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**FLEXI-SKILLED
INNOVATORS**

Empowering the
next generation
VET professionals

Flexi-Skilled Innovators

**Empowering the Next
Generation VET
Professionals**





The Stakeholder Engagement Report represents one of the key deliverable produced within the framework of Work Package 2 (WP2 - Needs Analysis and Skills Gap Assessment) of the *Flexi-Skilled Innovators (FSI)* project (Project Number: 2025-1-NLO1-KA220-VET-000359292), supported by the Erasmus+ KA220-VET Cooperation Partnerships in Vocational Education and Training action of the European Union

The drafting of this report was led by Skills Zone Malta Co. Limited (Malta), with the help of the University of Naples L'Orientale (Italy). The data collection and analytical groundwork underpinning this report were made possible by the substantial collaborative contributions of all partners in the Flexi-Skilled Innovators (FSI) consortium.

The project is coordinated by Nova College (Netherlands) and implemented in partnership with Università degli Studi di Napoli L'Orientale (Italy), Wux B.V. (Netherlands), EGEKO Danışmanlık Dış Ticaret Sanayi ve Ticaret Limited Şirketi (Türkiye), Skills Zone Malta Co. Limited (Malta), EMPOWER MKO (Greece), and Essenia UETP (Italy).

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1. Introduction

This report presents the results of a multi-country analysis aimed at identifying current and future competence needs in the context of vocational education and training (VET) and labour market demands. The analysis was conducted across five countries (The Netherlands, Greece, Italy, Malta, and Türkiye) and combines evidence from focus groups, stakeholder interviews, and a structured survey.

The objective of the study is to explore how key competence areas—namely digital, sustainability, business, and entrepreneurial skills—are perceived, developed, and applied in practice. Particular attention is given to identifying gaps between the strategic importance of these competences and their availability in the labour market, as well as to understanding how effectively current education and training systems respond to emerging needs.

The methodological approach is based on triangulation. Focus groups provide insights into stakeholder perceptions and systemic challenges; interviews offer detailed perspectives from real work environments; and survey data enable quantification of competence importance and availability across a broader sample. This combination enables a comprehensive and reliable assessment of skill needs.

The analysis is situated within a broader context of rapid digital transformation, increasing integration of artificial intelligence, and the transition towards more sustainable and resource-efficient economic models. These developments are reshaping job roles, redefining competence requirements, and placing new demands on education and training systems.

The report is structured as follows: first, country-level findings; then, cross-country comparisons; and finally, an integrated analysis. Building on this evidence, the report identifies key outcomes, outlines implications for programme development, and proposes targeted recommendations. The ultimate aim is to support the design of more responsive, practice-oriented, and future-proof training approaches that better align with labour market realities.



2. Methodology

2.1. Research Design Overview

This study applies a mixed-methods approach, combining qualitative and quantitative data to provide a comprehensive understanding of current and future knowledge and skills needs. Data were collected across five partner countries (Italy, the Netherlands, Malta, Greece, and Turkey), allowing for both country-specific insights and cross-country comparison.

The research focuses on three core competence domains: digital, sustainability, and entrepreneurship.

The methodology integrates:

- Focus groups (exploratory, multi-stakeholder perspectives)
- Semi-structured interviews (in-depth, stakeholder-specific insights)
- Surveys (quantitative assessment of skills needs and gaps)

This triangulated approach enables the identification of skills gaps and mismatches, training needs, emerging labour market trends, and employer expectations.

2.2. Data Collection Methods

2.2.1. Focus Group

Focus groups were conducted to explore stakeholder perspectives on knowledge and skills needs in a collaborative setting. Participants included vocational education and training (VET) learners, educators, and industry representatives, with each group ideally consisting of 5 to 10 participants.

The discussions followed a semi-structured format, beginning with general reflections on labour market trends and gradually moving towards more specific topics related to digital, sustainability, and entrepreneurial skills. Questions were adapted where necessary to reflect the different stakeholder groups.

Focus groups were organised in online, face-to-face, or hybrid formats, depending on the country context. Data were collected through notes and, where consent was provided, audio recordings. All sessions were conducted in line with ethical principles, ensuring confidentiality, respect for participants, and an open environment for discussion.

2.2.2. Semi-Structured Interviews

Semi-structured interviews were conducted to complement the focus groups, providing more detailed, individual perspectives. Interviews targeted the same stakeholder groups—learners, educators, and industry representatives—and aimed to capture practical insights into skills needs, gaps, and future expectations.

Each interview lasted approximately 10 to 15 minutes and followed a flexible structure with open-ended questions. This approach allowed interviewers to adapt the discussion to each respondent while ensuring consistency across countries. The interviews also provided input for the design of learning modules and digital tools within the project.

2.2.3. Surveys

A structured questionnaire was used to collect quantitative data from firms regarding their current and future skills needs. The survey targeted individuals with a strong understanding of their organisation, such as business owners, managers, or senior staff involved in strategy, human resources, or innovation.

The questionnaire was implemented across all partner countries, targeting at least 40 firms per country to ensure sufficient coverage and comparability. It consisted of two main parts: a general section capturing firm characteristics, and a second section assessing knowledge and skills needs across the three domains of digitalisation, sustainability, and entrepreneurship.

The questionnaire design is based on established European frameworks, including ESCO, DigComp, EntreComp, and GreenComp. These frameworks were used to define broader competence categories that are both analytically robust and practical for respondents. In addition, open-ended questions were included to capture context-specific insights and emerging skill needs.

2.3. Data Analysis

The analysis combines qualitative and quantitative methods. Qualitative data from focus groups and interviews were analysed using a thematic approach, identifying recurring patterns related to skills needs, gaps, and training challenges. Survey data were analysed using descriptive statistics, focusing on the relationship between the perceived importance of skills and their availability within firms.

The analysis was conducted first at the country level and then consolidated at the cross-country level to identify common trends and context-specific differences.



3. Focus Groups Analysis

3.1. The Netherlands

The focus group in the Netherlands brought together six participants, including three industry representatives, two VET learners, and one programme manager. Participants represented the Business School context and broader labour-market perspectives through SBB's involvement.

3.1.1. General Observations

The discussion highlighted a strong awareness of the increasing importance of digital competencies, particularly artificial intelligence and data-related skills. At the same time, participants emphasised that technical knowledge alone is not sufficient. Skills such as critical thinking, communication, and initiative were consistently identified as essential for employability.

A recurring theme throughout the discussion was the importance of self-awareness and adaptability, reflected in the remark: “Students need to know who they are to succeed in any profession.” While sustainability and entrepreneurship were recognised as relevant, their integration into learning pathways appears less consistent than that of digital skills.

3.1.2 Skills and Labour Market Alignment

The discussion revealed a partial misalignment between training provision and labour market expectations. While students tend to prioritise practical tools and immediate applicability, employers expect a deeper and more critical understanding of digital technologies, particularly AI.

Alignment	Employers prioritise digital readiness; students focus on practical tools
Mismatch	Demand for deeper AI understanding vs preference for short, applied training
Knowledge gaps	Cybersecurity, AI ethics, sustainability basics
Skills gaps	Critical thinking (AI), initiative, and professional communication

From a stakeholder perspective, learners expressed a need for short, practical learning formats, while educators highlighted the importance of strengthening transversal competences. Industry representatives placed particular emphasis on critical use of AI, initiative, and professionalism.

3.1.3 Digital Knowledge and Skills

Digital competences emerged as the most prominent theme across all stakeholder groups. Participants agreed that a broad understanding of digital tools is necessary, but also stressed the importance of moving beyond basic usage towards more critical and analytical capabilities.

Core knowledge	AI basics, data analysis, communication tools, and office systems
Missing skills	Cybersecurity awareness, AI evaluation, and advanced Excel
Importance	High across all stakeholder groups

Learners generally felt confident in their basic digital skills but acknowledged a lack of depth. Educators emphasised that AI should be understood as a foundational competence across all professions, including those that do not yet exist. Industry representatives expect employees not only to use digital tools but to assess and apply them effectively and critically.

3.1.4 Sustainability Knowledge and Skills

Sustainability was recognised as an important but unevenly integrated area. Its relevance depends strongly on the sector and individual interest.

Relevance	Acknowledged, but varies across sectors
Key knowledge	Basic concepts, environmental awareness, and identifying misinformation
Key skills	Applying small improvements in the workplace

Learners expressed mixed views, often recognising the importance of sustainability but not always prioritising it. Educators noted that sustainability could be more systematically embedded into curricula. Industry representatives generally expect baseline awareness, with deeper expertise required only in specific sectors.

3.1.5 Entrepreneurial and Transversal Skills

Entrepreneurial competences were seen as highly valuable, particularly when linked to real-world applications. Participants stressed that these skills cannot be effectively developed through theory alone.

Key knowledge	Opportunity recognition, problem-solving, and business fundamentals
Key skills	Initiative, ownership, creativity, communication

Current provision	Considered insufficient without practical application
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A notable example discussed was the Pop-up School initiative, where students work on real assignments. This approach was seen as particularly effective in developing entrepreneurial skills. Learners reported that entrepreneurship often feels abstract unless linked to hands-on experience, while employers strongly value initiative and creativity.

3.1.6 Future Skills Needs

Looking ahead, participants identified a clear shift towards more complex and integrated skill sets.

Future knowledge	AI, automation, sustainability, data literacy
Future skills	Critical thinking, adaptability, ethical awareness, and an entrepreneurial mindset
Trends	Rapid digitalisation, increasing sustainability requirements, and skills shortages

The discussion suggests that future training approaches should combine technical knowledge with transversal competences, particularly in relation to critical thinking and adaptability.

3.1.7 Recommendations

Participants highlighted the need for more flexible and practice-oriented learning approaches. In particular, there was strong support for integrating multiple competence areas within applied learning contexts. Key recommendations include:

- Developing short, modular learning units focused on AI, sustainability, and entrepreneurship
- Using interactive, real-world assignments supported by digital tools
- Embedding entrepreneurial learning within other domains (e.g. sustainability challenges combined with digital skills)

3.2. Italy

The focus groups in Italy involved a total of 18 participants, including 11 VET learners, 4 educators, and 3 industry representatives. Participants came from technical and economic education pathways (Administration, Finance and Marketing; Information Systems; Hospitality), as well as from the IT, commerce, and communication services sectors.

3.2.1. General Observations

Across all stakeholder groups, there is a strong awareness that the labour market is undergoing a structural transformation driven by digitalisation, sustainability, and globalisation. Participants consistently emphasised that employability increasingly depends not only on knowledge, but on the ability to apply competencies in real-world contexts.

Digital transformation, particularly the role of artificial intelligence, was identified as a central driver of change. At the same time, participants highlighted the need for critical oversight of AI, rather than its passive use. Sustainability is widely recognised as important, but is still often treated conceptually rather than operationally.

A recurring theme throughout the discussions was the growing importance of adaptability, continuous learning, and the ability to manage uncertainty.

3.2.2. Skills and Labour Market Alignment

The findings indicate a relatively high level of awareness of labour-market needs among stakeholders. However, this awareness is not yet fully reflected in training provision, leading to a persistent gap between education and practice.

Alignment	Strong consensus on the importance of digital, transversal, and language competences
Mismatch	Predominance of theoretical learning vs need for applied, real-world competencies
Knowledge gaps	AI application and ethics, advanced data analysis, cybersecurity, ESG frameworks
Skills gaps	Data-driven decision-making, problem-solving in complex contexts, autonomy, and teamwork under pressure

Participants agreed that while basic digital literacy is generally present, more advanced competencies, particularly in AI, data interpretation, and cybersecurity, remain underdeveloped. Sustainability is recognised as strategic but is insufficiently linked to business operations and economic realities.

Learners emphasised limited exposure to real work environments, while educators pointed to structural constraints such as slow curriculum updates. Industry representatives confirmed that digital transformation is not a temporary phenomenon but a long-term structural shift that requires continuous adaptation.

3.2.3. Digital Knowledge and Skills

Digital competences are considered essential across all sectors, with particular emphasis on AI, data, and digital communication. However, the gap between basic and advanced skills remains significant.

Core knowledge	Digital literacy, AI awareness, data management, online research, and digital communication
Missing skills	Advanced data analysis, structured AI use, cybersecurity, and information evaluation
Importance	Considered critical for future employability across all sectors

Students reported confidence in basic tools but difficulties with more advanced applications, particularly in data analysis and AI usage. Educators confirmed these gaps and highlighted challenges in integrating digital competencies due to infrastructural and training limitations.

Industry representatives stressed the need for:

- Structured and critical use of AI
- Data modelling and analysis
- Cybersecurity awareness
- Application of digital tools in professional contexts

3.2.4. Sustainability Knowledge and Skills

Sustainability is widely acknowledged as an important area, but its implementation remains uneven and often disconnected from operational practice.

Relevance	High, but varies in depth and application
Key knowledge	Agenda 2030, circular economy, ESG frameworks, regulatory compliance
Key skills	Applying sustainability in business processes, impact evaluation, and systemic thinking

Students tend to perceive sustainability as theoretical, while educators confirm that it is mainly integrated through civic education rather than as a core operational competence. Industry representatives highlighted that sustainability is increasingly driven by regulation, cost considerations, and competitiveness rather than solely by ethical concerns.

A key gap identified is the lack of systemic thinking, particularly in linking environmental, social, and economic dimensions.

3.2.5. Entrepreneurial and Transversal Skills

Entrepreneurial and transversal competences were consistently identified as critical, particularly in rapidly changing labour markets. However, their development is not yet systematically embedded in training systems.

Key knowledge	Business fundamentals, risk management, value creation, and regulatory awareness
Key skills	Problem-solving, communication, teamwork, adaptability, and initiative
Current provision	Present but not consistently structured or formally assessed

Students recognise the importance of these competences but feel they are only partially developed. Educators noted that their development often depends on individual teaching approaches rather than institutional frameworks. Industry representatives emphasised the importance of autonomy, adaptability, and decision-making in uncertain environments.

Across all sectors, there is a clear demand for individuals who can combine analytical, creative, and interpersonal skills.

3.2.6. Future Skills Needs

Participants identified a clear shift towards more complex, integrated competence profiles that combine technical, transversal, and ethical dimensions.

Future knowledge	AI, data analysis, cybersecurity, sustainability frameworks, and entrepreneurial knowledge
Future skills	Critical thinking, adaptability, lifelong learning, autonomy, ethical judgement
Trends	AI acceleration, digital transformation, ESG regulation, globalisation, hybrid skill profiles

A key insight is that future employability will depend less on static knowledge and more on the ability to adapt and learn continuously. The role of humans is expected to shift towards supervision, strategic thinking, and ethical decision-making, particularly in relation to AI and sustainability.

3.2.7. Recommendations

The findings point to the need for a systemic shift in training approaches, moving from knowledge transmission to competence development. Key recommendations include:



- Strengthening applied, project-based and interdisciplinary learning, with a focus on real-world tasks
- Embedding digital competences (AI, data, cybersecurity) across all curricula
- Integrating sustainability as an operational competence, linked to business processes and ESG requirements
- Enhancing school–industry collaboration to ensure alignment with labour market needs
- Supporting continuous professional development for educators, particularly in digital and emerging domains

3.3. Malta

The focus group in Malta included six participants, with balanced representation from VET learners, educators, and industry (two participants from each group). Participants came from business administration, finance, and marketing education pathways, as well as from the IT/digital services and tourism/hospitality sectors.

3.3.1. General Observations

The discussion highlighted a clear awareness that labour market demands are evolving rapidly, particularly due to digital transformation and sustainability requirements. Participants agreed that while foundational knowledge is generally provided within VET systems, there is a significant gap in practical application and exposure to real-world tools and environments.

This gap was reflected in participant remarks such as: “We learn theory, but the tools used in companies are completely different,” or “Technology evolves faster than curricula.”

Across all stakeholder groups, there was strong emphasis on adaptability, critical thinking, and the ability to apply knowledge in practice rather than simply following procedures.

3.3.2. Skills and Labour Market Alignment

The findings indicate partial alignment between education and labour market needs, with clear weaknesses in the practical dimension of training.

Alignment	Foundational knowledge is present, but lacks practical depth
Mismatch	Outdated curricula, limited real-world exposure, and weak industry collaboration

Knowledge gaps	Industry tools, business processes, regulatory awareness, and emerging technologies
Skills gaps	Practical technical skills, adaptability, professional communication, and problem-solving

Learners reported feeling theoretically prepared but lacking confidence in real work environments. Educators highlighted structural challenges in keeping curricula up to date, while industry representatives emphasised the difficulty of finding candidates with job-ready competencies and practical experience.

3.3.3. Digital Knowledge and Skills

Digital competences were identified as a central requirement across all sectors, with particular emphasis on AI, data, and automation. However, participants consistently pointed to a gap between basic digital literacy and more advanced, work-relevant skills.

Core knowledge	Basic digital literacy, collaboration tools, data handling, and digital communication
Missing skills	Advanced data analysis, AI usage, automation processes, and cybersecurity awareness
Importance	Considered essential and increasingly transformative

Learners indicated that their experience is largely limited to basic applications, with limited exposure to professional or industry-specific tools. Educators reported constraints in infrastructure and training that limit the integration of advanced digital competences. Industry representatives expect employees to be digitally autonomous, particularly in relation to data literacy and AI.

3.3.4. Sustainability Knowledge and Skills

Sustainability is increasingly recognised as important across sectors, driven by both regulatory requirements and market expectations. However, its integration into education and training remains limited.

Relevance	Increasing across all sectors
Key knowledge	Environmental regulations, circular economy, ESG frameworks
Key skills	Sustainable decision-making, compliance, resource efficiency, and impact assessment

Learners reported limited exposure to practical applications of sustainability, often experiencing it as an abstract concept. Educators noted challenges in integrating sustainability across curricula due to a lack of structured materials. Industry representatives highlighted growing demand for compliance-related competences, particularly in relation to ESG and environmental standards.

3.3.5. Entrepreneurial and Transversal Skills

Entrepreneurial and transversal competences were consistently identified as critical, with some participants noting that these skills are as important as, or even more important than, technical skills.

Key knowledge	Business fundamentals, customer needs, and market awareness
Key skills	Initiative, creativity, problem-solving, teamwork, adaptability, communication
Current provision	Considered insufficient and overly theoretical

Learners expressed a strong need for project-based and experiential learning, particularly in relation to entrepreneurship. Educators indicated that while soft skills are recognised, their development is often constrained by curriculum structures. Industry representatives emphasised attitude, initiative, and problem-solving ability as key differentiators in hiring.

3.3.6. Future Skills Needs

Participants identified a clear shift towards more flexible, interdisciplinary, and future-oriented competence profiles.

Future knowledge	AI and machine learning basics, sustainability frameworks, and digital ethics
Future skills	Adaptability, lifelong learning, digital fluency, critical thinking, resilience
Trends	Digital transformation, green transition, automation, and globalisation

The findings suggest that future workforce requirements will be shaped by the ability to adapt to continuous change, with strong emphasis on digital and sustainability transitions.

3.3.7. Recommendations

The discussion highlighted the need for a more dynamic and practice-oriented VET system with stronger links to industry. Key recommendations include:

- Strengthening VET–industry collaboration, including internships and co-designed curricula
- Integrating advanced digital skills, particularly AI, data analytics, and cybersecurity
- Embedding sustainability across all learning areas, rather than as standalone modules
- Expanding project-based and experiential learning approaches
- Developing transversal skills systematically across all programmes
- Supporting continuous training for educators, including access to industry tools
- Leveraging AI-powered learning platforms to provide personalised and adaptive learning pathways

3.4. Greece

The focus groups in Greece included 17 participants: 10 VET learners, 4 educators, and 3 industry representatives. Participants represented Information Technology and Business Administration pathways, as well as the IT/digital services and tourism/hospitality sectors.

3.4.1. General Observations

The discussions revealed a strong consensus that the key challenge is not access to knowledge, but the ability to apply knowledge effectively in real working environments. Participants consistently highlighted the gap between theoretical education and practical implementation.

Digital transformation, particularly the impact of artificial intelligence, was identified as a major driver of change across sectors. At the same time, participants emphasised that AI is reshaping rather than replacing jobs, requiring new forms of critical thinking, supervision, and decision-making.

Sustainability is recognised as increasingly important, but remains largely theoretical in education, with limited connection to operational business practices.

3.4.2. Skills and Labour Market Alignment

There is strong alignment in terms of awareness of labour market needs, but significant gaps in how these needs are addressed in training systems.

Alignment	High awareness of the importance of digital and transversal competences
Mismatch	Limited practical exposure and insufficient development of advanced competencies
Knowledge gaps	AI application and ethics, advanced data literacy, and cybersecurity

Skills gaps	Data-driven decision-making, problem-solving in complex contexts, and critical AI evaluation
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Learners clearly perceive a disconnect between theory and practice, while educators highlight structural constraints such as rigid curricula and limited training opportunities. Industry representatives stress that digital transformation is ongoing and requires continuous adaptation and interdisciplinary thinking.

3.4.3. Digital Knowledge and Skills

Digital competences are considered foundational across all sectors, but there is a clear distinction between basic familiarity and advanced, professional-level skills.

Core knowledge	Digital literacy, AI awareness, data handling, and collaborative tools
Missing skills	Advanced data analysis, structured AI use, and cybersecurity awareness
Importance	Critical across all sectors and increasing over time

Learners reported confidence in basic tools but limited experience with advanced applications and real-world digital environments. Educators emphasised the need to systematically integrate AI and data literacy into curricula, while also noting challenges related to infrastructure and training. Industry representatives expect employees to integrate digital tools into workflows and decision-making processes, not just use them at a basic level.

3.4.4. Sustainability Knowledge and Skills

Sustainability is widely recognised as strategically important, particularly in relation to regulatory frameworks and market competitiveness. However, its practical integration remains limited.

Relevance	High and increasing across sectors
Key knowledge	Environmental regulations, ESG frameworks, and sustainable business models
Key skills	Applying sustainability in operations, decision-making, and business processes

Learners expressed interest in sustainability but reported difficulty in connecting it to real-world business applications. Educators noted gaps in systemic thinking and application, while industry representatives emphasised the need for employees who can translate sustainability principles into operational and strategic decisions.

3.4.5. Entrepreneurial and Transversal Skills

Entrepreneurial and transversal competences are seen as essential in a rapidly changing labour market, particularly given the shift towards more flexible and non-linear career paths.

Key knowledge	Business fundamentals, market dynamics, and regulatory awareness
Key skills	Problem solving, communication, teamwork, adaptability, autonomy
Current provision	Partially developed, but not systematically structured or assessed

Learners reported limited opportunities to practice initiative and decision-making, while educators noted that these competencies are often integrated informally rather than through structured frameworks. Industry representatives highlighted the importance of autonomy, responsibility, and the ability to operate in uncertain environments, noting that many graduates lack experience in real-world, collaborative, time-constrained settings.

3.4.6. Future Skills Needs

Participants identified a clear shift towards more complex, adaptive, and interdisciplinary competence profiles.

Future knowledge	AI, data analysis, cybersecurity, and sustainability frameworks
Future skills	Critical thinking, adaptability, lifelong learning, and autonomous decision-making
Trends	AI and automation, digital transformation, green transition, data-driven economies

A key insight is that employability will increasingly depend on the ability to continuously update skills and navigate complex environments, rather than relying on static knowledge. The role of individuals is expected to shift towards analysis, supervision, and strategic decision-making.

3.4.7. Recommendations

The findings highlight the need for a systemic shift towards more applied and flexible training models. Key recommendations include:

- Strengthening competence-based and project-based learning, including real-case simulations
- Embedding digital and AI competences across all curricula, with a focus on critical and responsible use



- Enhancing school–industry collaboration, including expanded work-based learning opportunities
- Promoting flexible and modular learning pathways, including micro-credentials
- Supporting continuous professional development for educators, particularly in emerging domains

3.5. Turkey

The focus group in Türkiye included 15 participants: 8 VET learners, 4 educators, and 3 industry representatives. Participants represented the manufacturing and service sectors, as well as vocational education and SME environments, enabling a broad comparison of perspectives.

3.5.1. General Observations

The discussion highlighted that VET systems provide a solid theoretical foundation, but there is a clear need to strengthen the connection between education and real work environments. This gap was consistently emphasised across stakeholder groups, particularly by industry representatives.

A recurring theme was the increasing importance of digital technologies, sustainability, and entrepreneurial thinking. At the same time, transversal skills such as communication, teamwork, and adaptability were seen as essential for successful labour market integration.

This was reflected in the observation: “Students know theory but struggle when entering real workplaces.”

3.5.2. Skills and Labour Market Alignment

Participants identified general alignment in educational objectives but a gap in implementation, particularly in practical training and exposure to current industry practices.

Alignment	Strong theoretical preparation, but limited practical application
Mismatch	Limited internships and outdated tools in some institutions
Knowledge gaps	Industry practices, digital production systems, and entrepreneurship
Skills gaps	Problem-solving, teamwork, and the application of digital tools in real contexts

Learners expressed a clear need for more hands-on experience and internships, while educators highlighted difficulties in updating curricula to keep pace with rapid technological

change. Industry representatives emphasised the importance of graduates being able to apply knowledge effectively in workplace settings.

3.5.3. Digital Knowledge and Skills

Digital competences were identified as a key area for development, particularly as industries increasingly adopt automation and digital systems.

Core knowledge	Digital literacy, productivity tools, and online collaboration
Missing skills	AI tools, data analysis, and cybersecurity awareness
Importance	Increasingly critical across sectors

Learners reported difficulties in using advanced digital tools, while educators noted limited resources for integrating digital technologies into teaching. Industry representatives stressed the need for employees who can work with digital systems, automation tools, and data-driven processes.

3.5.4. Sustainability Knowledge and Skills

Sustainability is gaining importance, particularly in response to regulatory developments and environmental awareness. However, its practical integration into training remains limited.

Relevance	Increasing due to regulations and environmental concerns
Key knowledge	Environmental regulations, sustainable production processes
Key skills	Resource efficiency, waste reduction, and sustainable practices

Participants noted that sustainability is often addressed at a theoretical level, with limited opportunities for practical application. Industry representatives highlighted the need for employees who understand environmental standards and compliance requirements.

3.5.5. Entrepreneurial and Transversal Skills

Entrepreneurial and transversal competences were recognised as important, though not yet systematically developed within training pathways.

Key knowledge	Business fundamentals, market awareness, and financial literacy
Key skills	Creativity, initiative, teamwork, leadership
Current provision	Partially addressed, but not systematically structured

Learners expressed interest in entrepreneurship but indicated limited opportunities to develop these competencies in practice. Educators reported that soft skills are often developed through teamwork activities, but not always formally assessed. Industry representatives emphasised the importance of proactive, solution-oriented employees.

3.5.6. Future Skills Needs

Participants identified several key trends shaping future skills requirements, particularly in relation to technological and environmental changes.

Future knowledge	AI, digital transformation, sustainability
Future skills	Adaptability, lifelong learning, interdisciplinary thinking
Trends	Automation, AI adoption, and green transition policies

The findings suggest that future employability will depend on the ability to adapt to technological change and integrate knowledge across disciplines, particularly in digital and sustainability contexts.

3.5.7. Recommendations

The discussion highlighted the need to strengthen the practical dimension of VET systems and improve alignment with labour market needs. Key recommendations include:

- Strengthening VET–industry cooperation, particularly through internships and work-based learning
- Enhancing digital skills training, including AI, data literacy, and digital platforms
- Expanding practical sustainability education, including real-world projects
- Promoting entrepreneurial learning through project-based and innovation-focused approaches

3.6. Cross-Country Synthesis

The analysis of focus groups conducted across Italy, the Netherlands, Malta, Greece, and Türkiye reveals a high degree of convergence in stakeholder perceptions, despite differences in national contexts and sectoral representation. Overall, the findings point to a systemic transformation of skills requirements, driven by digitalisation, sustainability transitions, and evolving labour market dynamics.

3.6.1. Overall Alignment and Structural Gaps

Across all countries, there is a consistent pattern: awareness of labour market needs is high, but implementation within education and training systems remains limited.

All stakeholder groups (learners, educators, and industry representatives) demonstrate a shared understanding of the importance of:

- Digital competences (especially AI and data-related skills)
- Transversal skills (problem solving, adaptability, communication)
- Increasing relevance of sustainability

However, this alignment at the level of awareness is not matched by practice. The most prominent cross-country finding is the persistent gap between theoretical learning and practical application.

Alignment	Strong consensus on key competences needed for employability
Core gap	Theory–practice divide across all countries
Systemic issue	Limited integration of real-world experience in VET systems

This gap is reflected in:

- Limited exposure to real work environments
- Insufficient use of industry-relevant tools
- Weak integration of experiential and work-based learning

3.6.2. Digital Knowledge and Skills

Digital competences emerge as the most critical and consistently prioritised domain across all countries. AI, data literacy, and digital communication are universally recognised as essential for current and future employability.

At the same time, a clear pattern emerges: while basic digital literacy is widespread, there is a significant deficit in advanced and applied digital competences.

Strengths	Gaps
Basic digital tool usage	Advanced data analysis and interpretation
General awareness of AI	Critical and structured use of AI
Familiarity with digital environments	Cybersecurity awareness and digital ethics

A particularly important cross-country insight is the shift in expectations regarding AI. Stakeholders consistently emphasise that:

- AI is not a peripheral skill, but a core, cross-sector competence
- The key challenge is not access to AI tools, but the ability to critically evaluate and supervise their outputs

Industry representatives across all countries stress that future employees must be able to integrate digital tools into decision-making and workflows, rather than simply using them at a basic level.

3.6.3. Sustainability Knowledge and Skills

Sustainability is recognized across all countries as a growing strategic priority, driven by regulatory frameworks, market expectations, and environmental challenges. However, its integration into education and training systems remains uneven.

A clear cross-country pattern is the distinction between:

- Conceptual awareness (strong)
- Operational application (limited)

Awareness	High across all stakeholder groups
Application	Limited and often disconnected from real work contexts
Key gap	Transition from theory to measurable, operational practice

Stakeholders consistently highlight the need to:

- Link sustainability to business processes and decision-making
- Develop systemic thinking, connecting environmental, social, and economic dimensions
- Move towards ESG-oriented and compliance-driven approaches

Industry representatives increasingly view sustainability not only as an ethical issue, but as a core economic and regulatory requirement.

3.6.4. Entrepreneurial and Transversal Skills

Across all countries, transversal and entrepreneurial competences are identified as equally important as technical skills, and in some cases even more critical.

The most consistently highlighted skills include:

- Problem-solving in complex and uncertain environments
- Adaptability and resilience

- Communication and teamwork
- Initiative and autonomy

Despite this strong consensus, these competences are not systematically developed or assessed within current VET systems.

Strengths	Limitations
Recognition of importance	Lack of structured development
Partial integration in curricula	Limited formal assessment
Use in some project-based activities	Inconsistent implementation across institutions

A key cross-country insight is that these skills are often developed implicitly rather than intentionally, depending on individual teaching approaches rather than institutional frameworks.

Industry representatives consistently emphasise the need for individuals who can:

- Take initiative
- Work independently
- Operate under uncertainty
- Apply knowledge in dynamic, real-world contexts

3.6.5. Future Skills Trends

Across all countries, stakeholders identified similar trends shaping future skills requirements. These trends point towards increasingly complex and integrated competence profiles.

AI and automation	Need for critical thinking, supervision, and data-driven decision-making
Digital transformation	Continuous updating of digital competences
Green transition	Integration of sustainability into all sectors
Labor market volatility	Importance of adaptability and lifelong learning

A central cross-country conclusion is that employability is shifting from static knowledge to dynamic competence systems. The ability to learn continuously, adapt to new contexts, and combine technical and transversal skills is becoming more important than any single domain of expertise.



3.6.6. Key Cross-Country Insights

The synthesis of findings across all five countries leads to several overarching conclusions:

1. The theory–practice gap is the most critical systemic issue: all countries report insufficient practical application of knowledge and limited exposure to real-world environments.
2. Digital competences require deepening and professionalisation: While basic skills are widespread, there is a strong need for advanced competences in AI, data, and cybersecurity.
3. Sustainability must move from concept to implementation: Education systems need to embed sustainability into operational and business contexts.
4. Transversal and entrepreneurial skills need systematic integration: These competences are essential but not consistently developed or assessed.
5. Lifelong learning and adaptability are becoming core competencies: Future employability depends on the ability to update skills in response to rapid change.

4. Semi-Structured Interview Analysis

4.1. The Netherlands

The interviews conducted in the Netherlands primarily involved industry representatives across diverse sectors, including finance, recruitment, education, logistics, and creative industries, as well as one VET educator. Respondents generally held senior or managerial roles, providing a strategic perspective on skills needs and labour market expectations.

4.1.1. General Observations

Across interviews, there is a consistent perception that the Dutch VET system is relatively well aligned with labour market needs, particularly in terms of providing a solid theoretical foundation and integrating work-based learning.

However, several recurring themes emerge:

- Increasing importance of digital competences, especially AI and data-related skills
- Growing concern about declining communication and social skills
- Strong emphasis on attitude, ownership, and responsibility as key employability factors

Unlike in some other countries, respondents generally did not report major knowledge gaps, but rather highlighted behavioural and application-related challenges.

4.1.2. Skills and Labour Market Alignment

Overall, interviewees perceive a relatively good alignment between education and labour market requirements, particularly due to the strong integration of internships and practical learning.

Alignment	Generally strong, especially in VET pathways
Mismatch	Limited in technical knowledge, more visible in soft skills and attitude
Knowledge gaps	Minimal; mostly emerging around AI and regulations
Skills gaps	Communication, ownership, teamwork, proactive behaviour

A key insight is that while technical preparedness is generally sufficient, employers increasingly identify gaps in:

- Taking responsibility and ownership
- Working towards organisational goals

- Effective communication and collaboration

Some respondents also noted a shift towards more individualistic attitudes, which can affect teamwork and workplace dynamics.

4.1.3. Digital Knowledge and Skills

Digital competences are considered essential across all sectors, with a clear shift towards more advanced and integrated use of digital tools.

Core knowledge	Job-specific systems, Excel, and digital communication tools
Emerging areas	AI applications, cybersecurity, data analysis
Importance	High and increasing across all sectors

AI is consistently mentioned as a key future competence, although its current application varies significantly across sectors. In some areas, it is already integrated into workflows, while in others it is still emerging.

A key challenge identified is not basic usage, but:

- Understanding how to apply AI effectively
- Interpreting outputs critically
- Managing risks (e.g. cybersecurity, privacy)

4.1.4. Sustainability Knowledge and Skills

Sustainability shows greater sector-specific relevance than digital competencies.

Relevance	Varies significantly across sectors
Key knowledge	Regulations (e.g. ESG, CSRD), reporting requirements
Key skills	Awareness and compliance, with less focus on operational skills

In several sectors, sustainability is not yet a central requirement for employees, but rather an organisational responsibility. However, in other areas, particularly those influenced by regulation or supply chains, it is becoming increasingly important.

A notable gap is the ability to translate sustainability into practical actions, especially at the employee level.

4.1.5. Entrepreneurial and Transversal Skills

Transversal competences are consistently highlighted as critical success factors, often more important than technical knowledge.

Key skills	Communication, initiative, problem-solving, adaptability
Additional competences	Ownership, creativity, empathy, resilience
Current provision	Generally present, but declining in some areas

A particularly strong theme across interviews is concern about:

- Declining communication and social skills
- Reduced sense of responsibility and ownership
- Limited proactive behaviour among younger workers

Employers emphasise the importance of:

- Working towards organisational goals
- Taking initiative and responsibility
- Managing stress and complex work environments

4.1.6. Future Skills Needs

Looking ahead, respondents anticipate gradual but significant changes, primarily driven by digitalisation.

Future knowledge	AI, cybersecurity, regulations, sector-specific systems
Future skills	Communication, critical thinking, adaptability, and ownership
Trends	AI integration, automation, and regulatory developments

While AI is expected to play a major role, there is still uncertainty about its full impact. However, future roles will require a combination of:

- Digital competence
- Human-centred skills (communication, empathy)
- Ability to adapt to changing environments

4.1.7. Education, Work-Based Learning and Upskilling

Interviewees consistently highlighted the strengths of the Dutch system in terms of work-based learning and labour market integration.

Education effectiveness	Generally strong and well-aligned
Theory vs practice	Good balance, with a strong practical component
Work-based learning	Highly effective (internships, on-the-job training)
Upskilling	Available and accessible, often sector-specific

The main areas for improvement relate not to technical content, but to:

- Strengthening behavioural and attitudinal aspects
- Supporting continuous adaptation to new technologies (especially AI)
- Increasing focus on realistic job expectations and motivation

4.1.8. Key Takeaways

The Netherlands presents a relatively mature and well-functioning VET system, with strong links to the labour market and effective work-based learning structures. However, the interviews highlight several emerging challenges:

- The growing importance of AI and advanced digital competencies
- The need to strengthen communication, collaboration, and ownership
- A shift from knowledge gaps to attitude and application gaps

Overall, future employability in the Dutch context will depend not only on technical skills but increasingly on behavioural competencies, adaptability, and the ability to apply knowledge in dynamic work environments.

4.2. Italy

The interviews conducted in Italy included a balanced mix of stakeholders, comprising industry representatives (hospitality, IT), VET learners, and VET educators across business, science, and technical fields. This provides a multi-perspective view on skills needs, education effectiveness, and labour market expectations.

4.2.1. General Observations

Across all stakeholder groups, there is strong consensus that the Italian education and training system provides a solid theoretical foundation, but insufficient preparation for real work environments.

The most consistent and dominant theme is the gap between theoretical knowledge and practical application, highlighted by all stakeholder groups—industry, learners, and educators.

In parallel, there is strong alignment on:

- The growing importance of digital competences, particularly AI and data
- The increasing relevance of sustainability, especially in relation to regulation and business processes
- The need for stronger transversal competences, including adaptability and problem-solving

4.2.2. Skills and Labour Market Alignment

The interviews confirm that while awareness of labour market needs is high, training systems struggle to translate this into practice-oriented learning.

Alignment	Good theoretical alignment with labour market needs
Mismatch	Strong gap in practical application and real-world experience
Knowledge gaps	Business processes, advanced digital tools, and sustainability in practice
Skills gaps	Problem solving, application of knowledge, autonomy in real contexts

Industry representatives emphasised that graduates often lack:

- Understanding of real business processes
- Ability to operate in dynamic work environments
- Practical experience with tools and workflows used in companies

Learners themselves confirmed feeling underprepared for real work situations, despite having theoretical knowledge.

4.2.3. Digital Knowledge and Skills

Digital competences are identified as a core requirement across all sectors, with particular emphasis on AI, data analysis, and digital tools.

Core knowledge	Digital literacy, AI awareness, data management, digital tools
Missing skills	Advanced data analysis, structured AI use, professional digital tools
Importance	Critical and rapidly increasing

A clear pattern emerges across stakeholders:

- Learners are familiar with basic digital tools, but lack advanced competencies
- Educators recognise the importance of digital skills, but face constraints in implementation

- Industry expects practical, work-oriented digital competences, not just theoretical understanding

AI is consistently identified as a transformative competence, requiring not only technical use but also critical and responsible application.

4.2.4. Sustainability Knowledge and Skills

Sustainability is recognised as an increasingly important domain, particularly in relation to environmental challenges and regulatory frameworks. However, its implementation remains largely theoretical.

Relevance	High and growing across sectors
Key knowledge	Environmental sustainability, ESG principles, resource management
Key skills	Applying sustainability in business and operational contexts

Students and educators highlighted that sustainability is often addressed through conceptual or civic education modules, with limited connection to real business practices. Industry representatives emphasised the need for employees who can apply sustainability in operations, particularly in areas such as resource management and compliance.

4.2.5. Entrepreneurial and Transversal Skills

Transversal and entrepreneurial competences are consistently identified as essential, particularly in the context of rapidly changing labour market conditions.

Key skills	Problem-solving, teamwork, communication, and adaptability
Additional competences	Initiative, critical thinking, organisational skills
Current provision	Present, but not sufficiently developed in practice

Stakeholders emphasised that while these competences are addressed in education, they are not systematically developed through real-life applications. Students reported limited opportunities to:

- Take initiative
- Make decisions
- Work in real or simulated business environments

Educators also noted challenges in embedding entrepreneurial competencies across curricula due to structural and institutional constraints.

4.2.6. Future Skills Needs

All stakeholder groups identified similar future trends, pointing towards increasingly integrated and complex competence profiles.

Future knowledge	AI, digital transformation, sustainability
Future skills	Adaptability, analytical thinking, critical thinking
Trends	Automation, smart technologies, green transition

A key insight is that future employability will depend on the ability to:

- Adapt to technological change
- Work with data and AI systems
- Continuously update skills

There is also growing recognition of the importance of interdisciplinary competencies that combine technical, environmental, and business knowledge.

4.2.7. Education, Work-Based Learning and Upskilling

The interviews highlight both strengths and limitations of the Italian education system.

Education effectiveness	Strong theoretical foundation, limited practical exposure
Theory vs practice	Overemphasis on theory
Work-based learning	Valuable but often limited in duration and depth
Upskilling	Available, but constrained by time and access

Work-based learning (internships, school–work alternation) is seen as essential, but often:

- Too short
- Not sufficiently integrated into learning pathways
- Limited in terms of real responsibilities

Educators also highlighted barriers such as:

- Limited infrastructure
- Lack of access to advanced technologies
- Need for continuous professional development

4.2.8. Key Takeaways

The Italian interviews strongly reinforce the central finding from the focus groups: a structural gap between theoretical education and practical labour-market requirements.

Key conclusions include:

- Digital competences, especially AI and data, are critical but require deeper and more practical development
- Sustainability is recognised, but needs to move from conceptual understanding to operational application
- Transversal and entrepreneurial skills are essential but insufficiently embedded in practice
- Work-based learning is valuable, but needs to be expanded and strengthened

Overall, improving employability in the Italian context requires a shift towards practice-oriented, competence-based, and flexible learning approaches, with stronger integration between education and the real world.

4.3. Malta

The Maltese interviews include a diverse and well-balanced stakeholder group, comprising VET learners (across IT, hospitality, and engineering), educators (IT, healthcare, hospitality), and industry representatives (logistics, healthcare, hospitality, waste management). This enables a comprehensive, cross-sectoral perspective on skills needs and system performance.

4.3.1. General Observations

Across all stakeholder groups, a strong and consistent pattern emerges:

- Education provides a solid theoretical foundation, but lacks depth in practical application
- There is a widespread need for real-world exposure, particularly in complex and high-pressure environments
- Digitalisation, sustainability, and transversal skills are key cross-cutting priorities

Compared to other countries, Malta shows:

- Slightly stronger emphasis on sector-specific operational skills
- Strong recognition of soft skills (especially communication and emotional intelligence) as critical gaps

4.3.2. Skills and Labour Market Alignment

The findings indicate partial alignment between VET systems and labour market needs, with clear structural gaps in practical preparedness.

Alignment	
	Good foundational alignment in knowledge areas

Mismatch	Lack of real-world application, especially in complex scenarios
Knowledge gaps	Industry practices, advanced tools, and regulatory frameworks
Skills gaps	Decision-making under pressure, problem-solving, and autonomy

Across sectors, employers highlighted that graduates:

- Struggle with real-life complexity and unpredictability
- Lack of experience in decision-making and responsibility
- Are insufficiently prepared for high-pressure environments

Learners themselves confirmed that most learning occurs during work experience, not in formal education settings.

4.3.3. Digital Knowledge and Skills

Digital competences are universally recognised as essential, though their depth and application vary significantly.

Core knowledge	Digital literacy, sector-specific systems, and data handling
Missing skills	Advanced data analysis, AI application, system integration
Importance	Critical across all sectors

Key cross-stakeholder insights:

- Learners have basic digital skills, but limited exposure to advanced tools (AI, automation, analytics)
- Educators face constraints in keeping pace with technological change
- Industry requires applied digital competence, particularly data-driven decision-making, system navigation and integration, and AI-supported workflows.

Digitalisation is not only a technical requirement but increasingly a core operational competence across all sectors, including healthcare, logistics, and hospitality.

4.3.4. Sustainability Knowledge and Skills

Sustainability is consistently recognised as important but unevenly integrated, with strong variation across sectors.

Relevance	Increasing, especially in regulated sectors
Key knowledge	Environmental regulations, circular economy, resource efficiency
Key skills	Applying sustainability in operations and compliance

Sector-specific observations:

- Strong emphasis on waste management, logistics, and healthcare
- Moderate integration in hospitality
- Limited exposure in technical and IT education

A key gap identified is the ability to:

- Translate sustainability from conceptual awareness into operational practice
- Integrate sustainability with business and technical decision-making

4.3.5. Entrepreneurial and Transversal Skills

Transversal skills emerge as a critical priority, particularly for employability and workplace performance.

Key skills	Communication, teamwork, problem-solving, and adaptability
Additional competences	Emotional intelligence, leadership, and time management
Current provision	Present but insufficiently practised

A particularly strong finding in Malta is the importance of soft skills in real-life contexts, especially:

- Handling difficult customers (hospitality)
- Managing stress and emergencies (healthcare, logistics)
- Working under pressure and uncertainty

Industry representatives consistently highlighted:

- Communication and interpersonal skills as major gaps
- The need for emotional resilience and responsibility

4.3.6. Future Skills Needs

Stakeholders demonstrate high awareness of future trends, with strong convergence across sectors.

Future knowledge	AI, digital systems, sustainability, sector-specific technologies
Future skills	Adaptability, emotional intelligence, data literacy
Trends	Automation, AI integration, green transition, service personalisation

A notable feature in Malta is the dual emphasis on:

- Advanced digital competences (AI, data, automation)

- Human-centred skills (communication, empathy, resilience)

This reflects increasing complexity in workplaces where technology and human interaction coexist.

4.3.7. Education, Work-Based Learning and Upskilling

The effectiveness of education and training systems is perceived as moderate but inconsistent.

Education effectiveness	Strong theoretical base, limited real-world readiness
Theory vs practice	Overly theoretical in most sectors
Work-based learning	Highly valuable but uneven in quality
Upskilling	Available but constrained by access, time, and relevance

Work-based learning is consistently identified as:

- The most effective learning mechanism
- Essential for developing practical and transversal skills

However, key limitations include:

- Short duration of placements
- Limited responsibility assigned to learners
- Inconsistent mentoring and supervision

Educators also highlighted:

- Need for better simulation of real-life scenarios
- Limited access to modern tools and technologies
- Constraints in updating curricula

4.3.8. Key Takeaways

The Maltese interviews highlight a systemic need to strengthen practice-oriented learning and real-world preparedness. Key conclusions include:

- A persistent gap between theoretical knowledge and real-world application
- Digital competences are essential but require deeper, applied development
- Sustainability is increasingly important, but needs stronger operational integration
- Transversal skills, especially communication, emotional intelligence, and resilience, are critical and underdeveloped
- Work-based learning is highly effective but requires better structure, quality, and depth

Overall, the Maltese context points to the need for a more experiential, integrated, and responsive VET system capable of preparing learners for both the technological and human dimensions of future work.

4.4. Greece

The Greek interviews are predominantly composed of industry representatives and training professionals across tourism, digital training, and public administration. Despite sectoral differences, the findings are highly consistent and convergent, indicating strong systemic patterns.

4.4.1. General Observations

A very clear and uniform picture emerges across all interviews:

- Strong theoretical preparation, but insufficient practical application
- High awareness of digital transformation, particularly AI and data
- Increasing importance of sustainability and transversal skills

Compared to other countries, Greece shows a particularly strong emphasis on AI and digital transformation as immediate priorities, and high consistency across stakeholders regarding skills gaps and system limitations.

4.4.2. Skills and Labour Market Alignment

The findings indicate partial alignment, with a persistent gap between knowledge acquisition and real-world application.

Alignment	Strong theoretical alignment with labour market needs
Mismatch	Limited exposure to real industry challenges
Knowledge gaps	AI applications, data-driven decision-making
Skills gaps	Communication, advanced digital skills

Across all stakeholders, there is a shared concern that:

- Employees lack the ability to apply knowledge in real contexts
- There is insufficient preparation for complex and dynamic work environments

The most critical gap identified is the practical application of digital competences, particularly AI and data.

4.4.3. Digital Knowledge and Skills

Digital competences are identified as the most critical and rapidly evolving domain.

Core knowledge	Digital platforms, data management, and AI tools
Missing skills	Applied AI usage, data-driven decision-making
Importance	Central and increasing across all sectors

A strong and consistent message across all interviews:

- Digital literacy is no longer sufficient at a basic level
- There is a need for advanced, applied digital competences

In particular, stakeholders emphasised:

- Understanding and using AI in real workflows
- Ability to interpret and use data for decision-making
- Continuous adaptation to new technologies and systems

4.4.4. Sustainability Knowledge and Skills

Sustainability is recognised as an important but secondary priority compared to digital transformation.

Relevance	Increasing, especially in tourism and the public sector
Key knowledge	Environmental practices, resource management
Key skills	Applying sustainability in daily operations

While awareness is relatively high, the main challenge lies in:

- Moving from understanding to implementation
- Integrating sustainability into daily operational decisions

4.4.5. Entrepreneurial and Transversal Skills

Transversal skills are consistently identified as essential for employability and performance.

Key skills	Communication, teamwork, problem-solving, and initiative
Additional competences	Adaptability, collaboration, innovation
Current provision	Recognised but insufficiently developed in practice

Communication skills emerge as a notable gap, alongside:

- Ability to collaborate effectively
- Initiative and proactive behaviour
- Innovation and adaptability

These competences are seen as critical for navigating complex, technology-driven environments.

4.4.6. Future Skills Needs

There is strong alignment across stakeholders regarding future trends and required competencies.

Future knowledge	AI, data analytics, and sustainability strategies
Future skills	Critical thinking, digital literacy, and collaboration
Trends	AI integration, digital transformation, green transition

A key insight is that future work will require:

- Integration of digital and analytical competences
- Ability to operate in interdisciplinary and evolving environments
- Continuous upskilling and adaptation

4.4.7. Education, Work-Based Learning and Upskilling

Education and training systems are perceived as strong but incomplete, particularly in relation to practical readiness.

Education effectiveness	Strong theoretical foundation
Theory vs practice	Insufficient practical exposure
Work-based learning	Highly valuable but often too short
Upskilling	Available but limited by time and cost

Work-based learning is consistently viewed as:

- Highly effective for skill development
- Essential for bridging the gap between theory and practice

However, key limitations include:

- Short duration of placements
- Limited exposure to complex, real-life challenges

Upskilling opportunities exist (courses, online learning), but are constrained by:

- Time limitations
- Financial barriers

4.4.8. Key Takeaways

The Greek interviews highlight a clear and systemic need to strengthen applied, future-oriented competences. Key conclusions include:

- A persistent gap between theoretical knowledge and practical application
- Digital competences—especially AI and data literacy—are the most critical priority
- Sustainability is important, but requires stronger operational integration
- Transversal skills, particularly communication and adaptability, are underdeveloped
- Work-based learning is effective, but needs to be extended and deepened

Overall, the Greek context strongly reinforces the need for a shift toward practice-oriented, digitally integrated, and flexible learning systems, capable of responding to rapid technological change and labour market demands.

4.5. Turkey

The interviews in Türkiye include a well-balanced mix of stakeholders, including industry representatives (manufacturing, services/SMEs), VET learners, and educators. This provides a comprehensive perspective across both industrial and service-oriented sectors, with strong emphasis on production, business operations, and vocational education.

4.5.1. General Observations

Across all stakeholder groups, a consistent pattern emerges:

- VET systems provide solid foundational and theoretical knowledge
- There is a clear need for stronger alignment with real industry practices
- Digitalisation, automation, and sustainability are key drivers of change

Compared to other countries, Türkiye shows:

- A stronger emphasis on industrial and production-related skills
- Clear focus on Industry 4.0, automation, and technical competencies
- Strong recognition of practical experience as the main gap

4.5.2. Skills and Labour Market Alignment

The findings indicate partial alignment, with significant gaps in practical readiness and industry relevance.

Alignment	Good theoretical and foundational preparation
Mismatch	Limited exposure to modern technologies and real workplace conditions
Knowledge gaps	Digital production systems, AI, business operations
Skills gaps	Practical application, communication, and teamwork

Industry representatives consistently highlighted that:

- Graduates lack hands-on experience with modern technologies
- There is insufficient understanding of workplace processes and expectations
- Learners are not fully prepared for real operational environments

The most critical gap identified is practical experience in real-world settings, particularly in industrial contexts.

4.5.3. Digital Knowledge and Skills

Digital competences are increasingly important, particularly in relation to automation and production systems.

Core knowledge	Digital tools, production systems, and basic data analysis
Missing skills	AI applications, advanced digital systems, and automation integration
Importance	High and rapidly increasing

Key insights include:

- Learners and graduates have basic digital literacy, but lack exposure to industry-specific digital systems, automation technologies, and AI applications.
- Educators face challenges in keeping pace with technological developments and integrating modern tools into training environments.
- Industry expects employees to adapt quickly to new technologies and work with digital production and business systems.

4.5.4. Sustainability Knowledge and Skills

Sustainability is recognised as an important and growing area, particularly in relation to regulation and operational efficiency.

Relevance	Increasing due to regulations and environmental pressures
Key knowledge	Environmental regulations, resource efficiency

Key skills	Applying sustainable practices in production and business operations
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Stakeholders highlighted that:

- Awareness exists, but practical implementation is limited
- Sustainability is often treated as compliance, rather than an integrated practice
- There is a need to connect sustainability with operational processes, cost efficiency and business strategy.

4.5.5. Entrepreneurial and Transversal Skills

Transversal and entrepreneurial competences are identified as critical but underdeveloped.

Key skills	Communication, teamwork, problem-solving, and initiative
Additional competences	Leadership, adaptability, decision-making
Current provision	Present but not sufficiently developed in practice

A key recurring issue across stakeholders is:

- Weak communication skills, particularly in professional contexts
- Limited initiative and problem-solving autonomy among learners

Industry representatives emphasised the need for employees who:

- Understand business processes and value creation
- Can take responsibility and act proactively

4.5.6. Future Skills Needs

Stakeholders demonstrate strong awareness of future trends, particularly in industrial transformation.

Future knowledge	AI, automation, digital systems, sustainability
Future skills	Adaptability, digital competence, continuous learning
Trends	Industry 4.0, automation, global competition

A key insight is that future workforce requirements will involve:

- Integration of technical, digital, and environmental competences
- Continuous adaptation to rapid technological change
- Stronger emphasis on lifelong learning

4.5.7. Education, Work-Based Learning and Upskilling

Education and training systems are perceived as structured but not sufficiently responsive to change.

Education effectiveness	Strong foundational knowledge
Theory vs practice	Insufficient practical exposure
Work-based learning	Valuable but limited in duration and quality
Upskilling	Available but constrained by time and access

Work-based learning is recognised as:

- Essential for developing practical competencies
- Key for understanding workplace expectations

However, limitations include:

- Short internships
- Unequal access to quality placements
- Limited exposure to advanced technologies

Educators also highlighted:

- Need for continuous professional development
- Limited access to modern equipment and updated training resources

4.5.8. Key Takeaways

The interviews in Türkiye highlight a clear need to strengthen the practical and technological relevance of VET systems. Key conclusions include:

- A persistent gap between theoretical education and practical application
- Strong demand for digital and technical competencies, particularly in automation and AI
- Sustainability is increasingly relevant but requires better integration into operations
- Transversal skills—especially communication, initiative, and teamwork—are underdeveloped
- Work-based learning is essential but needs to be expanded, modernised, and better aligned with industry

Overall, the Turkish context emphasises the need for a shift toward industry-aligned, practice-oriented, and technology-driven training systems that support both industrial transformation and labour market competitiveness.

4.6. Cross-Country Synthesis

This cross-country analysis integrates findings from interviews conducted in Malta, Greece, Italy, the Netherlands, and Türkiye. Despite differences in national contexts and sectors, the results show a strong level of convergence, pointing to shared structural challenges and common priorities for vocational education and training (VET) systems.

4.6.1. Overall Patterns

Across all countries, stakeholders consistently report that VET systems provide a solid theoretical foundation, but do not sufficiently prepare learners for real work environments. The central issue is not a lack of knowledge but a lack of ability to apply it in practice.

At the same time, three competence areas emerge as particularly important across all contexts: digital competences, sustainability, and transversal skills. These areas are increasingly interconnected and are shaping both current and future labour market demands.

4.6.2. Skills and Labour Market Alignment

Across all countries, alignment between education and labour-market needs is partial. While curricula reflect relevant knowledge areas, they often fail to translate into practical readiness.

Theoretical preparation	Generally strong across all countries
Practical readiness	Insufficient, especially in complex work situations
Knowledge gaps	Industry practices, digital systems, business processes
Skills gaps	Problem-solving, autonomy, communication, and decision-making

Employers consistently report that graduates lack experience with real tasks, tools, and responsibilities. Learners, in turn, confirm that they feel underprepared for real working conditions. This confirms that the main gap lies in the transition from knowing to doing.

4.6.3. Digital Competences

Digital competences are identified as a core requirement across all sectors, but a clear distinction emerges between basic and advanced skills.

Basic digital skills	Widely present (e.g. standard software, communication tools)
Advances skills	Largely missing (AI, data analysis, system integration)

Application level	Limited experience with real digital tools used in industry
Overall importance	Critical and rapidly increasing

Across countries, digital competences are no longer seen as supplementary but as foundational. In particular, the ability to work with data, understand AI tools, and integrate digital systems into workflows is becoming essential.

4.6.4. Sustainability

Sustainability is recognised as an important and growing area, although its level of integration varies across sectors and countries.

Awareness	Generally high
Teaching approach	Often theoretical or conceptual
Practical application	Limited across most contexts
Sector variation	Stronger in regulated sectors, weaker in others

A consistent challenge is the transition from understanding sustainability concepts to applying them in real work situations. Stakeholders emphasise the need to integrate sustainability into operational processes and decision-making, rather than treating it as a standalone topic.

4.6.5. Transversal Skills

Transversal skills are considered essential across all countries and sectors, often valued as highly as technical competencies.

Communication	Frequently underdeveloped
Teamwork	Present but not always applied in real contexts
Problem-solving	Limited in complex situations
Adaptability	Increasingly required but not systematically developed
Initiative and responsibility	Often lacking

Employers particularly emphasise communication and professional behaviour as critical gaps. Learners often lack experience in handling real-life situations, such as working under pressure, interacting with clients, or making independent decisions.

4.6.6. Future Skills Needs

There is strong alignment across countries regarding future competence requirements, reflecting broader global trends.

Knowledge	AI, data analytics, digital systems, sustainability
Skills	Adaptability, critical thinking, and continuous learning
Labor market trends	Digital transformation, automation, green transition

The findings suggest that employability will increasingly depend on the ability to combine technical, digital, and interpersonal competences, as well as the capacity for lifelong learning.

4.6.7. Education, Work-Based Learning and Upskilling

Education systems are generally perceived as structurally sound but insufficiently responsive to changing labour-market demands.

Education systems	Strong theoretical foundation
Balance	Overemphasis on theory
Work-based learning	Highly effective but inconsistent
Upskilling	Available but constrained by time and access

Work-based learning is the most effective mechanism for developing practical competencies. However, its impact is often limited by short duration, inconsistent quality, and limited learner responsibility.

Upskilling opportunities, particularly through digital formats, are increasingly important but require better alignment with real labour-market needs.

4.6.8. Key Cross-Country Insights

The cross-country synthesis highlights several systemic and strategic conclusions:

1. The theory–practice gap is universal: all countries report a structural mismatch between education and labour-market needs, particularly in practical competencies.
2. Digital competences are core, not optional: AI, data, and digital systems are becoming foundational across all sectors.
3. Sustainability requires operationalisation: a shift from conceptual knowledge to real-world application.
4. Transversal skills are critical and underdeveloped: Communication, adaptability, and problem-solving are consistently lacking but highly valued.



5. Work-based learning is central but needs strengthening: It is the most effective tool, but requires better structure, quality, and integration.
6. Lifelong learning is becoming essential: Rapid technological and economic changes require continuous upskilling.

5. Survey Analysis

5.1. The Netherlands

5.1.1. Sample Overview

The Dutch survey includes 27 respondents, providing a sufficiently robust dataset for analysing both competence importance and availability. Compared to earlier findings, this dataset enables a clearer identification of competence gaps and structural patterns, aligning the Netherlands with the analytical depth of other countries.

The Dutch sample is primarily composed of small enterprises and owner-led organisations, with a strong presence of service-oriented sectors.

Company size	The majority of micro firms (52% with 1–9 employees)
Legal form	Strong dominance of private limited companies (BV – 81.5%)
Respondent profile	Mainly owners (56%) and top management
Sectors	Diverse, led by services, trade, ICT, and finance

The sample reflects a business-oriented ecosystem with decision-makers strongly represented, which supports the reliability of strategic responses.

5.1.2. Strategic Importance vs Ease of Availability (Gap Analysis)

The results reveal a clear imbalance between importance and availability, particularly in the digital domain.

Overall pattern				
Theme	Mean SI	Mean EA	Average gap	Interpretation
Digital - Knowledge	4.08	3.27	0.81	Significant gap
Digital - Skills	4.02	3.24	0.78	Significant gap
Business - Knowledge	3.78	3.19	0.59	Significant gap
Entrepreneurship - Skills	3.88	3.37	0.51	Significant gap
Sustainability - Skills	2.76	2.66	0.10	Small gap

Sustainability - Knowledge	2.65	2.69	-0.04	Availability exceeds importance
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The findings clearly show that digital competences are both highly valued and difficult to find, while sustainability competences are perceived as less important and more available.

Moreover, the largest gaps are concentrated in advanced and applied digital competences.

Top competence gaps		
Competence	Gap	Interpretation
Cybersecurity and data protection principles	0.93	Critical shortage in digital security
Adapting and improving digital processes	0.93	High demand for applied digital problem-solving
Using digital tools and platforms	0.89	Core operational digital gap
Automation, AI, and digital systems logic	0.82	Advanced digital knowledge gap
Data and information concepts	0.78	Data literacy shortage

These results confirm that the main challenge is not basic digital literacy, but higher-level digital competences, especially those linked to:

- AI and automation
- data analysis
- cybersecurity
- process optimisation

Finally, sustainability competences show a very different pattern.

Observation	Implication
Low importance scores (≈ 2.6 – 3.0)	Limited prioritisation in VET and the labour market
Small or negative gaps	Competences are relatively available
EA > SI in some cases	Possible oversupply or low demand

This confirms a consistent finding across Dutch data: sustainability is not yet perceived as a core competence area, despite broader policy relevance.

5.1.3. Internal Structure of Competences (Correlations)

The correlation analysis highlights how competencies are grouped by respondents.

Strong correlations are concentrated in specific domains.

Strategic importance - key patterns	
Cluster	Interpretation
Sustainability (knowledge + skills)	Strong conceptual coherence across environmental topics
Entrepreneurship skills	Planning, networking, and opportunity recognition are closely linked
Business knowledge	Value creation and market understanding form a consistent domain
Digital knowledge	Core digital concepts are interconnected

Compared to other countries, fewer strong correlations appear in the digital domain, suggesting a slightly less integrated perception of digital competences.

Moreover, availability correlations show strong clustering across all domains.

Ease of availability - key patterns	
Cluster	Interpretation
Digital competences	Tools, data, AI, and cybersecurity are closely linked in availability
Sustainability competences	Availability is consistent across the domain
Entrepreneurship competences	Skills tend to be available as a group
Business competences	Market and value creation knowledge are strongly connected

This indicates that competences are generally developed in clusters, even if their importance differs.

5.1.4. Key Insights

The Netherlands presents a clear case of high importance combined with targeted shortages, particularly in digital competencies. First, digital competences dominate the skills landscape,



with both high importance and significant gaps. This confirms that digital transformation is a key driver of skills demand.

Second, business and entrepreneurial competences show moderate but consistent gaps, indicating a need for stronger integration of practical and strategic skills.

Third, sustainability competences are characterised by low importance and minimal gaps, suggesting that they are not yet embedded as a priority in the system.

5.1.5. Implications

The findings suggest that training programmes in the Netherlands should prioritise:

- Advanced digital competences (AI, data, cybersecurity, process optimisation)
- Practical application of digital tools in real work contexts
- Strengthening business and entrepreneurial competencies

At the same time, there is a need to increase the relevance and integration of sustainability competences and to better align emerging policy priorities with training systems.

5.2. Italy

5.2.1. Sample Overview

The Italian survey includes 42 respondents, providing a significantly more robust dataset compared to other countries. This allows for more reliable interpretation of patterns, particularly in relation to competence gaps and internal relationships between skills.

The sample includes stakeholders from education and labour market contexts, ensuring a balanced perspective on both training provision and skill demand. The Italian sample is also strongly entrepreneurial and SME-driven, with high participation of business owners across service and manufacturing sectors.

Company size	The majority of micro firms (55%), with additional SME representation
Legal form	Dominated by limited liability companies (Srl – 60%)
Respondent profile	Very high share of owners (69%)
Sectors	Led by services (31%) and manufacturing (24%)

5.2.2. Strategic Importance vs Ease of Availability (Gap Analysis)

The Italian data allows for direct comparison between Strategic Importance (SI) and the Ease of Availability (EA).

The resulting gap (SI – EA) provides a clear indication of skills shortages.

Overall pattern				
Theme	Mean SI	Mean EA	Average gap	Interpretation
Digital - Skills	3.99	3.08	0.91	Highest shortage
Entrepreneurship - Skills	3.61	2.87	0.74	Strong shortage
Digital - Knowledge	3.86	3.17	0.69	Significant shortage
Business - Knowledge	3.70	3.05	0.65	Moderate–high shortage
Sustainability - Skills	3.07	2.74	0.33	Moderate gap
Sustainability - Knowledge	2.89	2.79	0.10	Minimal gap

The results clearly show that digital competences and entrepreneurial skills represent the most critical shortages, while sustainability competences show comparatively small gaps.

Moreover, the largest gaps are concentrated in applied digital competences.

Top competence gaps		
Competence	Gap	Interpretation
Applying cybersecurity and privacy practices	0.97	High demand, limited availability
Adapting and improving processes through digital solutions	0.93	Critical for innovation and efficiency
Using digital tools and platforms	0.90	Core operational skill gap
Mobilising resources and building networks	0.86	Entrepreneurial capability gap
Cybersecurity principles	0.85	Strategic digital knowledge gap

These findings indicate that the main issue is not basic digital literacy, but advanced and applied digital competences, particularly those linked to problem-solving, system improvement, and data use and security.

Finally, Sustainability competences show consistently small gaps, due to both lower perceived importance and relatively similar availability.

Observation	Implication
Low importance scores	Sustainability not yet central in VET priorities
Small gaps	Limited pressure from the labour market
Slightly higher gaps in skills vs knowledge	Practical sustainability is still underdeveloped

This suggests that sustainability is not yet a driver of skills demand, but rather an emerging area.

5.2.3. Internal Structure of Competences (Correlations)

The correlation analysis reveals how respondents conceptually group competences.

Strong correlations are mainly found within the following themes.

Strategic importance - key patterns	
Cluster	Interpretation
Sustainability knowledge items	Perceived as a coherent theoretical domain
Digital skills (tools, data, process improvement)	Strongly interconnected operational competences
Digital knowledge + digital skills (cross-theme)	Clear link between understanding and application

A notable cross-theme correlation appears between digital process improvement and market understanding. This suggests that digital competences are increasingly linked to business value creation, not just technical execution.

In cases of availability correlations, it highlights where shortages tend to co-occur.

Ease of availability - key patterns	
Cluster	Interpretation
Sustainability skills	Shortages tend to appear together (systemic capability gap)
Entrepreneurship skills	Strong internal coherence (planning, networking, risk)

Digital knowledge (AI + cybersecurity)	Emerging advanced digital cluster
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This indicates that gaps are not isolated, but occur in bundles of competences, reinforcing the need for integrated training approaches.

5.2.4. Key Insights

The Italian survey provides a clear and consistent picture of current and emerging skills needs. First, digital competences are both highly important and difficult to find, particularly at an advanced and applied level. This confirms that digital transformation is the main driver of skills demand.

Second, entrepreneurial competences represent a significant but often overlooked gap, especially in areas such as resource mobilisation, initiative, and managing uncertainty.

Third, business knowledge competences are moderately important but still show clear shortages, particularly in relation to innovation and organisational change.

Finally, sustainability competences remain under-prioritised, with low importance scores and limited perceived gaps. This may indicate a lag between policy priorities and labour market demand.

5.2.5. Implications

The findings suggest that training programmes should prioritise:

- Applied digital competences (data, AI, cybersecurity, process improvement)
- Entrepreneurial and transversal skills (initiative, networking, risk management)
- Integration of digital and business competences

At the same time, sustainability should not be neglected but rather better integrated into practical, sector-specific contexts to increase its perceived relevance.

5.3. Malta

5.3.1. Sample Overview

The Maltese survey includes 36 respondents, providing a solid and balanced dataset. Compared to other countries, the responses show a high level of consistency across items, enabling a reliable interpretation of both the importance and the availability of competences.

The Maltese sample is characterised by a more balanced distribution of company sizes and strong representation of employees, particularly from the education and public sectors.

Company size	Balanced, with a notable share of medium-sized firms (36% with 50–249 employees)
Legal form	Mixed structure, dominated by Ltd companies (33%) and sole proprietors (28%), with several public and VET institutions
Respondent profile	Predominantly staff/employees (61%), fewer decision-makers
Sectors	Strong concentration in education (31%) and health/social sectors

The sample reflects a more operational perspective, with insights largely coming from employees rather than strategic leadership.

5.3.2. Strategic Importance vs Ease of Availability (Gap Analysis)

In contrast to Italy, the Maltese data reveal a very small gap between strategic importance and ease of availability across all competences.

Overall pattern				
Theme	Mean SI	Mean EA	Average gap	Interpretation
Business - Knowledge	4.47	4.38	0.09	Small gap
Entrepreneurship - Skills	4.45	4.37	0.08	Small gap
Sustainability - Skills	4.22	4.16	0.06	Small gap
Sustainability - Knowledge	4.08	4.05	0.03	Small gap
Digital - Knowledge	4.28	4.26	0.02	Minimal gap
Digital - Skills	4.24	4.23	0.01	Minimal gap

The most striking result is that all competence areas are rated highly (means above 4.0), and availability closely matches importance.

Moreover, unlike other countries, Malta does not show significant shortages. Instead, the data suggests:

- A high level of alignment between training and labour market needs
- Competences are both valued and relatively accessible

- No critical bottlenecks in specific domains

Even the largest observed gaps remain minimal:

Top competence gaps	
Competence	Gap
Mobilising resources and building networks	0.14
Innovation, projects, and organisational change	0.12
Planning entrepreneurial initiatives	0.12

These values are well below the thresholds observed in Italy, indicating systemic balance rather than shortage.

5.3.3. Internal Structure of Competences (Correlations)

The correlation analysis provides important insight into how competencies are conceptually linked.

Several very strong correlations ($r \geq 0.90$) emerge, including across the following themes.

Strategic importance - key patterns	
Cluster	Interpretation
Digital knowledge ↓ digital skills	Strong integration between understanding and use ($r = 0.983$)
Sustainability knowledge ↓ sustainability skills	Sustainability seen as a unified competence area
Business knowledge ↓ entrepreneurship skills	Close link between strategy and action

Notably, cross-theme correlations are more frequent than in other countries. This suggests that respondents perceive competencies as interconnected rather than separate domains.

Furthermore, the availability correlations reinforce this integrated view.

Ease of availability - key patterns	
Cluster	Interpretation
Digital competences	Availability of tools, data, and AI knowledge is strongly linked

Sustainability competences	Availability gaps occur as a system, not individually
Entrepreneurship competences	Planning, networking, and risk management form a coherent group

The consistency of these correlations indicates a mature and structured competence ecosystem.

5.3.4. Key Insights

The Maltese survey presents a notably different picture from that of other countries. First, competences across all domains (digital, sustainability, business, and entrepreneurship) are considered highly important. There is no clear hierarchy where one domain dominates.

Second, the gap between importance and availability is minimal, suggesting that the system is relatively effective in providing the competences required by the labour market.

Third, competences are perceived as highly interconnected, particularly between:

- digital knowledge and application
- sustainability theory and practice
- business understanding and entrepreneurial action

This indicates a more integrated approach to skills development, rather than fragmented competence areas.

5.3.5. Implications

The Maltese results suggest a system that is well aligned with labour market needs. Rather than addressing major skill shortages, the focus should be on:

- Maintaining alignment between education and labour market developments
- Continuing to integrate competences across domains
- Ensuring that high importance translates into continued relevance over time, particularly in rapidly evolving areas such as AI and sustainability

At the same time, the absence of large gaps should not be interpreted as the absence of need, but rather as an opportunity to build more advanced and specialised competences.

5.4. Greece

5.4.1. Sample Overview

The Greek survey includes 29 respondents. The Greek sample reflects a balanced SME structure with strong management-level participation and sectoral diversity.

Company size	Mainly micro and small firms ($\approx 90\%$ below 50 employees)
Legal form	Dominated by limited liability companies (52%), followed by mixed company types
Respondent profile	Even distribution across top management (31%), middle management (31%), and owners (28%)
Sectors	Concentrated in education (28%), with representation from transport, tourism, ICT, and agriculture

The sample combines strategic and operational perspectives, offering a well-balanced view of labour market needs.

5.4.2. Strategic Importance vs Ease of Availability (Gap Analysis)

The Greek results show a clear and consistent mismatch between importance and availability, with several competences exhibiting large gaps.

Overall pattern				
Theme	Mean SI	Mean EA	Average gap	Interpretation
Digital - Knowledge	4.19	3.09	1.10	Critical gap
Business - Knowledge	4.00	2.97	1.03	Critical gap
Sustainability - Skills	4.01	3.16	0.85	Significant gap
Sustainability - Knowledge	3.98	3.25	0.73	Significant gap
Digital - Skills	3.98	3.26	0.72	Significant gap
Entrepreneurship - Skills	3.86	3.15	0.71	Significant gap

The results indicate that all competence areas show notable shortages, with particularly severe gaps in digital and business knowledge.

Moreover, the largest gaps are concentrated in strategic and knowledge-based competencies.

Top competence gaps		
Competence	Gap	Interpretation

Automation, AI, and digital systems logic	1.31	Critical shortage in advanced digital knowledge
Markets, customers, and opportunities	1.20	Business awareness gap
Financial, legal, and ethical constraints	1.20	Structural business knowledge gap
Digital technologies and infrastructures	1.07	Core digital systems gap
Cybersecurity principles	1.03	Security-related shortage

These findings indicate that the most significant shortages are not only technical, but also strategic and analytical, particularly in understanding systems, markets, and digital infrastructures.

Finally, unlike the Netherlands and Malta, sustainability competences in Greece show moderate to significant gaps, particularly in their practical application.

Observation	Implication
High importance (around 4.0)	Sustainability is recognised as relevant
Moderate–high gaps	Limited availability of applied sustainability competences
Skills gap > knowledge gap	Practical implementation is the main challenge

Entrepreneurship and transversal skills also show consistent gaps, particularly in:

- initiative and opportunity identification
- managing uncertainty
- applying knowledge in practice

5.4.3. Internal Structure of Competences (Correlations)

The correlation analysis shows how respondents group competences conceptually. Strong correlations are mainly found within the following themes.

Strategic importance - key patterns	
Cluster	Interpretation
Digital skills (data + process improvement)	Strong operational linkage
Sustainability skills	Practical sustainability competences are interconnected
Entrepreneurship skills	Idea generation and networking seen as a combined capability

Sustainability knowledge	Conceptual coherence within environmental topics
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Compared to Malta, cross-theme correlations are less frequent, indicating a more segmented perception of competences.

Moreover, availability correlations confirm that shortages tend to appear in clusters.

Ease of availability - key patterns	
Cluster	Interpretation
Digital (AI + data + process improvement)	Advanced digital gaps are interconnected
Sustainability competences	Availability issues affect the whole domain
Entrepreneurship competences	Skills shortages occur as a group

This suggests that addressing individual competences in isolation will be insufficient; instead, bundled training approaches are needed.

5.4.4. Key Insights

The Greek survey highlights a high-demand and low-availability context. First, competences across all domains are rated as highly important, indicating strong awareness of labour market needs.

Second, availability does not match importance, resulting in widespread gaps across all competence areas.

Third, the most critical shortages are found in:

- advanced digital knowledge (AI, systems, data)
- business and market understanding
- applied sustainability competences

Finally, competences are perceived in more distinct domains, rather than as fully integrated systems, suggesting a more fragmented skills ecosystem.

5.4.5. Implications

The Greek results point to a strong need for capacity-building across multiple competence areas. Priority should be given to:

- Advanced digital competences (AI, data, infrastructure)
- Business and market-related knowledge
- Practical sustainability skills



- Integrated transversal competences (problem-solving, initiative)

At the same time, training approaches should bridge theory and application, ensuring that high awareness of importance translates into real competence development.

5.5. Turkey

5.5.1. Sample Overview

The survey in Turkey includes 29 respondents, providing a balanced dataset across competence domains. The Turkish sample shows a balanced mix of small enterprises and institutional actors, with strong representation from the education and primary sectors.

Company size	Predominantly micro and small firms (86% below 50 employees)
Legal form	Highly diverse, including sole proprietorships (28%) and mixed institutional types
Respondent profile	Balanced between owners (35%), middle management (31%), and top management (17%)
Sectors	Strong presence of education (35%) and agriculture, with additional sector diversity

The sample captures a heterogeneous ecosystem, combining business and public/education actors, which explains the broad perspective on skills needs.

5.5.2. Strategic Importance vs Ease of Availability (Gap Analysis)

The Turkish data reveal a high level of alignment between importance and availability, with no significant shortages across competence areas.

Overall pattern				
Theme	Mean SI	Mean EA	Average gap	Interpretation
Sustainability - Knowledge	3.35	3.24	0.11	Small gap
Digital - Knowledge	3.98	3.87	0.11	Small gap
Business - Knowledge	4.01	3.97	0.04	Small gap
Sustainability - Skills	3.64	3.62	0.02	Minimal gap

Entrepreneurship - Skills	3.87	3.88	-0.01	Balanced (EA ≥ SI)
Digital - Skills	3.88	3.94	-0.06	Availability exceeds importance

The results indicate that competence supply is generally sufficient and, in some areas, even exceeds perceived demand.

Unlike Greece and Italy, Türkiye does not display structural shortages. Instead, the findings suggest a balanced or slightly oversupplied competence landscape, particularly strong availability in digital and entrepreneurial skills, and no areas of critical unmet demand.

Top competence gaps		
Competence	Gap	Interpretation
Managing and analysing data	-0.14	Availability exceeds demand
Adapting digital processes	-0.13	Strong supply of applied digital skills
Using digital tools	-0.10	Well-established competence

This suggests that learners and workers may have access to competences that are not yet fully utilised or required at scale.

Finally, sustainability and business competencies show small but positive gaps.

Observation	Implication
Moderate importance levels	Recognised but not dominant priority
Small gaps	Limited but not critical shortages
Balanced availability	Competences are generally accessible

This indicates that these domains are relatively stable, without strong pressure from labour market demand.

5.5.3. Internal Structure of Competences (Correlations)

The Turkish dataset shows a high number of strong correlations, indicating a well-structured perception of competences.

Strategic importance - key patterns

Cluster	Interpretation
Digital knowledge (AI, cybersecurity, infrastructure)	Highly integrated advanced digital domain
Digital skills (data, tools, process improvement)	Strong operational coherence
Entrepreneurship skills	Planning, networking, and risk seen as a unified capability
Sustainability skills	Practical sustainability competences closely linked
Business knowledge	Market and financial knowledge form a consistent domain

Notably, multiple cross-theme correlations appear, particularly between digital knowledge and digital skills and business and entrepreneurship competencies. This suggests a relatively integrated competence framework, similar to Malta but more technically oriented.

Furthermore, the availability correlations are extensive and highly consistent.

Ease of availability - key patterns	
Cluster	Interpretation
Digital competences	Strong alignment across AI, data, and tools
Entrepreneurship competences	Skills are available as a bundle
Sustainability competences	Availability is consistent across the domain
Business competences	Financial, market, and innovation knowledge are linked

This reinforces the conclusion that competences are developed and available as interconnected systems, rather than isolated skills.

5.5.4. Key Insights

The Turkish survey reflects a high-availability and balanced-demand context. First, competences across all domains are considered moderately to highly important, but not at the same intensity level observed in Malta or Greece.

Second, availability generally matches or exceeds importance, particularly in digital and entrepreneurial skills. This suggests that the system may be producing competences at a rate that meets or slightly surpasses demand.

Third, competences are perceived as strongly interconnected, especially in the digital domain, where knowledge and application are closely linked.

Finally, the absence of significant gaps does not necessarily indicate optimal alignment, but may also reflect uneven utilisation of skills and limited demand for advanced competences in some sectors.

5.5.5. Implications

The findings for Turkey suggest a different strategic focus than those of other countries. Rather than addressing shortages, priorities should include:

- Better alignment between competence supply and labour market utilisation
- Strengthening demand for advanced competences, particularly in digital transformation
- Ensuring that existing competences are applied in real work contexts

At the same time, training systems should continue to support integrated competence development and connections between digital, business, and entrepreneurial skills.

5.6. Cross-Country Synthesis

5.6.1. Overall Pattern: Importance vs Availability

Across all five countries, the aggregated results show a consistent structural pattern: competences are generally rated as important, but their availability lags behind, particularly in digital and business domains.

Theme	Mean SI	Mean EA	Average gap	Interpretation
Digital - Knowledge	4.07	3.54	0.53	Significant gap
Digital - Skills	4.03	3.54	0.49	Moderate gap
Business - Knowledge	3.99	3.52	0.47	Moderate gap
Entrepreneurship - Skills	3.93	3.51	0.42	Moderate gap
Sustainability - Skills	3.54	3.27	0.27	Small gap
Sustainability - Knowledge	3.39	3.21	0.18	Small gap

The results indicate that digital competences are the most critical gap area across countries, followed by business and entrepreneurial competences. Sustainability, while relevant, shows comparatively smaller gaps.

5.6.2. Main Competence Gaps

At the aggregate level, the largest gaps are concentrated in advanced digital and business-related competences.

Competence	Gap	Interpretation
Cybersecurity and data protection	0.58	Persistent shortage in digital security
Markets, customers, opportunities	0.55	Business awareness gap
AI and automation systems	0.54	Advanced digital knowledge deficit
Digital infrastructures	0.52	Structural digital capacity gap
Innovation and organisational change	0.52	Strategic business gap
Digital process improvement	0.51	Applied digital skills gap

These findings show that the main challenge is not basic skills, but the ability to:

- apply digital technologies in real contexts
- work with data and AI systems
- connect digital tools with business decision-making

5.6.3. Sustainability: Lower Gaps, Different Dynamics

Sustainability competences follow a different pattern.

Observation	Implication
Lower importance scores overall	Not yet fully prioritised in all countries
Smaller gaps (0.15–0.30)	Competences more available relative to demand
Strong internal consistency	Sustainability seen as a coherent domain

This suggests that sustainability is recognised but not yet fully operationalised in labour market expectations.

5.6.4. Competence Structures (Correlation Analysis)

The correlation analysis provides insight into how competencies are perceived as interconnected.

Strategic importance - key patterns

Cluster	Interpretation
Sustainability (knowledge + skills)	Highly integrated domain across all countries
Digital (data + process improvement)	Strong link between data use and digital transformation
Entrepreneurship (opportunity + planning)	Clear internal coherence
Cross domain links (sustainability knowledge → skills)	Indicates progression from awareness to application

Notably, sustainability shows the strongest internal coherence, even though it is not the highest priority.

Moreover, availability correlations reinforce the idea that competences are developed in bundles rather than individually.

Ease of availability - key patterns	
Cluster	Interpretation
Entrepreneurship skills	Networking, risk, and initiative are closely linked
Sustainability skills	Implementation, monitoring, and strategy are interconnected
Digital competences	Infrastructure, data, and tools are strongly associated

This indicates that improving one competence area positively influences related skills.

5.6.5. Cross-Country Differences

While the aggregate shows common trends, national patterns differ in intensity.

Greece	The highest gaps are especially in digital and business competencies
Netherlands	Strong digital gaps, lower sustainability priority
Italy	Significant gaps across digital and entrepreneurial domains
Turkey	Balanced system, smaller gaps, some oversupply in digital skills
Malta	Very small gaps, high alignment between importance and availability

This confirms that while priorities are shared, system readiness differs significantly.



5.6.6. Key Insights

Several cross-cutting conclusions emerge from the analysis. First, digital competences are the central priority across all countries, with consistent gaps in areas such as AI, data analysis, and cybersecurity.

Second, business and entrepreneurial competencies are critical but underdeveloped, particularly in relation to innovation, market understanding, and decision-making.

Third, sustainability competences are systematically less prioritised, despite their strategic relevance in policy and long-term economic transitions.

Fourth, competences are not perceived in isolation but as interconnected clusters, especially within sustainability and entrepreneurship domains.

Finally, the results highlight a structural issue: education and training systems are still more effective at delivering foundational knowledge than applied, work-relevant competencies.

5.6.7. Implications for Training and Policy

The cross-country evidence suggests a clear direction for future interventions. Priority should be given to:

- strengthening applied digital competences (AI, data, cybersecurity)
- integrating business and entrepreneurial thinking into all training pathways
- moving from theoretical to practice-based learning models
- embedding sustainability into real operational contexts, not only conceptual teaching

At the system level, the findings reinforce the need for:

- stronger alignment between education and labour market needs
- more flexible and modular learning approaches
- increased focus on competence application rather than knowledge acquisition alone

6. Integrated Findings

6.1 Overall Synthesis

The combined analysis of focus groups, interviews, and survey data reveals a consistent and robust pattern across all participating countries. While each method captures a different dimension—perceptions (focus groups), real workplace experiences (interviews), and quantified assessments (survey)—their findings converge strongly.

Across all sources, the central issue is not a lack of awareness regarding key competences, but rather a persistent difficulty in translating knowledge into practical application. This disconnect between learning and doing appears as a structural characteristic of current education and training systems.

6.2 Digital Competences

Digital competences clearly emerge as the most critical area across all data sources. Focus group participants consistently emphasised the importance of artificial intelligence, data literacy, and digital tools, while also highlighting a lack of depth and critical engagement with these technologies. Interviewees reinforced this perspective by pointing to difficulties in applying digital tools, particularly AI and data analysis, in real workplace contexts.

Survey data provide quantitative confirmation of this pattern. Digital knowledge and skills are rated as the most important competence areas, and they also exhibit the largest gaps between importance and availability. In particular, cybersecurity, AI and automation, data handling, and digital process optimisation stand out as areas where demand significantly exceeds supply.

Taken together, the evidence indicates that the challenge is not basic digital literacy, but the development of advanced, applied, and critically informed digital competences. These include the ability to interpret data, evaluate AI outputs, and integrate digital tools into decision-making processes.

6.3 The Theory-Practice Gap as a Systemic Constraint

A second major finding concerns the persistent gap between theoretical education and practical application. This issue is consistently highlighted across all countries and data sources.



Focus group discussions repeatedly point to the difficulty learners face when transitioning from education to the workplace, often described as a gap between “knowing” and “doing.” Interviews provide concrete examples of this, with employers noting that graduates lack hands-on experience, familiarity with real workflows, and the ability to operate under practical constraints such as deadlines and uncertainty.

Survey results further support this conclusion, showing moderate to significant gaps in competencies that require applied use, particularly in digital, business, and entrepreneurial domains.

This suggests that current systems are effective at delivering foundational knowledge but less effective at developing operational competencies and workplace readiness. The limited duration of internships, insufficient exposure to real business environments, and lack of project-based learning opportunities all contribute to this structural gap.

6.4 Business and Entrepreneurial Competences

Business and entrepreneurial competences emerge as a second key area of concern. While not as dominant as digital competences, they are consistently identified as essential across all methods.

Focus group participants emphasise the importance of initiative, communication, and an entrepreneurial mindset. Interviewees highlight gaps in understanding how businesses operate, particularly in areas such as value creation, customer orientation, and decision-making under uncertainty. Survey data confirms these observations, showing moderate but consistent gaps in business knowledge and entrepreneurial skills.

What is particularly notable is that these competences are widely recognised as critical for employability, yet they are not systematically embedded in education and training pathways. Their development often depends on individual teaching approaches or specific learning experiences, rather than structured curricula.

This indicates a need to move beyond conceptual understanding and towards systematic, practice-based development of entrepreneurial competences, including problem-solving, initiative, and responsibility.

6.5 Sustainability

Sustainability competences exhibit a distinct pattern compared to those in the digital and business domains. Across all data sources, sustainability is recognised as relevant, particularly

in light of regulatory and environmental developments. However, it is consistently perceived as less central to immediate labour market needs.

Focus group discussions suggest that sustainability is often addressed at a conceptual level, with limited connection to practical workplace applications. Interviewees confirm that while awareness exists, translating sustainability principles into operational decisions and processes remains difficult. Survey results reflect this dynamic, with sustainability competences receiving lower importance ratings and showing relatively small gaps between importance and availability.

This indicates that sustainability is not yet fully embedded as an operational competence area, but remains largely theoretical. The challenge moving forward is to integrate sustainability into real work contexts, linking it to business processes, decision-making, and measurable outcomes.

6.6 Transversal Skills

Transversal competences, such as communication, teamwork, critical thinking, and adaptability, are consistently identified as essential across all countries and stakeholder groups.

Focus groups highlight their importance for employability and professional success, while interviews frequently point to deficiencies in communication and teamwork, particularly in real workplace settings. Survey findings reinforce this, with moderate gaps observed in entrepreneurship-related competences, which strongly overlap with transversal skills.

Despite their recognised importance, these competences are not systematically developed or assessed. Their acquisition often depends on informal learning processes, individual initiative, or specific project-based experiences. This lack of structure limits their effectiveness and consistency across learners.

The findings suggest that transversal competences need to be explicitly integrated into curricula, with clear learning objectives and assessment mechanisms, rather than being treated as implicit outcomes.

6.7 Cross-Country Variation

While the overall patterns are consistent, the intensity of gaps varies across countries. Greece exhibits the most pronounced gaps, particularly in digital and business competencies, indicating broader systemic challenges. The Netherlands shows strong digital demand, but



lower prioritisation of sustainability. Italy presents significant gaps across both digital and entrepreneurial domains, reflecting a need for broader competence development.

In contrast, Türkiye demonstrates a more balanced profile, with smaller gaps and relatively good alignment between importance and availability. Malta stands out as the most balanced system, with high levels of both importance and availability, resulting in minimal gaps.

These differences suggest that while competence needs are broadly shared, the capacity of systems to respond varies significantly, depending on structural, institutional, and economic factors.

6.8 Key Conclusions

The integrated analysis leads to several overarching conclusions. First, digital competences are the central priority across all countries, particularly in their advanced and applied forms. Second, the primary gap lies not in knowledge acquisition, but in the ability to apply knowledge in real-world contexts. Third, business and entrepreneurial competencies are essential but are not sufficiently structured.

In addition, sustainability remains under-integrated in practice, and transversal skills, although highly valued, are not systematically embedded in education and training systems. Taken together, these findings point to a broader systemic issue: an overemphasis on theoretical knowledge at the expense of applied competencies.

6.9 Implications for the Project

The evidence strongly supports the need for a shift in training approaches. Future interventions should prioritise practice-based learning models that integrate digital, entrepreneurial, and sustainability competencies in real or simulated work contexts.

There is also a clear need for more flexible and modular learning pathways, supported by digital tools and AI-based learning environments. Such approaches can facilitate continuous skill development while ensuring relevance to labour market needs.

Ultimately, the findings indicate that improving employability requires not only updating what is taught but fundamentally rethinking how competences are developed, applied, and assessed.

7. Key Outcomes

The combined evidence from focus groups, interviews, and survey analysis leads to several overarching outcomes that define the current skills landscape across the participating countries.

First, there is a clear and consistent prioritisation of digital competences, particularly in areas such as artificial intelligence, data analysis, cybersecurity, and digital process optimisation. These competences are not only rated as highly important across all countries, but also show the most persistent gaps between importance and availability. This indicates that digital transformation is not a future requirement, but an already established structural demand.

Second, the analysis confirms the existence of a systemic gap between theory and practice. While learners often acquire solid theoretical foundations, they face difficulties when applying this knowledge in real work environments. This gap is reflected in limited exposure to workplace conditions, insufficient hands-on learning, and a lack of experience in real-world problem-solving.

Third, business and entrepreneurial competencies emerge as essential but underdeveloped areas. Stakeholders consistently emphasise the importance of initiative, decision-making, and understanding of market dynamics, yet these competencies are not systematically embedded in training pathways. As a result, learners often lack the ability to translate knowledge into value-creating activities.

Fourth, sustainability competences are recognised across all countries but remain unevenly integrated. They are frequently addressed at a conceptual level, with limited connection to operational practices. This results in relatively small gaps, not because the need is fully met, but because the demand is not yet fully activated in practice.

Finally, transversal skills, including communication, teamwork, adaptability, and critical thinking, are consistently identified as critical for employability. However, their development is often informal and dependent on specific learning contexts rather than structured pedagogical approaches.

Taken together, these outcomes highlight a common structural issue: education and training systems are more effective at delivering knowledge than at developing applied, integrated competencies required in dynamic labour markets.



8. Implications for Programme Development

The findings have direct implications for the design of future education and training programmes of the Flexi-Skilled project.

A key implication is the need to shift from content-based to competence-based learning models. Programmes should prioritise the application of knowledge through real or simulated tasks, ensuring that learners develop not only understanding but also the ability to act in complex and uncertain environments.

Digital competences should be integrated as a horizontal dimension across all learning pathways, rather than treated as standalone modules. This includes not only technical use of tools but also critical engagement with AI, data-driven decision-making, and digital problem-solving.

Similarly, entrepreneurial competences should be embedded across disciplines. This requires moving beyond theoretical business education towards practice-oriented approaches, where learners engage in project-based activities, solve real problems, and take responsibility for outcomes.

The integration of sustainability should also be reconsidered. Rather than being addressed primarily through theoretical content, it should be linked to operational decision-making, business processes, and measurable practices within different sectors.

Another important implication concerns the role of work-based learning (WBL). Internships, apprenticeships, and project-based collaborations with industry should be strengthened and extended in duration and quality. These experiences are essential for bridging the gap between education and employment.

Finally, programme development should incorporate flexibility and modularity, enabling learners and professionals to update their skills continuously. Digital platforms and blended learning formats can support this by enabling accessible, scalable, and personalised learning pathways.

9. Identified Training Areas

The table below translates the identified competence gaps into concrete training areas. Such an identification ensures alignment with digital, entrepreneurial, and sustainability priorities, as well as the need for practical application.

Training area	Core topics	Learning focus	Practical application
Applied AI and Digital Tools	AI basics, prompt design, automation tools, digital workflows	Understanding and critical use of AI in work contexts	Solving real tasks using AI tools (e.g. content, data, planning)
Data Literacy and Analysis	Data interpretation, dashboards, and decision-making with data	Turning data into insights for business decisions	Case-based data analysis and reporting
Cybersecurity and Digital Safety	Data protection, privacy, risk awareness	Safe and responsible digital practices	Simulated risk scenarios and response exercises
Digital Process Improvement	Process mapping, digital optimisation, workflow tools	Improving efficiency using digital solutions	Redesigning real or simulated business processes
Entrepreneurial Thinking and Initiative	Opportunity recognition, innovation, value creation	Developing a proactive and solution-oriented mindset	Working on real challenges or business ideas
Business Fundamentals in Practice	Markets, customers, financial basics, business models	Understanding how organisations create value	Case studies and mini business simulations
Communication and Teamwork	Professional communication, collaboration, and feedback	Working effectively in teams and organisations	Group-based projects and role-based tasks
Problem-Solving in Complex Contexts	Critical thinking, decision-making under uncertainty	Handling real-world complexity	Scenario-based problem-solving exercises
Sustainability in Practice	ESG basics, resource efficiency, circular economy	Applying sustainability in daily operations	Workplace-based sustainability challenges
Integrated Challenge-Based Learning	Cross-cutting (digital + business + sustainability)	Combining multiple competences in one task	Real-life or simulated interdisciplinary projects



10. Conclusion

The findings of this study provide a coherent and evidence-based understanding of current competence needs across different national contexts, while also revealing strong common patterns. Across all countries and data sources, digital competences emerge as the most critical priority. In particular, advanced skills related to artificial intelligence, data analysis, cybersecurity, and digital process optimisation are consistently identified as both highly important and insufficiently available. This confirms that digital transformation is not only shaping future skill needs, but is already a defining feature of the present labour market.

At the same time, the analysis highlights a persistent gap between theoretical knowledge and practical application. While education and training systems are generally effective at providing foundational knowledge, they are less successful at developing the ability to apply it in real-world contexts. This gap is evident in limited exposure to workplace environments, insufficient hands-on learning opportunities, and challenges in navigating complexity and uncertainty.

Business and entrepreneurial competencies also play a central role in employability. Skills related to initiative, decision-making, market understanding, and value creation are widely recognised as essential, yet they are not systematically integrated into training pathways. This limits learners' capacity to operate effectively in dynamic and evolving labour market conditions.

Sustainability, although acknowledged as an important long-term priority, remains less embedded in practice. It is often addressed at a conceptual level, with limited translation into operational competencies. This suggests a need to connect sustainability with concrete business processes and workplace applications.

Another important conclusion concerns transversal skills. Communication, teamwork, adaptability, and critical thinking are consistently highlighted as essential across all countries. However, their development is often implicit and poorly structured, thereby reducing their overall impact.

Despite differences in the scale of gaps across countries, the overall direction is clear. The challenge is not primarily to redefine what competences are needed, but to improve how they are developed, applied, and updated over time. In this context, the findings point to the need for a shift towards more practice-oriented, flexible, and integrated learning approaches. Strengthening the link between education and the labour market, embedding digital and entrepreneurial competences across all fields, and supporting continuous upskilling and reskilling are key priorities.



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Co-funded by
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Funded by the European Union. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

2025-1-NL01-KA220-VET-000359292