systems	4.4 Protecting the environment
	5.2 Identifying needs and technological responses
2. Virtual and augmented reality	2.1 Interacting through digital technologies



	3.1 Developing digital content
3. Rethinking the work, job crafting, and virtual lean teams	2.1 Interacting through digital technologies
	2.2 Sharing through digital technologies
	2.4 Collaborating through digital technologies
PATH 6: Human-machine interaction and smart computing technologies	
1. Internet of Things (IoT) in combination with advanced connectivity (5G)	3.1 Developing digital content
	4.1 Protecting devices
	5.1 Solving technical problems
	5.2 Identifying needs and technological responses
2. Human-machine interaction, touch interfaces, and accessible GUIs	5.3 Creatively using digital technology
	2.1 Interacting through digital technologies
3. Artificial intelligence and expert systems AI	4.3 Protecting health and well-being
	2.1 Interacting through digital technologies
	3.2 Integrating and re-elaborating digital content
	5.1 Solving technical problems
	5.2 Identifying needs and technological responses

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Methodology: the DigiWork approach

Our task was to choose one approach to meet the goals of this project. We could have chosen a single solution or a hybrid of several trends and methods. After analyzing the possibilities, opportunities, and obstacles we have, as Partners, we decided on the user-oriented strategy for the e-learning modules we will design in Result 3 and the e-learning platform we will deliver in Result 4. As you can read in the introduction, all increasing popularity trends in education today — adaptive learning, gamification, VR education, and data analytics — are based on this approach. That is why we believe our content and software will be up-to-date, attractive, effective, and meaningful.

To begin with, we will explain exactly what the user-oriented approach is. It is often referred to as a philosophy, framework, and methodology in which the most important is to place the user or end-user at the heart of the design and development process of products, services, processes, and systems. This strategy is founded on the belief that the user experience should be at the forefront of the creation process and that user feedback and input should be incorporated throughout the entire lifecycle of a product or service.

The user-oriented approach involves conducting user research to understand user needs, preferences, capabilities, limitations, and behaviors and using this information to create designs tailored to the user's specific requirements. Moreover, it involves so-called iterative testing and evaluation to ensure that the products, services, processes, or systems meet the user's demands and are easy to use.

Iterative testing is a process of continuous testing and refining of a design during its development to ensure it fulfils expectations. It involves conducting multiple rounds of testing and gathering feedback, including usability testing, A/B testing, focus groups, and surveys. As an analogy, iterative evaluation is a process of continuous and ongoing evaluation of a program, policy, or project throughout its implementation to assess its effectiveness, identify areas for improvement, and make necessary adjustments.

By adopting a user-oriented approach, organizations can create products, services, processes, and systems that are more useful, efficient, and satisfying for users. According

to all available data, this strategy can help reduce development costs, increase user satisfaction, and improve quality.

User-oriented approach

The user-oriented approach has been proven to improve educational programs' significance and efficiency because it helps educators focus on what students need to succeed in their studies instead of rating what has to be done without insight into capabilities. Below, we listed the main **advantages in disadvantages of implementing the user-oriented approach in e-learning in education.**

Advantages:

1. Improved user satisfaction: By focusing on the needs and preferences of the learner, e-learning products and services are more likely to meet the end-user's expectations and provide a satisfying learning experience.
2. Higher engagement and motivation: User-oriented e-learning design can increase learner engagement and motivation by creating interactive, personalized, and immersive learning experiences that appeal to learners' interests and preferences.
3. Better learning outcomes: A user-oriented approach can improve learning outcomes by providing learners with content and activities tailored to their needs and learning styles, resulting in higher retention rates and deeper learning.
4. Reduced development costs: By incorporating user feedback early in the development process, e-learning products and services can avoid costly design flaws and revisions.
5. Increased adoption rates: User-oriented e-learning products and services are more likely to be adopted by learners, leading to higher usage rates and greater return on investment.

Disadvantages:

1. Time-consuming: Incorporating user feedback and iterative testing into the design process can be time-consuming and require additional resources.
2. Limited applicability: User-oriented design may not be suitable for all types of e-learning content or teaching styles.
3. Technical difficulties: Developing user-oriented e-learning products and services may require specialized technical skills and resources.
4. Cost: The additional resources required for user-oriented design may increase development costs.
5. Incomplete feedback: User feedback may not represent the entire learner population, leading to design decisions that do not benefit all learners.

Our products and users

The user-oriented approach requires designers to focus on their users' needs, abilities, preferences, expectations, and concerns, which — in summary — is called an experience. It emphasizes the importance of understanding who will use a product before starting a design process. **In this project, we will create two types of products:**

- **content:** 18 e-learning modules on Industry 4.0 divided into 6 educational paths (in Result 3)
- **software:** an e-learning platform (in Result 4).

The 18 modules mentioned above will be designed as e-learning content, including multiple multimedia documents and features. Firstly, they will be produced by all Partners in English and then translated into each Partner's native language. In total, we get materials in 7 European languages. After creation, they will be available on the DigiWork online platform and ready to use by our target group.

According to the project's objectives, our users are primarily students, meaning young people: representatives of Gen Z and younger generations. We are aware of the fact that students have a strong affinity for technology, look for innovations, know contemporary trends, are early adopters of new technologies, and are open-minded in giving feedback when something is bland, irrelevant, old-school, or unjustifiable.

Targeted audience

We spent much time researching and understanding our target audience. Given that and our experience, we established as follows:

1. **So-called digital natives:**

Gen Z and younger generations are often called digital natives because they grew up with technology and had a natural fluency in its use. As digital natives, members of Gen Z and younger generations have a unique relationship with technology that sets them apart from previous generations. They are accustomed to having access to a wide range of digital devices and platforms from a young age, which has shaped their communication, socialization, and learning styles. This familiarity with technology has also led to new skills and competencies, such as digital literacy, online safety, and the ability to navigate complex digital environments.

However, being a digital native also comes with its challenges. The constant presence of technology can lead to addiction and dependence, which can negatively impact mental health and social relationships. Furthermore, digital natives may face difficulties separating their online and offline identities and distinguishing between fact and fiction in the vast amount of information available online.

Overall, being a digital native has both advantages and disadvantages. While technology has opened up new possibilities for communication, creativity, and innovation, digital natives must develop a critical and ethical perspective on using technology to navigate the complex and rapidly changing digital landscape.

2. **Mobile First and Only:**

Mobile devices have become an integral part of the daily lives of Gen Z and younger generations, who use them for various purposes beyond communication, such as entertainment, social networking, education, and online shopping. Mobile devices provide unparalleled convenience, flexibility, and mobility, allowing users to access information and services anywhere and anytime. They also offer a personalized and immersive experience

thanks to advanced features such as touch screens, facial recognition, and augmented reality.

Nevertheless, heavy reliance on mobile devices can also have negative consequences, such as addiction, distraction, the constant need for connectivity, and instant gratification, leading to FOMO (fear of missing out), anxiety, sleep disorders, and eye strain.

Despite these challenges, mobile devices are here to stay and will continue to shape how Gen Z and younger generations interact with the world. As such, universities and companies must promote the responsible, balanced, but also attractive use of mobile devices, considering the potential benefits and risks.

3. Multitasking:

Gen Z and younger generations are known for their ability to multitask and use multiple devices simultaneously, a behavior often referred to as "media multitasking." For instance, they may listen to music while browsing social media, play video games while streaming movies, or use a phone while watching TV or doing homework. This type of multitasking is made possible by the ubiquitous availability of technology and the seamless integration of different devices and apps.

When designing e-learning experiences for Gen Z and younger generations, it is crucial to remember their tendency to multitask and use multiple devices simultaneously. However, research suggests that multitasking can impair cognitive performance, memory, and attention span, leading to a sense of overload, lower quality of work and communication, and stress. Therefore, e-learning designers should aim to minimize distractions and promote focused attention by designing clear and concise content, providing interactive and engaging activities, and incorporating breaks and opportunities for reflection. It is also essential to encourage learners to adopt a mindful and intentional approach to their use of technology and to promote strategies for minimizing the harmful effects of media multitasking.

4. Instant Gratification:

Gen Z and younger generations expect instant gratification and technology to deliver results quickly. The rapid pace of technological innovation and the pervasive influence of

social media and the Internet have fueled these desires. Young people are used to having access to information, services, feedback, and rewards at their fingertips. This mindset can also impact their education demands.

For instance, they may immediately seek feedback and results from assessments and assignments. Of course, it can lead to misleading complex topics, unstable motivation, a lack of patience for learning, and decreased engagement if expected gratification is not provided.

That is why e-learning designers must balance meeting Gen Z's and younger generations' expectations for fast results and providing a purposeful and meaningful learning experience. It may involve using technology to deliver small doses of knowledge (micro-learning), divided into personalized learning pathways, automatically generating regular summaries through the system (instant feedback), and stimulating critical thinking, problem-solving, and metacognitive skills.

Gamification approach

The need for instant gratification is rooted in social factors and can vary depending on culture (country, region, social group), followed values, and individual perspective on technology consumption. An undoubted contribution to the development of instant gratification comes from **games**. Gen Z and younger generations are more active gamers than previous generations, and they prefer online and mobile games that allow them to play with friends and compete against others. Given that, already mentioned in the introduction, **gamification** as a trend in education is a great idea to execute.

Implementing gamification in the learning experience can include game-like mechanics, such as points, virtual badges, leaderboards, and certificates ready to share on social media, encouraging learners to track their progress, perform tasks regularly, and complete learning activities step-by-step as they get small prizes for each one.

5. Social Media:

Gen Z and younger generations are heavy social media users, which plays a significant role in their daily lives. They use social media platforms for almost everything: communication, entertainment, work, business, and keeping up with news and trends. It provides them a space for self-expression, social connection, and information research and sharing. It is also a source of entertainment, where they can consume and create various forms of content, such as photos, graphics, videos, memes, and stories.

Moreover, social media has transformed the way businesses and brands interact with their audience, offering new opportunities for advertising, e-commerce, influencer marketing, and... sharing knowledge! A popular trend of sharing knowledge via social media by businesses, as well as by educational brands and universities, is **social media learning**.

Social media learning refers to using social media platforms (like Facebook, Instagram, and TikTok) and features (like Facebook groups) for educational purposes. Social media can provide learners and educators with new opportunities for collaboration, communication, engagement, and access to a vast array of online resources and communities. Social media learning can take various forms, such as online courses, MOOCs (Massive Open Online Courses), webinars, podcasts, blogs, wikis, and social networks. They can also facilitate informal and lifelong learning, where individuals can acquire new skills and knowledge outside the traditional educational system. Nevertheless, it is worth noting that social media learning also raises challenges related to privacy, credibility, quality, and accessibility, which need to be addressed by educators and learners alike.

In general, social media can have harmful outcomes, such as cyberbullying, social comparison, and addiction. As using them in various spheres of life, including education, continues to evolve and shape how people interact and communicate, educators must promote digital literacy and media literacy skills, which can help individuals navigate the complex landscape of social media and develop critical thinking and self-reflection. It is essential for individuals to be aware of these risks and to use social media responsibly and healthily.

6. **Mental Health:**

Gen Z and younger generations are more open about discussing mental health and often use technology to access related resources and support. That is why e-learning

designers should consider incorporating mental-health-supporting factors into their e-learning experiences. The most obvious way to implement this practice is by including resources such as online counseling services, mental health assessments, and peer support forums. However, for obvious reasons, this will not fit every type and topic of e-learning. That's why we have a list of other suggestions.

E-learning designers should ensure that their content is inclusive and addresses the mental health needs of diverse learners, including those with disabilities, neurodiverse users (on the autism spectrum, with ADHD, with dyslexia, etc.), LGBTQ+ learners, and those from diverse cultural backgrounds. Creating a safe and supportive learning environment that promotes well-being and encourages learners to seek help when needed is essential. E-learning designers can achieve this by designing straightforward content and clear instructions that eliminate stress, ambiguity, exclusion, and discrimination.

7. Authenticity:

Gen Z and younger generations value authenticity and transparency in brands and influencers and are more likely to engage with genuine and honest content. Given that, e-learning designers should prioritize creating simple and direct online content that reflects the needs and interests of learners. It can be achieved by involving learners in the content creation process through user-centered design, which is exactly the approach we chose for this project. It involves methods such as observation of target groups, research, data collection, surveys, gathering feedback, focus groups, and user testing.

Additionally, e-learning designers should strive to create relevant, relatable, practical content that addresses real-world challenges and opportunities. Considering the subject of the DigiWork project, i.e., Industry 4.0, we believe we will also meet this condition of authenticity.

We are aware that this is also important for students to create a sense of community and social connection in e-learning experiences, where learners can engage with peers and experts, share experiences and feedback, and collaborate on projects and assignments. It can be facilitated through online discussion forums, peer feedback mechanisms, and group projects, which our stakeholders (universities and other institutions) can implement directly using the content and platform we will provide them.

Finally, e-learning designers should prioritize transparency and openness in their communication with learners by providing clear information about the learning objectives, expectations, and outcomes of the e-learning experience, as well as by being responsive and respectful to learner feedback and concerns. By creating authentic and transparent e-learning experiences, all educators engaged in an online course (responsible for creating, promoting, and integrating into university curricula) can build trust and engagement with learners and create a more meaningful and impactful learning experience.

8. Sustainability:

Gen Z and younger generations are more environmentally conscious than previous generations and expect brands to take a stance on social and environmental issues. Moreover, they are more likely to engage in **online activism** and social causes, using social media to raise awareness and organize protests. Considering that, e-learning designers may consider incorporating sustainability and social responsibility themes into the e-learning experiences. It can include sustainable development, climate change, social justice, and ethical business practices. While creating the focus of our project, which is Industry 4.0, we assumed the design of 18 training modules, among which we will also include issues that respond to these students' needs, for instance, smart-working, energy savings, and the environmental impact of production systems.

We had already mentioned before that, in our opinion, all educators should strive to create a safe and inclusive learning environment that respects the diversity and unique perspectives of learners and fosters critical thinking and informed citizenship. We believe universities and businesses can achieve it by incorporating our platform's content as a starting point to promote respectful and constructive dialogue and organize debates with diverse perspectives and voices.

Moreover, to ensure that their e-learning experiences align with the values and expectations of younger generations, e-learning designers should prove a commitment to sustainability, social responsibility, and ethical conduct by using environmentally friendly and socially responsible technology platforms, reducing waste and energy consumption, and engaging in transparent and ethical business practices. The project's Partner accountable for quality assurance has made every effort to ensure that the platform we will develop meets

these values. The analysis of various platforms can be found in the following pages of this report.

9. Entrepreneurial Spirit:

Gen Z and younger generations have a strong entrepreneurial spirit and are more likely to start their own businesses than previous generations. Regarding that fact, e-learning designers should consider incorporating entrepreneurial skills and knowledge and, principally, their practical application into the e-learning experience. It can be realized by showing real-world case studies, presenting business and creative methods (like design thinking), analyzing marketing and financial statistics, organizing simulations, and discussing with business leaders. Moreover, based on our platform's content, universities can manage many other activities, like group projects, mentorship programs, and networking.

10. Visual Content:

According to social media and web statistics, Gen Z and younger generations prefer visual content such as videos, images, and infographics over written content. E-learning designers should take note of this preference for visual content and prioritize incorporating visual elements into their e-learning experiences. At the content level, it can be achieved using videos, photos, graphics, schemes, and infographics to convey complex information in a more engaging and digestible format. At the online platform level, designers should also strive to create visually appealing and intuitive user interfaces that enhance the learning experience and reduce cognitive overload.

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Empathy map

Based on the previous analysis, we created an empathy map of our user, which simultaneously summarizes the above information.

User: student, young person, representative of Gen Z or younger generation	
<p>SAYS:</p> <ul style="list-style-type: none"> • "I am a digital native, and technology has always been part of my life." • "I need fast results." • "I'm feeling overwhelmed with my workload." 	<p>THINKS:</p> <ul style="list-style-type: none"> • "I use technology to succeed in my career and solve real-world problems." • "I don't think I can finish everything on time." • "I need personalized and engaging learning experiences, nothing boring and outdated." • "E-learning has to meet my expectations to be available on mobile devices."
<p>DOES:</p> <ul style="list-style-type: none"> • Takes on too much work and stays up late trying to finish everything • Tries multitasking but it's distracting • (Almost) never disconnect from mobile devices 	<p>FEELS:</p> <ul style="list-style-type: none"> • Excited about the possibilities of technology • Happy to connect with people whenever and wherever s/he wants • Also overwhelmed by the constant need to be connected and the pressure to keep up with the fast pace of change • Stressed and anxious
<p>PAINS:</p> <ul style="list-style-type: none"> • Fear of missing out, addiction, distraction 	



- Difficulty separating online and offline identities
- Feeling overloaded by multitasking and information overload
- Worried about mental health, online safety, and privacy

GAINS:

- Increased digital literacy, new skills and competencies
- Personalized and immersive experiences
- Social connections and self-expression opportunities
- Access to a wide range of digital devices and platforms, and the ability to navigate complex digital environments
- A mindful and intentional approach to technology use and strategies to minimize the harmful effects of media multitasking
- Opportunities for reflection and critical thinking
- Small doses of knowledge, instant feedback, and game-like mechanics that support tracking progress, performing tasks regularly, and completing learning activities step-by-step

Source:

<https://www.nngroup.com/articles/empathy-mapping/>

Gen Z and younger generations have grown up in a world where technology is ubiquitous, and they are more accustomed to relying on digital tools than their older counterparts. It means that when it comes to education, Gen Z and younger generations not only desire to be able to use technology as part of their learning process but also expect modern implementation.

The motivation of our users is crucial if we want to attract them to our educational content and platform and keep them engaged once they are there. Moreover, today's students' motivation should also be essential for universities and companies. In the case of lack of engagement, whether on the part of the student or the educator, universities won't provide their students with the skills they need to succeed in today's world. Consequently, young people may be unable to find their business path, become part of some company or find a work-life balance.

As Project Partners, we are aware that our mission is to create an engaging and practical learning experience that meets the needs and preferences of the learners.

Therefore, we have created for us and others an e-learning designer **checklist** divided into 3 stages: the initial, content creation, and online platform development. Expert from V-S recommends that:

The initial stage should include the following:

1. Understanding the target audience: To design e-learning content and platforms that effectively meet users' learning goals and expectations, it is essential to gather and analyze their needs, preferences, and behaviors.
2. Ideating engaging content: An e-learning designer should have a deep understanding of the learners' needs, problems, and learning preferences, to create e-learning experiences that are tailored to their needs.
3. Learning objectives: Define clear learning objectives for each module and ensure that the content is designed to meet these objectives.
4. E-learning outline: An e-learning designer should create an outline of the e-learning before s/he starts building it. The summary should include, among other things: the topics covered, the number and approximate length of modules in the course, ways to present information, and user involvement methods.
5. Incorporating active learning strategies: Also, before creating content, an e-learning designer should plan experiences that encourage learners to engage actively with the content, such as quizzes, simulations, and case studies.
6. Ensuring accessibility: Consideration of accessibility should begin while the initial design phase begins, but it should never really end. E-learning experiences should be accessible to learners as much as possible, supporting diversity and inclusion.

The content creation stage should include the following:

1. Clarity and simplicity: Ensuring the content is presented clearly and concisely, avoiding jargon and overly complex language.
2. Visual design: An e-learning designer should use suitable visuals to make the content visually appealing, with clear and concise diagrams, images, and videos.

3. Interactive elements: Also, an e-learning designer should review the previous outline, rethink all ideas, and incorporate adequate interactive features, such as quizzes, simulations, and activities, to keep students engaged and reinforce learning.
4. Accessibility: Once again, it is a good moment to check whether the content is accessible to all students, regardless of their abilities or disabilities
5. Providing immediate feedback: As e-learning experiences should provide learners with immediate feedback on their performance to reinforce learning and encourage progress, online courses must deliver some elements, like progress bars, leaderboards, or virtual badges.
6. Content relevance re-considering: Last chance to ensure that the content is relevant to the target group, which in this case is students, and is presented in a manner that is appropriate for their level of knowledge.

The e-learning platform stage should include the following:

1. Incorporating social learning: E-learning experiences should include opportunities for learners to connect and collaborate with their peers to promote social learning and exchange ideas. An e-learning designer should add the possibility of adding comments to the content on the platform or brainstorming in a closed environment.
2. Ease of use: A delivered platform should be easy to use and navigate, with an intuitive design and a straightforward user interface.
3. Functionality: A delivered platform should provide all necessary functionality for students to access the content, track their progress, and interact with other students.
4. Compatibility: A delivered platform should be compatible with a wide range of devices and web browsers to make it accessible to as many students as possible.
5. Security: To protect student data, a delivered platform should be secure and meet data privacy requirements.
6. Feedback and assessment: A delivered platform should provide feedback and assessment tools, like points, progress bars, or summaries of students' activities, to help learners track their progress and identify areas they need to improve.
7. Support: A delivered platform should give adequate support to students, such as technical support, to ensure they can use it effectively.

Objectives of the Chosen Methodology

The task of Project Partner is to create a methodology focused on integrating a variety of functions that will be adapted to the dynamic needs of education in the field of Industry 4.0. Its goal is to create not only an innovative educational platform, but also an inclusive e-learning environment. It takes into account accessibility, multilingualism, takes care of a user-friendly experience, and considers the most important aspects - from technical specifications to organizational requirements. The first part of this chapter will focus on the basic objectives of the chosen methodology. In contrast, the second part will explain the European EQAVET framework and how the DigiWork methodology was developed based on this framework.

Basic objectives of the methodology

1. Alignment and Learner Autonomy:

The methodology involves extensive and insightful customization of the learning process to meet the individual needs of each student. By using the modular structure of the training tools, it is possible to customize the learning paths in such a way that they are adequate to the capabilities, characteristics and interests of the learner. The platform is to become an environment where the student independently manages his own learning process, adjusting the pace under him and choosing the content he is interested in.

Not only the educational path itself is adjusted, but also the development trajectory of each participant is personalized. This is made possible by tracking progress and adjusting goals to the individual's achievements. This helps ensure a personalized and rewarding educational experience.

In addition, the methodology takes into account the dynamic pace of technology, so it adapts to digital changes. Its main goal is to develop adaptability, enabling the individual to efficiently navigate the dynamic educational environment. The use of modern tools and technologies allows facilitating the process of self-learning and individual exploration of knowledge.

2. Enrichment through Cooperation:

The methodology emphasizes the active participation and involvement of all Project Partners, and is not limited to traditional institutions and tools in higher education. Each Partner, regardless of specialization, brings valuable insights and individual experience. Bringing different qualifications together under one project makes the training program itself richer and more attractive.

It is critical to create an open ecosystem where diversity of personalities, perspectives, experiences and skills contribute to a balanced and comprehensive educational program. Because of this diversity, collaboration and openness are key. Collaboration with Partners from outside higher education institutions is an integral part of this methodology. Cross-sector dialogue stimulates creative approaches to training program development. Collaboration within the project is not only to enrich educational content, but also to lead to the creation of innovative consortia.

In addition, there is an integration of knowledge domains. By involving Partners with diverse expertise and fields of knowledge, there is an opportunity to create an interdisciplinary approach that allows for a better understanding of the complex problems and challenges that students may face in their future work.

3. Practical Application in Various Fields:

The methodology aims to promote intelligent use of training content in various areas at universities as well. When theoretical knowledge alone is insufficient, it is necessary to activate participants to apply it in practice as well. For this reason, it is essential to eliminate the gap between theory and practice. This allows students to obtain specific results in their field immediately after completing the training.

The methodology takes into account a variety of contexts for the application of specific skills, which makes the program not only attractive, but is above all oriented to real professional challenges. This is possible because of the use of practical simulations. They allow students to directly apply newly acquired skills in a controlled environment. As a result,

they can better prepare themselves for potential challenges in future work. Taking into account cooperation with industry representatives, participants do not work only with theoretical scenarios, but also learn about the real needs of the labor market. Partnerships with companies and institutions ensure that the training program responds to current trends and employers' expectations.

4. Incorporating Existing Knowledge:

The methodology is based on in-depth analysis and incorporation of already existing knowledge in the project areas. By conducting preliminary knowledge mapping, the program includes articles, educational materials, scientific studies, economic and social analyses, implementation models, sector studies, previous projects and statistical data.

However, it is worth noting, that the project does not aim to duplicate and reuse available content, but primarily to enrich existing knowledge with new and innovative elements. It takes into account experiments and pilot projects as additional sources of knowledge. Referring to the aforementioned bridging of the gap between practice and knowledge, the methodology involves a variety of tests aimed at exploring practical aspects and evaluating the effectiveness of various educational approaches. The methodology focuses on a variety of knowledge sources to provide a solid foundation for a training program based on current research and analysis.

5. Stakeholder Engagement:

The methodology implies the active involvement of stakeholders at every stage of the project. This is made possible by partner countries organizing special events to take into account the opinions of different groups, such as universities, government institutions, industry associations, employment agencies or local development associations.

It is crucial to coordinate activities in such a way as to promote participatory decision-making processes, where stakeholders are actively involved in shaping the project's goals and content. It is important to get initial feedback on the identified needs, content and sustainability of the project objectives. The goal of the methodology is for Project Partners to be aware of the project's tasks and activities early on in the project. This approach, which

is also based on the aforementioned collaboration, increases commitment and ensures that the project is indeed tailored to the real needs of the participants.

To ensure a smooth flow of information, the methodology takes into account a variety of collective communication channels. This ensures that Project Partners and stakeholders are in constant contact and that collaboration is effective. Regular meetings, conferences, and online tools are used to maintain transparency and active dialogue throughout the project.

6. Integrated Performance Evaluation Tools:

As part of this goal, the methodology focuses on developing a comprehensive set of tools and indicators. With these, it is possible to accurately assess the effectiveness of the training program. The system will include not only traditional criteria, such as academic grades, exam results, etc., but also soft skills - interpersonal skills, ability to work in teams, initiative in personal development or practical skills. With this approach, the evaluation system will be more dynamic, diverse, reflect the full range of participants' achievements, and adapt to changing market requirements.

7. Monitoring Individual Progress:

One of the important elements of teaching is the ability to monitor the progress of each participant. The implementation of such a system allows you to tailor the training trajectory to the individual needs of students. Thanks to advanced technologies, it is possible to personalize the educational path, taking into account the level of difficulty of tasks and pace, which has a direct impact on learning outcomes.

Students on the platform have access to a progress panel, where they will check basic statistics on grades, scores, completed courses and other achievements. They receive personalized reports on the training path taken, skills developed, and recommendations for further learning by suggesting courses or additional assignments.

This interactive progress-monitoring system not only provides students with real-time data about their education, but also allows them to customize their learning path to meet their individual needs and goals.

8. Integration of Modern Educational Technologies:

One of the objectives of the projects is to actively promote modern educational technologies, such as AI, virtual reality and gamification. The choice of such tools not only has an impact on increasing the attractiveness of the program. Above all, it provides students with innovative and interactive experiences in their learning path.

- **AI:** using machine learning algorithms to personalize learning paths, adjusting the difficulty level of tasks and providing personalized development recommendations.
- **Virtual Reality:** the creation of interactive simulations that enable practical application of knowledge in a controlled virtual environment.
- **Gamification:** using game elements to motivate participants, reward progress and create interactive learning scenarios.

With this approach, it is much easier to reach younger generations who use advanced technologies on a daily basis.

9. Cooperation with Enterprises:

The methodology involves working with businesses to further align the curriculum with current and actual market needs:

- **Participation in Content Shaping:** Enterprises actively co-create training content, adapting it to current labor market needs.
- **Internship Offers:** providing participants with access to real-world work experience through internship offers from program partners.
- **Practical Workshops:** Regular workshops led by business representatives allow participants to apply theory to practice and build relationships with potential employers.

This integration with the private sector allows participants' skills to be better aligned with employer expectations.

10. Global Scalability:

It is crucial, the offered curricula were accessible to a wide audience, which means that the project must be tailored to the needs of each participant. The methodology takes into account aspects such as:

- translations into different languages, ensuring access for participants from different regions of the world,
- adaptation of content to cultural contexts, by taking into account diversity, adapting materials to local expectations and educational contexts,
- accessibility for different social groups, to eliminate financial or technological barriers.

This global perspective makes the program a universal educational tool, adapted to different and ever-changing realities.

11. Continuous Improvement Based on Participant Feedback:

In order to keep improving the training program on offer, continuous evaluation is essential. Systematic collection of student opinions, both at the stage of training and after its completion, form the basis for analysis. On its basis it is possible to improve the methodology, ensuring better adaptation to the needs and expectations of participants. Given that the goal of the methodology is to create a dynamic and reactive learning environment, regular opinion surveys make it possible to respond to these needs.

An important material for analysis is the results of the exams, both in general and from the participant's perspective, allowing to verify if and which aspects of the programs need improvement. In addition, by holding periodic consultation meetings where participants can directly express their opinions and suggestions, valuable suggestions for implementation can be obtained immediately.

This dynamic feedback strategy allows for continuous improvement of the program, making it more responsive to the needs of the learners and, consequently, meeting practical needs.

12. Sustainability:

Nowadays, when aspects of ecological, ethical and social responsibility are even more crucial than ever, curricula should also place emphasis on this. It's essential to promote

attitudes and skills related to sustainability. The program is supposed to educate professionals in the field, including environmental education about the environment and practices in the industry.

The development of an ethical approach to work should also be emphasized by highlighting the role of professional and corporate ethics. In addition to this, it is essential to promote attitudes of social responsibility by encouraging participants to participate in community and volunteer projects.

This holistic perspective on sustainability ensures that the project not only provides professional knowledge, but also shapes responsible and informed citizens.

What is EQAVET?

The **European Quality Assurance Reference Framework for Vocational Education and Training** (EQAVET) is a toolbox with commonly agreed references to boost the vocational education and training systems of EU countries. EQAVET came to light in 2009 from the Recommendation of the European Parliament and the Council, proposing EU countries to use indicative descriptors and indicators to strengthen the quality of VET provision.

Subsequently, in 2020 EQAVET were updated in the Recommendation on Vocational Education and Training for sustainable competitiveness, social justice and resilience. The whole EQAVET framework is presented in this recommendation, which also explains how EQAVET may be utilized to improve the quality of introductory and continuing VET.

Thanks to EQAVET, both public administrations with competences in Vocational Training, as well as the centers and entities in charge of providing such training, can support the implementation of quality systems and evaluation in:

- Learning environments (educational offer, workplace training and dual VET, formal, informal and non-formal offer).
- All types of learning modalities (online, face-to-face or blended learning).
- VET centers and entities both publicly and privately funded.
- VET awards and qualifications at all levels of the European Qualifications Framework.



The EQAVET framework's indicative descriptors, indicators and its quality assurance cycle are explained in detail below.

The EQAVET quality assurance cycle

In addition, the framework emerged for the quality assurance of VET, both from a system and provider level. It is a four-phase cycle that gives continual improvement, as shown in the figure above.



Figure 1. EQAVET quality assurance cycle. Source: European Commission.

Regardless of where the quality assurance process starts, achieving high-quality VET requires utilizing all these four phases of the cycle. The quality assurance cycle of the EQAVET framework, which is utilized across Europe, may be used to improve several VET-related factors at both levels (system and provider).

The quality assurance cycle can be started by a VET system or provider at any phase, since the cycle encourages ongoing change and development. From this perspective, it may be preferable to start with the planning phase when examining the quality assurance.

For instance, within the DigiWork project, the planning phase has begun with the development of DigiWork' methodology, which defines the objectives and plans the workplace guidelines, skills assessments, among others.

In this context, the EQAVET Framework includes indicative descriptors associated with each of the four phases of the quality assurance cycle at provider level, which allowed the partner consortium to analyze its approach to quality assurance of DigiWork methodology.

1. Planning	2. Implementation	3. Evaluation	4. Review
<ul style="list-style-type: none"> European, national and regional VET policy goals/objectives are reflected in the local targets set by the VET providers Explicit goals/objectives and targets are set and monitored, and programmes are designed to meet them Ongoing consultation with social partners and all other relevant stakeholders takes place to identify specific local/ individual needs Responsibilities in quality management and development have been explicitly allocated There is an early involvement of staff in planning, including with regard to quality development Providers plan cooperative initiatives with relevant stakeholders The relevant stakeholders participate in the process of analysing local needs VET providers have an explicit and transparent quality assurance system in place Measures are designed to ensure compliance with data protection rules 	<ul style="list-style-type: none"> Resources are appropriately internally aligned/assigned with a view to achieving the targets set in the implementation plans Relevant and inclusive partnerships, including those between teachers and trainers, are explicitly supported to implement the actions planned The strategic plan for staff competence development specifies the need for training for teachers and trainers Staff undertake regular training and develop cooperation with relevant external stakeholders to support capacity building and quality improvement, and to enhance performance VET providers' programmes enable learners to meet the expected learning outcomes and become involved in the learning process VET providers respond to the learning needs of individuals by using a learner – centred approach which enable learners to achieve the expected learning outcomes VET providers promote innovation in teaching and learning methods, in school and in the workplace, supported by the use of digital technologies and online-learning tools VET providers use valid, accurate and reliable methods to assess individuals' learning outcomes 	<ul style="list-style-type: none"> Self-assessment/self-evaluation is periodically carried out under national and regional regulations/frameworks or at the initiative of VET providers, covering also the digital readiness and environmental sustainability of VET institutions Evaluation and review covers processes and results/outcomes of education and training including the assessment of learner satisfaction as well as staff performance and satisfaction Evaluation and review includes the collection and use of data, and adequate and effective mechanisms to involve internal and external stakeholders Early warning systems are implemented 	<ul style="list-style-type: none"> Learners' feedback is gathered on their individual learning experience and on the learning and teaching environment. Together with teachers', trainers' and all other relevant stakeholders' feedback this is used to inform further actions Information on the outcomes of the review is widely and publicly available Procedures on feedback and review are part of a strategic learning process in the organisation, support the development of high-quality provision, and improve opportunities for learners. Results/outcomes of the evaluation process are discussed with relevant stakeholders and appropriate action plans are put in place

Figure 2. Indicators for each phase of the quality cycle: provider level. Source: European Commission.

The EQAVET indicators

The EQAVET framework⁷ includes ten reference indicators which can be used to measure the quality in a provider level. In this case, the methodology has been developed considering the indicators applicable to the implementation of DigiWork learning contents.

⁷ <https://ec.europa.eu/social/main.jsp?catId=1570&langId=en>

The table below details the 10 indicators of the framework to assess the quality of VET at a provider level.

N° indicator	Indicator	Purpose of the policy
1	Relevance of quality assurance systems for VET providers: a) share of VET providers applying internal quality assurance systems defined by law/at own initiative. b) share of accredited VET providers.	Promote a quality improvement culture at VET-provider level. Increase the transparency of quality of training. Improve mutual trust on training provision.
2	Investment in training of teachers and trainers: a) share of teachers and trainers participating in further training. b) amount of funds invested, including for digital skills.	Promote ownership of teachers and trainers in the process of quality development in VET. Improve the responsiveness of VET to changing demands of labour market. Increase individual learning capacity building. Improve learners' achievement.
3	Participation rate in VET programmes: Number of participants in VET programmes ⁸ , according to the type of programme and the individual criteria ⁹ .	Obtain basic information at VET-system and VET-provider levels on the attractiveness of VET. Target support to increase access to VET, including for disadvantaged groups.
4	Completion rate in VET programmes: Number of persons having successfully completed/abandoned VET programmes, according to the type of programme and the individual criteria.	Obtain basic information on educational achievements and the quality of training processes. Calculate drop-out rates compared to participation rate. Support successful completion as one of the main objectives for quality in VET. Support adapted training provision, including for disadvantaged groups.

⁸ A period of 6 weeks of training is needed before a learner is counted as a participant. For lifelong learning: percentage of population admitted to formal VET programmes.

⁹ Besides basic information on gender and age, other social criteria might be applied, e.g., early school leavers, highest educational achievement, migrants, persons with disabilities, length of unemployment.

5	<p>Placement rate in VET programmes:</p> <p>a) destination of VET learners at a designated point in time after completion of training, according to the type of programme and the individual criteria¹⁰.</p> <p>b) share of employed learners at a designated point in time after completion of training, according to the type of programme and the individual criteria.</p>	<p>Support employability.</p> <p>Improve responsiveness of VET to the changing demands in the labour market.</p> <p>Support adapted training provision, including for disadvantaged groups.</p>
6	<p>Utilisation of acquired skills at the workplace:</p> <p>a) information on occupation obtained by individuals after completion of training, according to type of training and individual criteria.</p> <p>b) satisfaction rate of individuals and employers with acquired skills/competences.</p>	<p>Increase employability.</p> <p>Improve responsiveness of VET to changing demands in the labour market.</p> <p>Support adapted training provision, including for disadvantaged groups.</p>
7	<p>Unemployment rate¹¹ according to individual criteria.</p>	<p>Background information for policy decision-making at VET-system level.</p>
8	<p>Prevalence of vulnerable groups:</p> <p>a) percentage of participants in VET classified as disadvantaged groups (in a defined region or catchment area) according to age and gender.</p> <p>b) success rate of disadvantaged groups according to age and gender.</p>	<p>Background information for policy decision-making at VET-system level.</p> <p>Support access to VET for disadvantaged groups.</p> <p>Support adapted training provision for disadvantaged groups.</p>
9	<p>Mechanisms to identify training needs in the labour market:</p> <p>a) information on mechanisms set up to identify changing demands at different levels.</p> <p>b) evidence of the use of such mechanisms and their effectiveness.</p>	<p>Improve responsiveness of VET to changing demands in the labour market.</p> <p>Support employability.</p>
10	<p>Schemes used to promote better access to VET and provide guidance to (potential) VET learners:</p>	<p>Promote access to VET, including for disadvantaged groups.</p> <p>Provide guidance to (potential) VET learners.</p>

¹⁰ Including information on the destination of learners who have dropped out.

¹¹ Definition according to ILO: individuals aged 15-74 without work, actively seeking employment and ready to start work.



	a) information on existing schemes at different levels. b) evidence of their effectiveness.	Support adapted training provision.
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What do we want to achieve through our content and platform?

User no 1	
SAYS: <ul style="list-style-type: none"> • "I already know the basics of automation pretty well." • "I want to learn how automation can improve manufacturing processes in Industry 4.0." 	THINKS: <ul style="list-style-type: none"> • "I respect my time and expect others to do the same." • "I see this content is presented in a painless and engaging way."
DOES: <ul style="list-style-type: none"> • The user explores the platform's automation modules explaining how it works. 	FEELS: <ul style="list-style-type: none"> • Curious • Excited • Relaxed

User no 2	
SAYS: <ul style="list-style-type: none"> • "I need to learn about the Internet of Things (IoT) to advance my career." • "I don't know anything about it yet." 	THINKS: <ul style="list-style-type: none"> • "DigiWork's e-learning looks suitable even for people at my level because it explains the basics well before moving on to complex content." • "Looks like DigiWork's content implementation can help me stand out from other job applicants."
DOES: <ul style="list-style-type: none"> • The user engages in the module about IoT and takes quizzes to test their knowledge. 	FEELS: <ul style="list-style-type: none"> • Curious • Empowered • Determined

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The learning content: 18 modules, 6 paths

The partners of DigiWork project identified and developed 6 specific learning paths:

PATH 1: First and Foremost: DATA [developed by CARSA]

1. Data protection and privacy in digital services EU data protection rules.
2. Business data evaluation and big data management.
3. Managing, integrating, and analyzing data inside and between organizations.

PATH 2: Work-flow 4.0: Supply Chain Fundamentals [developed by V-S]

1. Smart-working and technologies enabling digitization in operational processes.
2. Document management systems and digitization of workflows.
3. Supply chain certification and automatic process verification/ accountability.

PATH 3: How to Start from Scratch to Production 4.0 [developed by ECQ]

1. Governance of digitalization in the manufacturing sector and workplace.
2. Digital integration for production assets and online services (kanban & lean management)
3. Digital inefficiencies and risks in professionals' environments (+agile, lean management)

PATH 4: Advanced Intelligent Manufacturing [developed by Klaster]

1. Automation systems integration and smart factories.
2. Advanced robotics and human-robot collaboration.



3. Additive manufacturing.

Path 5: Industry 4.0: Benefits and Challenges [developed by Luiss]

1. Energy savings and environmental impact of production systems.
2. Virtual and augmented reality.
3. Rethinking the work, job crafting, and virtual lean teams.

Path 6: User Interfaces and Interaction Design: the essentials [developed by RTU] - Human-machine interaction and smart computing technologies

1. Internet of Things (IoT) in combination with advanced connectivity (5G).
2. Human-machine interaction, touch interfaces, and accessible GUIs.
3. Artificial intelligence and expert systems AI.



How to navigate the platform?

Log in to the DigiWork platform

Main site

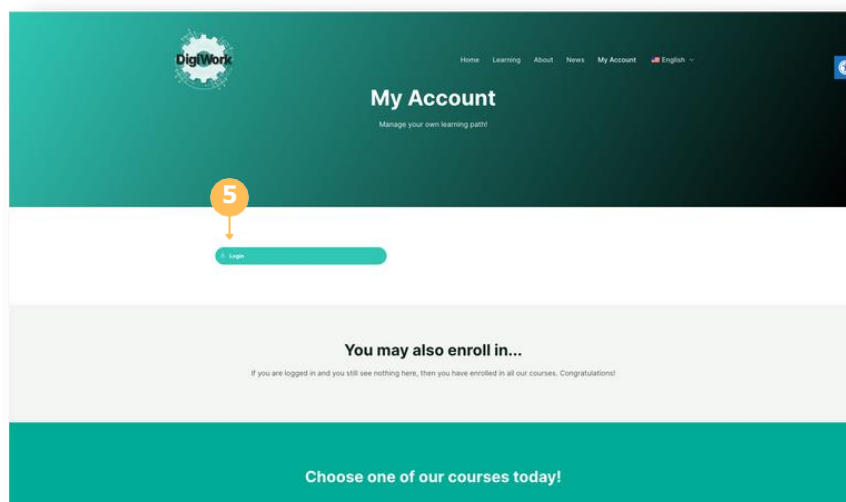
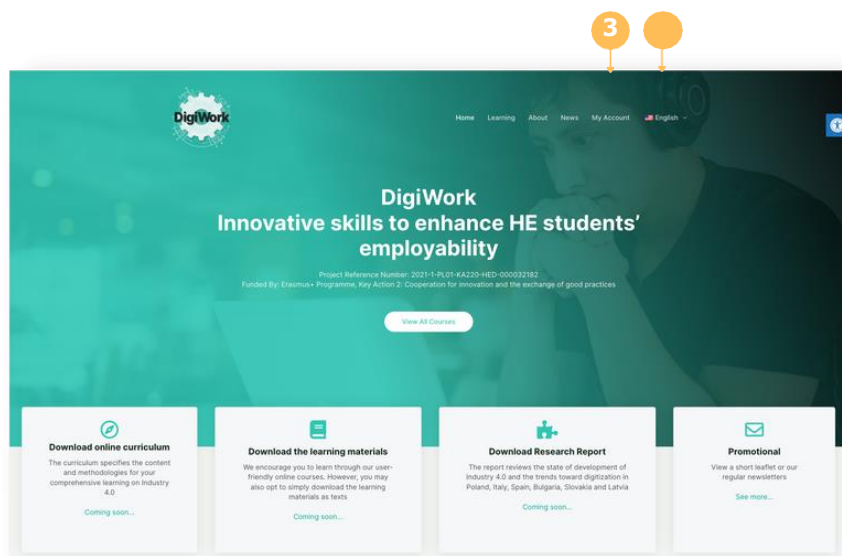
1. To access the e-learning platform, visit the project website: digework-project.eu.

2. Ensure the site's language is adjusted to your needs. You can choose from 7 languages: English, Polish, Slovak, Latvian, Italian, Spanish, and Bulgarian.

3. Next, click "My Account."

4. After clicking "My Account," you'll be transferred to the login page.

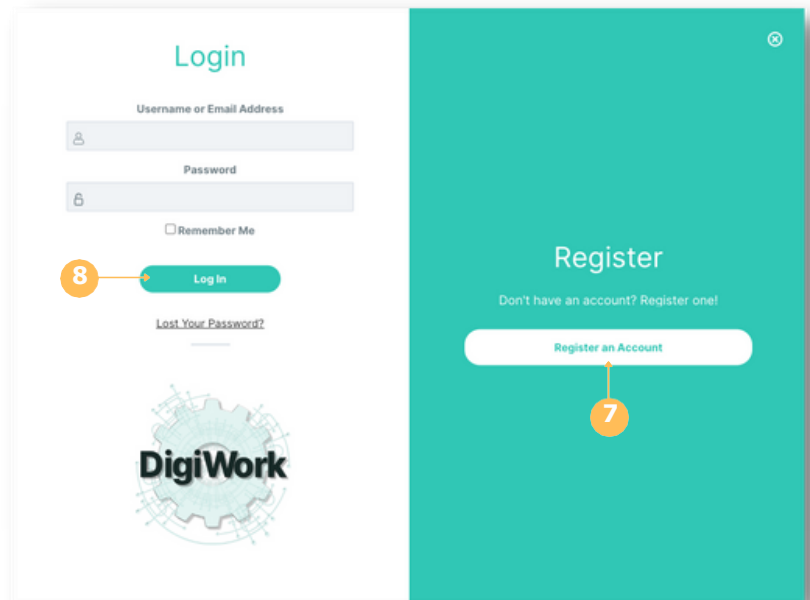
5. Click "Login" button.



6. After clicking the "Login" button, you'll see a screen for further actions.

7. If you don't have an account yet, click the "Register Account" button shown on the right side.

8. If you already have an account, use your credentials to log in.

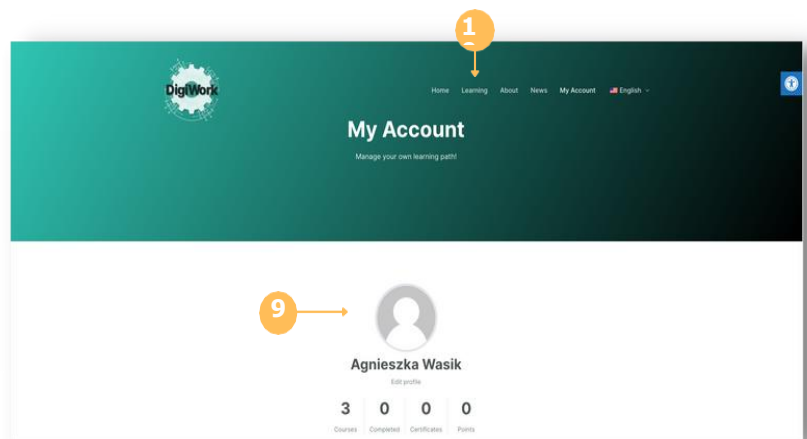


Find a course

My Account Site

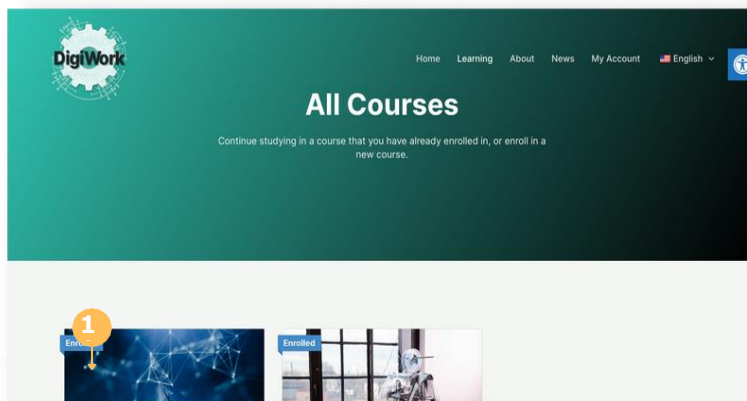
9. After logging, you'll find your account page view. Under your name and statistics, there will be a list of courses you've already enrolled in.

10. If you haven't enrolled in any course yet or want to select the next one, click "Learning" in the top menu.





11. On the next page, you'll find a selection of all the courses we offer and from which you can

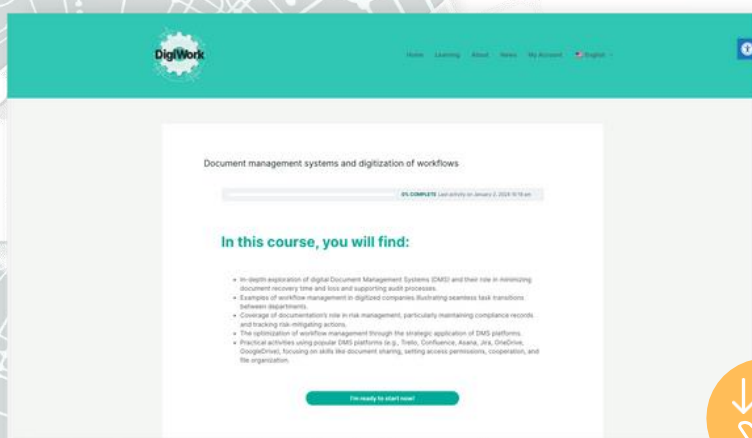


Read more about a course

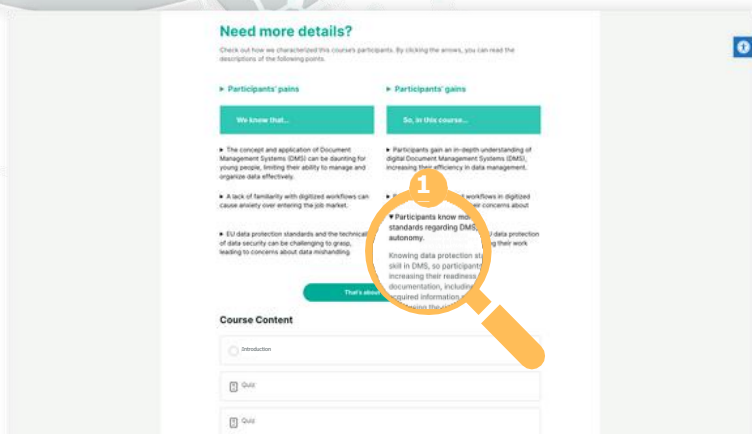
Course intro page

12. Each course has a two-part page. You can move between them by scrolling up and down.

13. At the top, you'll find the course title, a bar of your progress through the course, and the agenda.



14. Scroll down to see more details. Here, you'll find a course's potential participant profile.



15. Each item marked with (arrow/ triangle) contains additional information available by clicking the icon.

16. Enroll in the selected course by clicking 1 of the 2 buttons: "I'm ready to start now!" or "That's about me – I'm in!" and

enjoy learning!

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