



Initiation

ERASMUS+ CAPACITY BUILDING IN HIGHER EDUCATION

INITIATION

digital traNsformatlon and green Transition of hlgher educATion
InstitutiONs

**Work Package 2: Task 2.3 Mapping skills and gathering insights
from stakeholders**

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Task information

Aim of the task

The aim of Task 2.3 Mapping skills and gathering insights from stakeholders is to conduct focus groups with 12 faculty and academic leaders, 10 business leaders/industry representatives and 10 learners, to identify their expectations, concerns, and innovative ideas for institutional- wide changes, curriculum and training development and define the high-demand digital and green competencies. The FG will be practice-oriented, as action research, including open-ended questions, scenarios discussions, and participatory activities. UNIC and UNSA will merge the results into a comparative Transnational Report.

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Disclaimer

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Contents

Abbreviations.....	5
Abstract.....	6
Executive Summary.....	7
1. Aim of the Task	8
2. Objective	8
3. Field Research Summary.....	8
3.1 Focus Groups Analysis.....	8
3.1.1 Implementation of the Focus Groups	8
3.2 Focus Group Results Analysis and Summary	9
3.3 Focus Group Conclusions	14



Abbreviations

Abbreviation	Meaning
AI	Artificial Intelligence
AL	Albania
AR	Augmented Reality
BA	Bosnia and Herzegovina
CBAM	Carbon Border Adjustment Mechanism
ESG	Environmental, Social, and Governance
EU	European Union
FHJ	FH Joanneum Gesellschaft mbH
HE / HEI(s)	Higher Education / Higher Education Institution(s)
IOT	Internet of Things
IT	Information Technology
QA	Quality Assurance
R&D	Research and Development
SME / SMEs	Small and Medium-sized Enterprise(s)
SUM	University of Mostar (Sveučilište u Mostaru)
UET	European University of Tirana
UKIM	Ss. Cyril and Methodius University in Skopje
UNIC	University of Nicosia
UNSA	University of Sarajevo (Univerzitet u Sarajevu)
UNYT	University of New York Tirana
VAT	Value Added Tax
VR	Virtual Reality
WP	Work Package
XR	Extended Reality



Abstract

This report summarises the field research findings from WP2 of the Erasmus+ INITIATION project, focusing on digital and green transitions in HEIs across BA and AL. Based on focus groups conducted with 138 participants—including academic leaders, faculty, students, and industry representatives—the document identifies key expectations, structural barriers, and high-demand competencies. Major challenges include inflexible regulatory frameworks, outdated curricula, infrastructure deficits, and over-reliance on unverified AI output. The report highlights the urgent need for experiential, interdisciplinary learning, campus “living laboratories”, responsible AI integration, and institutionalised university–industry partnerships to inform the upcoming Strategic Recommendations Roadmap.

Executive Summary

The present report contains an analysis and summary of the results and main findings from the field research activities conducted within the framework of WP2: State of the art and strategic recommendations roadmap. The field research activities were conducted in BA and AL through focus groups. The guidelines for the field research activities were prepared and provided by the partner organisations of UNIC and UNSA.

This report presents a summary of the focus groups conducted, including the key target groups' expectations, concerns and innovative ideas for institutional-wide changes, curriculum and training development and key digital and green competencies that will be in high demand. The report also discusses the findings of the stakeholders focus groups around their strategic vision and interdisciplinary integration, curriculum innovation and pedagogical excellence, digital transformation and sustainable infrastructure, research collaboration and community engagement and monitoring and sustainability planning. Finally, the report presents the main conclusions from the research activities and recommendations for the next step of WP2, the Strategic Recommendations Roadmap. The research results and findings presented in this report will constitute the theoretical framework for developing the Strategic Recommendations Roadmap in the next WP2 activity. The Strategic Recommendations Roadmap will outline the competencies for effective digital and green transition in HE and provide a set of action-oriented recommendations with examples for the research activities previously conducted.

1. Aim of the Task

This task aims to collect qualitative insights into the digital and green transition needs of HEIs across AL and BA. Each participating HEI in AL and BA will conduct action-research focus groups targeting 32 key stakeholders (12 faculty and academic leaders, 10 industry representatives, and 10 learners) to explore their expectations, concerns, and innovative ideas regarding institutional reform, curriculum modernisation, and high-demand competencies. The process is supported by five regional associated partners (OMEGA AL, DCCI, CEBIH, CESC, and MESCS), who will either participate directly or assist in recruiting relevant experts. Utilising open-ended questions, scenario discussions, and participatory activities, the findings from these focus groups will subsequently be merged by UNIC and UNSA into a comprehensive, comparative Transnational Report to guide strategic planning.

2. Objective

The primary objective of Task 2.3 is to conduct multi-stakeholder focus groups to identify key agents' expectations, concerns, and innovative ideas for institutional-wide changes, curriculum and training development and key digital and green competencies that will be in high demand. To achieve the above-mentioned objective, the project partners from BA and AL engaged in field research activities, specifically conducting focus groups with **faculty members** (professors, associate/assistant professors, lecturers) and **academic leaders** (deans of schools, heads of departments, directors of departments, etc.), **business leaders** and **industry representatives** and **learners**, at each HEI. The data from these activities was collected and analysed and a summary is presented in this report.

3. Field Research Summary

The field research of this project aimed to identify the main stakeholders' expectations, concerns, and innovative ideas for institutional-wide changes, curriculum and training development and define the high-demand digital and green competencies. To better understand and capture these aspects, it was necessary to gain the insights and thoughts of various stakeholders; faculty and academic leaders, business leaders and business preventatives, and leaners. For this purpose, focus groups were implemented in the BA and AL HEIs.

3.1 Focus Groups Analysis

3.1.1 Implementation of the Focus Groups

The focus groups were conducted with 138 participants in total:

- **University of Sarajevo** conducted two focus groups that took place in April and July 2026 respectively. In total 34 participants took part in the focus groups: 4 faculty members, 22 students and 8 industry representatives.
- **University of Mostar** conducted a focus group that took place face-to-face and online (hybrid) in May 2026, with 30 participants and two facilitators. The participants were 14 faculty members and academic leaders, 7 business leaders and 9 students.
- **European University of Tirana** conducted a face-to-face focus group in April 2026 with 33 academic staff, students, and industry partners and stakeholders.



- **University of New York Tirana** conducted two focus groups in April and July 2026 respectively, including a diverse group of participants such as university professors, business representatives, and students from different disciplines. In total, 41 participants attended the two focus groups.

The four HEIs invited the focus group participants to participate in this activity of the INITIATION project by sending out email invitations or signing letters of support for partnerships with various organisations.

3.2 Focus Group Results Analysis and Summary

Following is a summary presentation of the data collected from all of the focus groups conducted across all four HEIs and the views that the focus group participants expressed:

1. Strategic Vision & Institutional Transformation

Current Context & Expectations

- **Formal Ambitions vs Practical Implementation:** While HEIs formally incorporate digitalisation and environmental sustainability into their mission statements, a significant gap remains between strategic objectives and daily academic/administrative practice.
- **Transversal & Cross-Faculty Integration:** Stakeholders expect green transition and digital themes to be integrated transversally across disciplines (e.g., business, law, IT, architecture, engineering) through shared modules, cross-departmental academic/research teams, and interdisciplinary workshops, rather than remaining confined to isolated, standalone courses.
- **Early Education Pathways:** Students and academics emphasise that environmental awareness and digital literacy should not begin at university; instead, they must be cultivated continuously throughout primary and secondary education to build foundational habits before entering HE.

Key Challenges & Concerns

- **Institutional Inactivity & Regulatory Bureaucracy:** Complex administrative procedures, slow internal approval processes, and lengthy approval cycles by competent Ministries create major barrier that hinder swift curriculum updates and organisational reform.
- **Partial Digitalisation & Legal Dual Systems:** Digitalisation remains uneven. Even where e-platforms exist, regulatory and legal frameworks frequently mandate parallel paper-based procedures (such as physical assignment submissions, manual form fill-ins, and printed enrolment forms), creating redundant workloads instead of streamlining processes.
- **Resource & Financial Constraints:** High capital costs for digital infrastructure and low-carbon technology, limited institutional budgets, and SME financial constraints impede large-scale digital and green transitions.
- **Regulatory Roadblocks to Green Initiatives:** Practical sustainability initiatives, such as installing photovoltaic solar panels on campus (e.g., UNSA Faculty of Mechanical Engineering), face regulatory hurdles like Value Added Tax (VAT) restrictions on prosumer energy models. External economic pressures, such as the EU Carbon Border Adjustment Mechanism (CBAM)



and carbon taxation, are necessary to accelerate systemic changes that voluntary measures fail to achieve.

Suggested Actions & Innovative Ideas

- **Clear Policy Mandates & Leadership Accountability:** Shift from voluntary, incremental approaches to systemic transformation governed by firm regulatory frameworks, clear timelines, and defined management accountability.
- **Interdisciplinary Hubs & Pilot Infrastructure:** Create joint academic-industry innovation hubs, interdisciplinary research teams, and cross-faculty laboratories to break down departmental fragmentation.

2. Curriculum Innovation & Pedagogical Excellence

- **Shift to Experiential & Practical Learning:** Academics, students, and industry representatives strongly advocate moving away from overly theoretical lectures towards interactive, project-based, case-based, and experiential learning models.
- **In-Demand Digital Competencies:** High market demand exists for technical skills in core programming (Python, Java, JavaScript), software engineering, data analytics, AI, prompt engineering, cloud computing, cybersecurity, and domain-specific engineering software (e.g., MATLAB, ANSYS, CATIA).
- **In-Demand Green Competencies:** Industry sectors require knowledge connecting technology with environmental management, including circular economy principles, natural resource management (energy, water, agriculture), renewable energy systems (hydropower, solar, wind), energy efficiency, waste management, and ESG standards adapted to local contexts.
- **Soft Skills & Professional Mindsets:** Employers and academics stress that technical competencies must be paired with soft skills, including critical thinking, problem-solving, team collaboration, clear communication, adaptability, proactivity, entrepreneurial thinking, and resilience (viewing failure as a learning opportunity).

Key Challenges & Concerns

- **Outdated Curricula & Mismatched Content:** Existing study programmes are slow to reflect market trends. Basic programming or foundational courses often focus excessively on low-level concepts that no longer align with real-world applications.
- **Generational & Staff Capacity Gaps:** A portion of academic staff lacks updated knowledge regarding emerging AI tools, data analytics, and green economy principles, requiring continuous professional development to update teaching methodologies.
- **Over-reliance on AI:** Stakeholders worry that excessive reliance on AI platforms undermines students' critical thinking, independent analysis, writing skills, and core domain comprehension, while introducing risks regarding plagiarism and academic integrity.



Suggested Actions & Innovative Ideas

- **Responsible AI Integration:** Incorporate AI as a supporting tool for research, idea generation, explanation, and code drafting, while educating students on its limitations (such as AI “hallucinations”) and preserving independent human reasoning.
- **Modular Learning & Micro-Credentials:** Introduce modular curriculum structures, micro-credentials, short-term training programmes, guest lectures, and industry workshops to rapidly introduce emerging topics without waiting for lengthier formal accreditation cycles.
- **Balancing Core Foundations with Specialised Tools:** Maintain strong core engineering and analytical fundamentals while embedding practical software training early in the study cycle (first and second years).

3. Digital Transformation & Sustainable Infrastructure**Current Context & Expectations**

- **Immersive Learning & Visual Simulation:** High interest in introducing VR, AR, XR and digital simulations to visualise complex engineering problems and simulate industrial production processes.
- **Campus as a “Living Laboratory”:** Physical university infrastructure should act as a demonstrative learning environment showcasing practical green and digital tools (e.g., photovoltaic energy generation, smart classrooms, timed lighting, and accessible recycling/waste separation stations).

Key Challenges & Concerns

- **Infrastructure Deficits & Tool Obsolescence:** Shortcomings in hardware, system interoperability, data management, and demonstrative laboratories hinder progress, while rapid equipment obsolescence leaves hardware outdated quickly.
- **Digital Literacy Divide & Generational Differences:** Three distinct groups exist:
 1. those educated without AI with low digital skills;
 2. those educated without AI who developed strong digital skills and retain critical evaluation abilities; and
 3. younger generations who are highly fluent with digital tools but tend to rely heavily on AI without critically verifying the output.
- **Cybersecurity Vulnerabilities & Environmental Footprint:** Expanding remote access, IoT systems, and smart metering increases exposure to cyberattacks, while large data centres, cloud computing, and AI processing raise institutional energy consumption.
- **Hybrid/Online Learning Disengagement:** Online and hybrid modes present challenges regarding reduced student interaction, passive participation, and concentration difficulties.

Suggested Actions & Innovative Ideas

- **System Optimisation & Process Streamlining:** Rather than continually adding redundant software platforms, existing digital infrastructure should be optimised and interoperable to eliminate paper loops and lower energy/resource usage.

- **Functional Green Demonstrators:** Establish functional laboratories showcasing energy-efficient building materials, architectural design, and renewable energy technologies.
- **Continuous Staff Training:** Provide hands-on professional development for academic and administrative staff in digital pedagogy, modern engineering software, cybersecurity, and green technologies.

4. Research, Collaboration & Community Engagement

Current Context & Expectations

- **Structured University–Industry Partnerships:** Transition from ad-hoc, informal, or project-dependent contacts to long-term, institutionalised co-creation involving curriculum co-design, joint research, guest lectures, and advisory boards.
- **Regional & Industry Problem-Solving:** HEIs should actively partner with local businesses, regional industries, and public authorities to tackle local technological, environmental, and economic challenges.

Key Challenges & Concerns

- **Weak Regional R&D Capacity:** Many local and regional companies lack internal R&D departments, restricting the scope of collaboration to operational tasks rather than deep, joint research.
- **Resource Constraints on Employers:** Industry partners—particularly SMEs—face limitations in financial resources, staff time, and personnel required to supervise interns or participate in curriculum review.
- **Informal Thesis & Internship Frameworks:** Student internships, practical assignments, and Master's thesis topics frequently rely on individual, informal arrangements rather than systematic institutional frameworks.
- **Risk of Economic Stagnation:** Lack of investment in R&D risks leaving regional economies focused primarily on low-value production or services without innovation potential.

Suggested Actions & Innovative Ideas

- **Industrial VR/AR Simulations:** Collaborate with local enterprises to build VR/AR/XR simulations of real factory production lines, enabling students to experience industrial environments when physical access is restricted.
- **Institutionalised Problem Portfolios:** Establish formal mechanisms where local businesses submit real-world operational challenges to serve as Master's theses, capstone projects, or hackathons.
- **Proactive University Leadership:** HEIs should actively present their research capacities and expertise to local industry rather than waiting passively for business demand.
- **Engagement Incentives:** Offer incentives, formal recognition, targeted funding, or fiscal benefits to encourage enterprise participation in HE.



5. Monitoring & Sustainability Planning

Current Context & Expectations

- **Institutional Governance & ESG Metrics:** Systemic transformation requires embedding clear reporting frameworks, sustainability indicators, QA standards, and ESG guidelines across university operations.
- **Strategic Policy Alignment:** Align university strategic planning directly with national policies, European directives, and international initiatives (such as the EU Twin Transition and CBAM) to ensure financial stability and compliance.

Key Challenges & Concerns

- **Inconsistent Standards & Metrics:** Monitoring of green and digital progress remains fragmented across institutions due to the absence of standardised evaluation criteria.
- **Project-Based Short-termism:** High reliance on short-term European or external project grants creates a risk that digital and green initiatives end when project funding expires.
- **Mismatch in Time Horizons:** A structural disconnect exists between the extended time required for academic research, industry's demand for rapid commercial solutions, and younger generations' expectation for immediate results.
- **Fear of Technological Transition:** Uncertainty surrounding AI automation and job displacement creates anxiety among staff and student.

Suggested Actions & Innovative Ideas

- **Embedded Funding & Governance:** Transition from temporary project-based funding to sustainable, embedded institutional budgets and dedicated governance structures.
- **QA for External Engagement:** Establish standardised guidelines, quality criteria, and evaluation frameworks for internships, industry projects, and guest lectures to guarantee academic rigor.
- **Focus on Adaptability & Engineering Judgment:** Address job transition fears by training students in adaptability, continuous learning, and core problem-solving judgment, pointing to historical precedents (e.g., AutoCAD) where technological evolution transformed workflows rather than eliminating professions.

6. Any Other Comments

Student-Centred Engagement & Communication

- **Engaging Content & Formats:** To capture student interest, educational and sustainability communications should utilise visually engaging media (illustrations, 3D visual representations, trend topics) and interactive events like hackathons, while involving young people directly in designing educational formats.

Hybrid Learning & Equity

- **Balancing Digital & Face-to-Face Formats:** Addressing engagement drop-offs in online learning requires combining self-paced online materials with interactive face-to-face workshops, practical lab work, and group exercises.

Inclusive Culture & Value Formation

- **Shared Ownership:** Organisational transformation cannot be imposed solely top-down; it requires building a culture of participation, open communication, and shared ownership among academic staff, administrative personnel, students, and external stakeholders.
- **Values and Early Education:** HE should be viewed not merely as a technical skill transfer process, but as a formative experience that instils long-term societal values, environmental responsibility, and ethical decision-making.

3.3 Focus Group Conclusions

The focus groups highlighted several key conclusions regarding the digital transformation and green transition of HEIs in AL and BA. Despite formal institutional commitments and national policy agendas prioritising digitalisation and environmental sustainability, significant challenges remain, including institutional constraints, complex regulatory frameworks, limited financial resources, and a gap between theoretical academic preparation and labour market expectations. Main needs identified include transitioning towards practical, experiential, and interdisciplinary learning; upgrading digital and sustainable campus infrastructure; establishing structured, long-term university–industry partnerships; and providing continuous professional development for academic and administrative staff in emerging technologies and green principles. Common challenges across institutions include bureaucratic curriculum approval processes, partial digitalisation hindered by parallel paper-based legal requirements, outdated hardware, cybersecurity vulnerabilities, and student over-reliance on AI tools without sufficient critical evaluation.

Addressing these needs and challenges is crucial for HEIs in AL and BA to effectively drive the twin transition, modernise educational delivery, enhance graduate employability, and align academic outcomes with regional economic and environmental priorities.

Key Recommendations

- **Systemic Governance & Clear Mandates:** Establish coherent institutional digital and green strategies with clear guidelines, defined implementation timelines, and leadership accountability, moving away from voluntary or short-term project-dependent initiatives towards embedded, long-term policy structures.
- **Curriculum Modernisation & Flexible Learning:** Accelerate curriculum reform by adopting modular course structures, micro-credentials, and interdisciplinary projects that integrate advanced digital competencies (e.g., data analytics, AI, programming, domain-specific engineering software) with sustainability concepts (e.g., circular economy, energy efficiency, ESG principles).

- **Responsible AI & Critical Thinking:** Integrate AI into study programmes as supporting research and learning tool while establishing clear guidelines, ethical standards, and pedagogical approaches that preserve independent reasoning, critical analysis, and academic integrity.
- **Infrastructure Upgrades & Living Laboratories:** Address infrastructure and equipment deficits by upgrading digital platforms, ensuring system interoperability, and utilising the campus environment (e.g., photovoltaic energy installations, smart classrooms, recycling systems) as functional demonstrators for hands-on learning.
- **Structured University–Industry Collaboration:** Institutionalise partnerships with local and regional businesses through curriculum co-design, joint laboratories, industrial VR/AR simulations, and formal portfolios of real-world industry challenges for student theses and hackathons.
- **Continuous Staff Capacity Building:** Provide ongoing, practical training for academic and administrative staff to build digital fluency, master updated pedagogical methodologies, and effectively teach green transition concepts.