Eco-Digital Pathways for VET (EDP-VET)

Empowering VET Teachers and Students for the Twin Transition

Project No. 2024-2-ES01-KA210-VET-000280277

Executive Summary

The EDP-VET International Hackathon, branded as GreenTech Fusion, was held in Penafiel, Portugal, from 20 to 22 November 2025. The three-day event translated the project's Twin Transition objectives into an active, collaborative learning experience in which vocational education and training learners, teachers and partner representatives explored the environmental impact of digital technologies and developed practical awareness-raising concepts for more sustainable digital behaviour.

The programme combined an entrepreneurship and sustainability conference, intercultural ice-breaking, international team formation, Green Design Thinking, rapid idea pitches, mentored group work, final presentations, jury deliberation, certificates, awards and a cultural visit. The event materials organised the work around five thematic challenges: Digital Green School, Invisible Electronic Waste, My Sustainable Job, Digital with Consciousness and Sustainable Communities.

The participant lists contain 32 registered participants on each of the three event days, representing five organisations from Portugal, Spain and Romania. The hackathon strengthened technical awareness, creativity, communication, teamwork, problem-solving and intercultural cooperation while generating ideas that can be adapted into local EDP-VET awareness campaigns.

Overall assessment

The event was strongly aligned with the approved EDP-VET activity: it used non-formal and creative methodologies, placed learners in European collaborative teams, addressed real environmental challenges and concluded with public presentation and evaluation of the developed work.

Event at a Glance

3 HACKATHON DAYS	**32** REGISTERED PARTICIPANTS	**3** COUNTRIES REPRESENTED
5 ORGANISATIONS	**5** THEMATIC CHALLENGES	**1** FINAL PITCH & AWARD SESSION

1. Project Context and Event Objectives

EDP-VET is an Erasmus+ small-scale partnership in vocational education and training focused on empowering VET teachers, trainers and learners to participate actively in the green and digital transitions. The project promotes sustainable digital practices, greater awareness of the environmental impact of technology, circular-economy thinking and the responsible use of digital tools, including artificial intelligence.

Within this framework, the hackathon was designed as a practical training activity in which participants could move from knowledge to action. Rather than treating sustainability as an abstract topic, the event challenged international teams to define a problem, generate ideas, assess feasibility and communicate a solution with potential relevance to schools, companies or local communities.

Specific objectives

- Increase participants' understanding of sustainable digital practices and the environmental impact of digital technologies.
- Apply active, creative and non-formal learning methods to real environmental and social challenges.
- Promote collaboration in mixed European teams and strengthen communication in an intercultural setting.
- Develop feasible awareness-raising concepts that can support follow-up campaigns in partner countries.
- Strengthen transversal competences, including creativity, critical thinking, teamwork, leadership, communication and problem-solving.
- Connect vocational education with entrepreneurship, innovation, green skills and future labour-market needs.

Participants and organisations

The daily participant lists recorded the same 32 registered names across the three dates. For data-protection reasons, this report presents aggregated participation rather than personal contact details.

Country	Organisation	Registered participants
Spain	IES Dr. Lluís Simarro	8
Spain	IES Abastos	6
Spain	Asociación Empresarial L'Alqueria Projectes Educatius (ALPE)	4
Portugal	Associação Empresarial de Penafiel (AEP)	9
Romania	Inspectoratul Școlar Județean Gorj (ISJ Gorj)	5
TOTAL	Five organisations	32

2. Methodology and Challenge Framework

The hackathon methodology was open, dynamic, collaborative and learner-centred. Participants were expected to combine sustainability knowledge with digital creativity and to work through a rapid innovation cycle: understanding the challenge, generating ideas, choosing a viable direction, developing a communication concept or prototype, testing the clarity of the idea through short pitches and presenting the final work to a judging panel.

Core methodological elements

- Intercultural ice-breaking and team-building to create trust across languages and organisations.
- Green Design Thinking to frame problems from the perspective of users, institutions and communities.
- International teamwork with teacher and mentor support.
- Rapid pitching to encourage concise communication and iterative improvement.
- Challenge-based learning connected to authentic school, professional and community contexts.
- Jury assessment using common criteria and a final award and certification session.

The five challenge areas

No.	Challenge	Guiding focus
1	Digital Green School	Use digital technologies to make schools more sustainable, efficient and environmentally responsible.
2	Invisible Electronic Waste	Reduce, reuse, repair and recycle electronic equipment in schools, companies and communities.
3	My Sustainable Job	Help VET learners discover and prepare for the green and digital professions of the future.
4	Digital with Consciousness	Reduce the environmental impact of everyday internet, social-media and AI use.
5	Sustainable Communities	Use digital tools to encourage sustainable behaviour, cooperation and local participation.

Common assessment criteria

Criterion	What was assessed
Creativity and innovation	Originality and quality of the proposed approach.
Sustainability and impact	Potential environmental and social contribution.
Feasibility and applicability	Realistic implementation in a school, company or community.
Teamwork and communication	Cooperation, clarity, structure and effectiveness of the final pitch.

3. Day 1 - Inspiration, Connection and Launch

Thursday, 20 November 2025

The first day established the purpose, tone and collaborative structure of the event. Following the welcome session, participants attended the conference “Pen X-Lab - An entrepreneurial strategy for sustainability”, delivered by Durval Ferreira. The intervention connected sustainability with entrepreneurial action and helped frame the hackathon as a process of transforming environmental challenges into practical opportunities.

The “Europe in Motion” ice-breaker supported intercultural interaction and encouraged participants to communicate beyond their usual national or institutional groups. During the afternoon, the organisers formed the working teams, assigned the thematic challenges and launched the GreenTech Fusion competition. The combination of social connection, thematic inspiration and rapid transition into teamwork created a clear bridge between the project’s European dimension and the practical task ahead.

Key activities

- Welcome and presentation of the event framework.
- Conference on entrepreneurial approaches to sustainability.
- Intercultural ice-breaking: “Europe in Motion”.
- Formation of collaborative teams.
- Assignment of the five thematic challenges.
- Initial interpretation of the problem and launch of the hackathon work.

4. Day 2 - Ideation, Development and Mentoring

The second day concentrated on the creative and collaborative production process. The Green Design Thinking session introduced a structured approach to understanding the assigned challenge, identifying the target audience and considering the desired behavioural change. Each team then presented its initial direction in a short two-minute pitch. This rapid sharing stage allowed participants and mentors to identify unclear assumptions and improve the focus of the proposed solution before the main development period.

During the morning and afternoon work sessions, teams developed creative ideas for awareness-raising campaigns and sustainable digital solutions. Depending on the challenge, possible formats included applications, digital maps, monitoring systems, educational games, career-guidance tools, repair and reuse initiatives, digital-footprint calculators, podcasts, videos and multimedia campaigns. Teachers and partner representatives provided guidance while preserving student ownership of the ideas.

Learning process

1. Define the environmental or social problem in concrete terms.
2. Identify the intended users or audience.
3. Generate and compare alternative solutions.
4. Select a feasible concept with measurable potential impact.
5. Develop the message, digital component and implementation logic.
6. Prepare a clear final pitch supported by visual or written materials.

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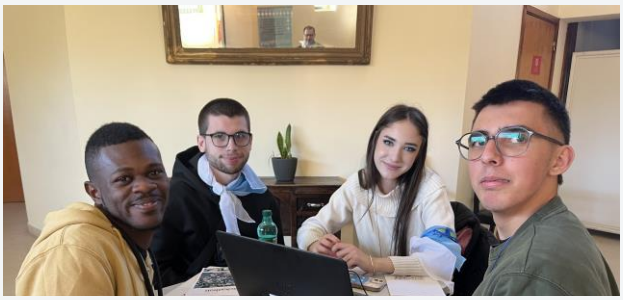


5. Day 3 - Presentation, Evaluation and Celebration

The final day brought the development process to a public conclusion. Teams presented their final works to the participants and judging panel, explaining the problem addressed, the proposed solution, its expected sustainability contribution and how it could be implemented. The presentation stage required teams to convert several hours of discussion and development into a concise, coherent and persuasive pitch.

After the presentations, the judging panel deliberated and selected the best work or works. The programme continued with the award ceremony, the delivery of certificates and an evaluation session. A cultural visit to the city of Penafiel completed the experience, reinforcing the social and European dimension of the mobility and providing an informal setting for reflection and relationship-building.

Final-stage evidence

- Final presentation materials or prototypes from each team.
- Jury assessment sheets and the final ranking or decision record.
- Award and certificate records.
- Participant evaluation forms or digital feedback.
- Photographic documentation of presentations, awards and the cultural visit.

6. Results and Learning Outcomes

The principal tangible result was the development and presentation of team-based concepts linked to the five thematic challenges. These concepts were designed not as isolated classroom exercises, but as starting points for awareness campaigns and practical actions that can be adapted by the partner organisations in their own educational and community settings.

Tangible results

- Five challenge briefs used as a common framework for innovation.
- International team concepts addressing digital sustainability, circularity, employability and community action.
- Short initial pitches and final presentations that documented the evolution of the ideas.
- A jury-based selection process and recognition of the strongest work.
- A reusable evidence base for the subsequent EDP-VET awareness campaigns and project dissemination.

Learning outcomes for VET learners

- Improved understanding of the environmental footprint of devices, data, internet use and artificial intelligence.
- Greater awareness of repair, reuse, recycling and circular-economy approaches.
- Ability to connect green and digital skills with future professional opportunities.
- Experience in problem framing, ideation, feasibility analysis and solution communication.
- Stronger teamwork, leadership, communication, creativity, critical thinking and foreign-language confidence.
- Direct experience of non-formal learning and international peer collaboration.

Learning outcomes for teachers and partner staff

- Practical experience with challenge-based, team-teaching and design-thinking methods.
- New examples and materials for integrating sustainability into VET teaching.
- Expanded professional contacts across educational, public and entrepreneurial organisations.
- A stronger basis for mentoring student-led awareness and dissemination activities.

Awards and recognition - completion fields

Field	Information to be completed
Winning project / challenge	[Insert confirmed project title and challenge]
Winning team members	[Insert names or team identifier]
Jury members	[Insert confirmed names and organisations]
Special mentions	[Insert, if applicable]

7. European Added Value, Inclusion and Sustainability

European added value

The event created a genuinely European learning environment by bringing together participants from Portugal, Spain and Romania and by organising the work around mixed institutional and cultural perspectives. Participants had to negotiate meanings, communicate in a shared working language, compare educational realities and make collective decisions under time constraints. This added a dimension that could not be reproduced through a purely local classroom activity.

- Exchange of different educational and professional perspectives.
- Development of linguistic confidence and intercultural communication.
- Shared ownership of solutions relevant across several European contexts.
- Creation of relationships that can support later dissemination and project activities.
- Practical experience of active European citizenship and common sustainability goals.

Inclusion and equal participation

The approved project framework prioritised learners at risk of social exclusion and promoted gender balance, academic engagement and personal motivation in the selection process. During the hackathon, collaborative team structures and non-formal methodologies helped create several ways to contribute: research, visual design, speaking, organisation, technical development and idea generation. Future editions should continue to monitor speaking time, role distribution, accessibility needs and balanced participation within each team.

Sustainability of the event approach

The programme's content placed environmental responsibility at the centre of every challenge. Operationally, the agenda incorporated rail travel between Porto and Penafiel and used local venues for meals and the cultural programme. No formal carbon calculation was included in the available evidence; therefore, future events would benefit from recording transport modes, material use, catering choices and waste-generation indicators to support a more measurable green-event assessment.

Good practice for future editions

Add a one-page "Green Event Log" covering participant travel, printing, reusable materials, catering, waste separation and digital-storage practices. This would connect event organisation directly with the sustainability principles taught during the hackathon.

8. Dissemination, Follow-up and Recommendations

Planned follow-up

The hackathon was designed to feed directly into the EDP-VET awareness campaigns. The most relevant team ideas can be adapted into local, regional and national actions led by learners and supported by teachers, partner organisations, associated schools, entrepreneurs, public bodies and civil-society organisations.

- Publish the challenge materials, selected outputs, photos and short event summary on the project website.
- Transform each team concept into a concise implementation sheet with target audience, key message, activities, resources, timetable and indicators.
- Present the ideas at national awareness events and within partner VET institutions.
- Use participant-created media in social networks, school communication channels and stakeholder events.
- Archive the evidence package for the Erasmus+ Results Platform and final project reporting.
- Encourage teams to test at least one small-scale action locally and document the response of the target audience.

Recommendations for strengthening the evidence base

Recommendation	Practical action
Confirm and record awards	Add the winning project, team composition, jury membership and final score or justification.
Consolidate evaluation data	Summarise participant feedback by relevance, learning, organisation, inclusion and European added value.
Document outputs consistently	Use a common one-page template for every team's problem, solution, target group, impact and feasibility.
Add captions and consent records	Ensure every published photo has a caption, credit and verified image-use permission.
Measure sustainability	Record transport, printing, waste and catering indicators for future comparison.
Track post-event action	Record which concepts were reused in awareness campaigns and what audience they reached.

9. Conclusion

The GreenTech Fusion International Hackathon successfully provided the active and creative learning environment envisaged by EDP-VET. Over three days, participants moved from inspiration and intercultural connection to challenge definition, collaborative development, public presentation and recognition. The programme linked the Twin Transition to concrete issues that VET learners encounter in schools, workplaces and communities: energy and resource use, electronic waste, responsible digital behaviour, emerging green careers and community participation.

Its most important contribution was not a single technological product, but the creation of a learning process in which participants had to combine environmental responsibility, digital imagination, feasibility and communication. The experience also strengthened the European character of the project by turning diversity of language, organisation and national context into a resource for collaborative problem-solving.

The next step is to preserve and extend this value. By completing the photo record, confirming the award information, consolidating participant feedback and converting the team ideas into local awareness actions, the partnership can transform the hackathon from a three-day event into a sustained project result with relevance beyond the direct participants.

Final assessment

The activity was relevant, coherent with the EDP-VET objectives and methodologically appropriate for VET learners. The strongest opportunity for improvement lies in systematic documentation of team outputs, jury results, participant feedback and measurable follow-up impact.

Funding acknowledgement

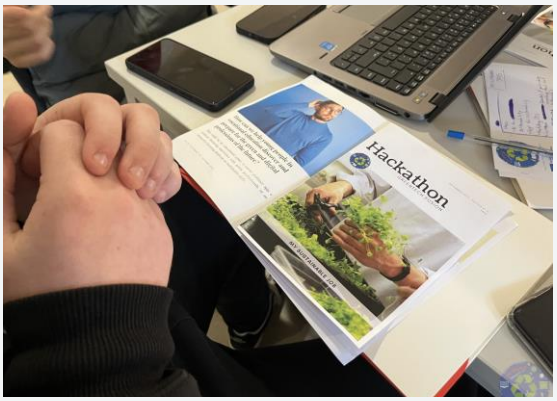
Co-funded by the European Union. Views and opinions expressed are, however, those of the author(s) only and do not necessarily reflect those of the European Union or the Spanish Service for the Internationalisation of Education (SEPIE). Neither the European Union nor the granting authority can be held responsible for them.

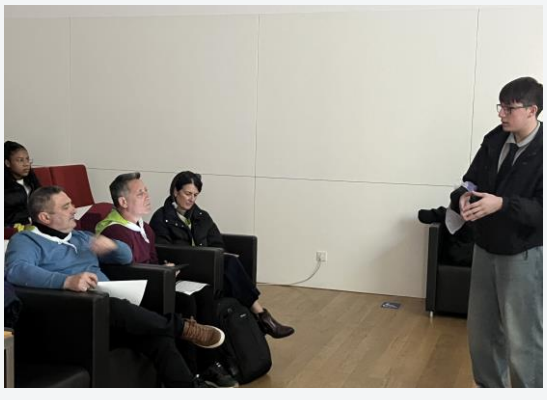
Report completion checklist

	Item
☐	Insert event photographs and final captions.
☐	Confirm winning team, jury and award details.
☐	Attach or reference the final team outputs.
☐	Add consolidated participant evaluation results.
☐	Verify image consent and photo credits before publication.
☐	Approve the final report through the project partnership.

10. Photo Gallery

Replace the placeholders below with high-resolution photographs. Keep the images in chronological order and add a short caption identifying the activity, date and relevant organisations or speakers.





Annex 1 - Agenda Summary

Date	Activity	Purpose
20 Nov.	Welcome and opening	Introduction to the event and participants.
20 Nov.	Pen X-Lab conference	Entrepreneurial strategy for sustainability.
20 Nov.	Europe in Motion	Intercultural ice-breaking activity.
20 Nov.	Team formation and challenge assignment	Creation of working groups and launch of the competition.
21 Nov.	Green Design Thinking	Problem framing and structured ideation.
21 Nov.	Two-minute initial pitches	Rapid presentation and refinement of initial ideas.
21 Nov.	Hackathon work sessions	Development of creative awareness-raising ideas and sustainable digital solutions.
22 Nov.	Final work presentations	Team pitches to participants and judging panel.
22 Nov.	Jury deliberation and awards	Selection, recognition and award ceremony.
22 Nov.	Certificates and evaluation	Learning recognition and participant feedback.
22 Nov.	Cultural visit	Closing social and cultural activity in Penafiel.

Supporting documentation reviewed

- EDP-VET Hackathon official agenda, 20-22 November 2025.
- Participant attendance lists for 20, 21 and 22 November 2025.
- GreenTech Fusion Hackathon presentation and five thematic challenge briefs.
- EDP-VET Erasmus+ application, including the activity description, objectives, target groups and expected results.
- Event poster and project branding materials.