2024-1-TR01-KA220-SCH-000255119
ECOAI EDUNETWORK INITIATIVE (EAIEN)

Where Green Meets Digital

Experience Sharing Book

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Funded by the European Union

Where Green Meets Digital

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PROJECT

EcoAI EduNetwork Initiative (EAIEN)
Erasmus+ KA220-SCH Cooperation Partnership in School Education
Project no. 2024-1-TR01-KA220-SCH-000255119
Coordinated by Anadolu University, Türkiye
December 2024 – November 2026

PUBLICATION DATE

November 2026



Funded by the European Union

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Contents

01 Foreword 5

1.1 Message from the Project Coordinator 5
1.2 Purpose and Scope of the Experience Sharing Book 7

02 Introduction to the EAIEN Project 11

Ana-Maria Dascalu-Romitan, Merve Diyarbakırlı

2.1 Project Background: What EAIEN Stands for and Its Vision 11
2.2 Scope and Relevance of the Project in the Context of European Education 12
2.3 Consortium and Partner Profiles 14

03 Educational and Conceptual Framework 19

Halil Düzenli, Yavuz Tuna

3.1 EcoAI: Sustainability and Artificial Intelligence in Education 20
3.2 Pedagogical Approaches Adopted 23
3.3 Alignment with European Education and Green Policies 26

04 Journey of the Project 30

Ali Akarsu, Mihaela Tarce

4.1 Project Launch and Early Stages 30
4.2 Coordination and Communication 33

05 Reflections, Teaching and Learning Experiences 38

Funda Yoldaş, Ioana Lucia Patrauta, Liviu Claiciu

5.1 Reflections from Educators 39
5.2 Student Engagement and Learning Outcomes 43
5.3 Cross-Partner Experience Sharing 47

06 Outputs and Innovations 50

Olivier Heidmann, Christina Taka

6.1 Open Educational Resources (OER) Platform 51
6.2 The Teacher's Handbook 53
6.3 Case Studies of Implementation 56
6.4 Multilingual and Cultural Dimensions 58

07 Visibility, Dissemination and Sustainability 61

Hariklia Tsalapata, Christina Taka

7.1 Dissemination Strategies 62
7.2 Sustainability of the EcoAI EduNetwork 68

08 Conclusions and Future Perspectives 76
Merve Diyarbakırlı, Ana-Maria Dascalu-Romitan
8.1 Overall Project Reflections or What the EAIEN Journey Has Taught Us ... 77
8.2 From Project Enthusiasm to Systemic Practice ... 79
8.3 Green Skills in an Age of Intelligent Machines ... 81
8.4 Sustaining the Network Beyond the Funding Period ... 83
8.5 Final Reflections, Future Collaborations, Networking and Development Opportunities ... 85

APPENDICES

A EAIEN at a Glance 88

B Online Resources and Social Media 90

C Glossary of Terms and Abbreviations 91

BACK MATTER

References 94



CHAPTER 1

Foreword

1.1 Message from the Project Coordinator

It is with great pride and a deep sense of gratitude that we present this experience sharing book, which is a collective reflection on what has been one of the most rewarding collaborative journeys of our consortium.

The EcoAI EduNetwork Initiative (EAIEN) began as an idea rooted in a simple but urgent conviction: that the twin challenges of environmental sustainability and digital transformation cannot be addressed in isolation, and that education holds the key to overcoming them. When we first conceived this project in early 2024, we asked ourselves a fundamental question: *How can we equip the next generation with both the green skills to protect our planet and the AI literacy to navigate an increasingly digital world?* The answer, we believed, lay not in top-down instruction but in a participatory, cross-border model that would place students and teachers at the centre of the learning process as creators, as ambassadors, and as agents of change.

Over the course of twenty-four months, what began as a partnership between five institutions across three countries evolved into something far richer than any project proposal could have anticipated. Our consortium: *Anadolu University, Özel Çağdaş Fen Lisesi, Liceul Tehnologic „Ștefan Hell" Sântana, Universitatea Politehnica Timișoara, and Future Learning* brought together two universities, two high schools, and an education technology company, each contributing distinct strengths that proved genuinely complementary. The universities provided academic rigour and pedagogical frameworks; the schools brought the authentic voices and energy of students and teachers; and Future Learning delivered the technological expertise to translate our vision into accessible digital platforms and resources.

The results speak for themselves, but more importantly, they speak through the people who made them possible. Through our Learning, Teaching and Training Activities, we empowered educators with new competencies in green skills pedagogy and AI integration. Through our Green Skills Ambassador Programme, we watched students transform from passive learners into confident peer trainers who could stand before classrooms in another country and teach their peers about sustainability in a language that was not their own, in a culture they were discovering for the first time. Through our two cross-border mobility activities in Eskişehir (Türkiye) and Sântana (Romania), we saw 42 student ambassadors and 10 teacher ambassadors collaborate across borders, reaching over 260 local students through peer training sessions grounded in real observation and authentic learning. Through our OER Platform, we ensured that the materials created by these students and teachers would not remain locked in a project folder but would be freely available to educators around the world.

Although the numbers are an impressive metric, they only tell part of the story. What truly defined this project were the moments that no metric can capture: a Turkish student cycling through Sântana for the first time, marvelling at how an entire community had organised itself around sustainable mobility. A Romanian student standing before a class in Eskişehir, explaining waste recycling practices to peers who listened with genuine curiosity. Teachers from two countries sitting together over coffee, sharing not just best practices but genuine friendship. These moments of connection, of surprise, of mutual respect are the real legacy of EAIEN.

This book is our attempt to preserve and share those moments. It is not a formal report (we have plenty of those); rather, it is a living document that captures the human experience behind the project, the insights of educators who integrated green skills into their classrooms for the first time, the reflections of students who discovered that environmental responsibility knows no borders, and the practical lessons learned from building an international educational partnership from the ground up.

We would like to express our deepest gratitude to every partner institution, every teacher, every student, and every member of our project team who contributed to making EAIEN not just a successful project but a meaningful one. We are especially grateful to the European Commission and the Turkish National Agency for their trust in funding this initiative, and to the countless individuals in Eskişehir, Sântana, Timișoara, and Volos who opened their doors to our shared vision. The project may have a formal end date, but the network we have built, the resources we have created, and the friendships we have forged will endure. We hope this book inspires other educators, institutions, and policymakers to take up the challenge of integrating green skills and AI literacy into their own educational contexts and to do so with the same spirit of collaboration, curiosity, and care that defined the EcoAI EduNetwork Initiative.

1.2 Purpose and Scope of the Experience Sharing Book

1.2.1 Why This Book Exists

The EcoAI EduNetwork Initiative (EAIEN) is an Erasmus+ KA220-SCH Cooperation Partnership in School Education (Project no. 2024-1-TR01-KA220-SCH-000255119), funded by the European Commission and coordinated by Anadolu University, Türkiye. Running from December 2024 to November 2026, the project brings together five partner institutions from three countries (Türkiye, Romania, and Greece), with the shared mission of integrating green skills education and AI literacy into secondary school curricula through cross-border collaboration, peer learning, and open educational resources. This Experience Sharing Book is one of the key deliverables of the project (produced under Work Package 3, Green Skills Crossing Borders) as a comprehensive resource that captures the full arc of the EAIEN journey from its conceptual foundations and partnership formation through its implementation, outputs, and lasting impact. Unlike the project's formal deliverables and task completion reports, which document activities and outcomes in institutional language, this book is designed to tell the human story of the project: how educators and students across three countries experienced, shaped, and were shaped by their participation in EAIEN.

1.2.2 Who This Book Is For

This book has been written with multiple audiences in mind. For educators and school leaders, it offers practical insights into how green skills and AI literacy can be integrated into secondary education through peer training, ambassador programmes, and observation-based learning. For project managers and Erasmus+ practitioners, it provides a transparent account of how a five-partner, three-country KA220-SCH

partnership was coordinated, including the challenges encountered and the solutions developed. For policymakers and educational authorities, it presents evidence of the impact that cross-border sustainability education can have on students, teachers, and school communities. And for students, both those who participated in EAIEN and those who may encounter this book in the future, it serves as a testament to what young people can achieve when given the opportunity, the trust, and the support to become agents of change in their own communities and beyond. The book is also intended for teachers and researchers interested in innovative approaches to sustainability education, artificial intelligence, and international collaboration. Beyond documenting the EAIEN project, it can serve as a valuable reference and a model of good practice for the design, implementation, and structure of future Erasmus+ initiatives, offering a practical framework and adaptable content for similar educational projects.

1.2.3 How This Book Was Produced

This book is the product of a genuinely collaborative process. Content was contributed by all five partner institutions, drawing on project documentation, mobility reports, survey data, meeting minutes, and most importantly the firsthand reflections of the teachers and students who participated in EAIEN activities. The editorial coordination was led by Universitatea Politehnica Timișoara with support from all partners in drafting, reviewing, and providing visual documentation.

1.2.4 A Note on Terminology

Throughout this book, the terms “green skills”, “sustainability education” and “environmental awareness” are used in line with European frameworks, particularly the GreenComp competence framework. “AI literacy” refers broadly to the ability to understand, use, and critically evaluate artificial intelligence tools in educational and everyday contexts. A full glossary of terms is provided in the Appendices.

HOW TO USE THIS BOOK

Interactive Elements in This Book

This is not a book to read only from cover to cover. Throughout the chapters you will find short boxes that invite you to pause and connect the EAIEN experience with your own work:

1. Think About It: a reflective question to consider while you read.
2. Discuss with Colleagues: a prompt for a staff meeting, a teacher training session or a project team.
3. Try This in Your Classroom: a small activity you can test with students next week.
4. Your Turn and Self-Check: a practical task or checklist at the end of a chapter, with space for your own notes.

There are no right answers. The boxes are designed to help you adapt what the partnership did into your own contexts.

1.2.5 An Invitation to the Reader

We invite you to read this book not as a static record of a completed project, but as a living resource: one that we hope will inspire adaptation, replication, and further innovation. The challenges of climate change, digital transformation, and educational equity are too large for any single project or partnership to solve. But we believe that initiatives like EAIEN demonstrate what is possible when diverse institutions come together with a shared purpose, a willingness to learn from one another, and a genuine commitment to the students and communities they serve. Every page of this book reflects the work of real people: teachers who stepped outside their comfort zones, students who discovered new passions, and partners who built trust across languages, cultures, and time zones. We hope their stories resonate with yours.

THINK ABOUT IT

Before You Begin

1. What do “green skills” mean in your school or organisation today? Where do they already appear in the curriculum, and where are they missing?
2. Where, if anywhere, does artificial intelligence already appear in your teaching or in your students’ learning?
3. Write down one question you hope this book will help you answer. Return to it when you reach Chapter 8.

My question:



CHAPTER 2

Introduction to the EAIEN Project

Ana-Maria Dascalu-Romitan, Merve Diyarbakırlı

2.1 Project Background: What EAIEN Stands for and Its Vision

The EcoAI EduNetwork Initiative (EAIEN) is a Cooperation Partnership in School Education (KA220-SCH) co-funded by the Erasmus+ Programme of the European Union under the 2024 call. Coordinated by Anadolu University, Türkiye, the project brings together five organisations from three countries (Türkiye, Romania, and Greece) around a shared conviction: that the schools of today must prepare young people for a future defined simultaneously by the green transition and by the rapid advance of artificial intelligence.

The name of the project condenses its three conceptual pillars. “Eco” refers to the ecological dimension: the green skills, environmental awareness, and sustainability competences that the European Green Deal and the GreenComp framework have placed at the centre of European education policy. “AI” points to artificial intelligence literacy, understood not merely as technical fluency but as the capacity of teachers and

students to use, evaluate, and co-create with AI tools in a critical and responsible manner. “EduNetwork” expresses the project’s method: a transnational network of universities, schools, and an education technology company, working together so that knowledge, materials, and experience circulate across institutional and national borders.

EAIEN pursues two intertwined objectives. The first is to upskill high school teachers in the instruction of green skills and to raise awareness among their students, so that environmental sustainability becomes a living element of the curriculum rather than an occasional theme. The second is to involve teachers and students together in the production of Open Educational Resources (OER), using artificial intelligence as a creative and productive partner in that process. Through this dual approach, the project cultivates awareness in the fields of green skills and AI literacy.

The vision underlying these objectives is that of a self-sustaining green skills education ecosystem. Rather than delivering a one-off training and dispersing, the partnership set out to build durable structures: a Learning, Teaching and Training Activity (LTTA) that equips educators with pedagogy, materials, and AI competence; a Green Skills Ambassador Programme that positions students as active knowledge creators rather than passive recipients; an online OER platform that makes the project’s outputs openly accessible to educators anywhere; and cross-border mobilities in which students teach their peers the green skills they have mastered in their own regional context. The Experience Sharing Book in which this chapter appears is itself one of these sustainability instruments: a record of what was done, what was learned, and what other school communities and practitioners across Europe can replicate.

2.2 Scope and Relevance of the Project in the Context of European Education

EAIEN is anchored in two Erasmus+ policy priorities for school education: the development of key competences, and support for teachers, school leaders, and other teaching professions. It addresses three programme topics: green skills; digital content and pedagogical practices; and the creation of new, innovative or joint curricula and courses. This positioning reflects a deliberate reading of the current European educational landscape, in which two transformations, the green and the digital, are unfolding simultaneously and demand an integrated pedagogical response.

On the green side, the European Union has made it clear through the European Green Deal, the European Skills Agenda, and the Council Recommendation on learning for the green transition that environmental sustainability competences must be embedded across all levels of education. Yet at the secondary level, systematic

integration of green skills into curricula remains scarce, and teachers frequently report a lack of ready-to-use, high-quality materials and of training tailored to sustainability pedagogy. On the digital side, the Digital Education Action Plan 2021–2027 calls for the development of digital competence, including emerging AI literacy, for both educators and learners. Here too, schools face a gap between policy ambition and classroom reality: AI tools are entering education faster than professional development structures can absorb them.

The originality and relevance of EAIEN lie in treating these two agendas as one. The project uses AI as the engine for producing green skills content: teachers trained in the LTTA learn to generate and adapt AI-enhanced Open Educational Resources; student ambassadors learn to create AI-enhanced materials on a green skill specific to their own country and region; and all of these outputs are consolidated in an open platform. In this way, each priority reinforces the other: AI literacy is acquired through meaningful, sustainability-oriented content creation, while green skills education gains the scalability, adaptability, and personalisation that AI-supported resources make possible.

The scope of the project is organised into four work packages. WP1 Project Management provides the coordination, quality assurance, and risk management framework, governed by a Project Management Committee, a Steering Committee, and a Quality Assurance Committee. WP2 Green Skills Education Ecosystem Development delivers the teacher-focused LTTA, the selection and training of student Green Skills Ambassadors across the partner high schools, and the Green Skills OER Platform. WP3 organises two physical mobilities: the Green Skills Peer Training Exchange in Eskişehir, in which students teach their peers in a partner country along with some local observations, and the Local Observations in Sântana, which ground this learning in field trips and real-world practice along with peer training sessions as well. It also covers the production of this Experience Sharing Book. WP4 Dissemination and Exploitation carries the results outward through promotional content, a project website and social media presence, conference presentations, and a multiplier event bringing together educators and relevant stakeholders.

The European added value of this design is substantial. No single national activity could reproduce the cross-cultural learning at the heart of the project: students discover that green challenges and green solutions take different forms in different countries, and that sustainability is by nature a shared, transnational responsibility. The consortium likewise pools complementary expertise that does not exist within any single country or institution type: the open and distance education tradition of a Turkish mega-university, the research and course design capacity of a Romanian technical university, the classroom realities of two very different secondary schools, and the learning design and technology know-how of a Greek SME. By publishing its outputs as

Open Educational Resources, the project aims at influence beyond its immediate participants, towards a European school education system in which green skills and AI literacy are treated as fundamental components of key competence development.

> THINK ABOUT IT
> EAIEN deliberately treats the green and the digital agendas as one. In your own context, are sustainability and AI or digital competence handled by the same people, in the same subjects and with the same resources? What would change if they were brought together?

2.3 Consortium and Partner Profiles

The EAIEN consortium was deliberately composed to combine academic rigour, practical school-level insight, and technological capability. It includes two higher education institutions (one Turkish, one Romanian), two secondary schools (one Turkish, one Romanian), and one education technology SME (Greek). Universities lead curriculum design, teacher training, and research-informed content; high schools anchor the project in classroom practice and lead student engagement; and the technology partner guides the integration of AI tools and digital platforms across all activities. The profiles below introduce each organisation and its role in the project.

2.3.1 Anadolu University (Eskişehir, Türkiye): Coordinator

Founded on the legacy of the Eskişehir Academy of Economic and Commercial Sciences (1958) and established as a university in 1982, Anadolu University is one of the world's leading mega-universities in open and distance learning. Its Open Education System serves more than two million enrolled learners, and the university has been a pioneer of distance education in Türkiye since introducing the country's first such system. Alongside more than twenty faculties and three vocational schools spanning the humanities, social sciences, and applied sciences, the university offers extensive online provisions.

Anadolu University brings to EAIEN long experience in EU-funded educational projects from digital education readiness and online proctoring to teacher training and inclusive digital learning together with deep expertise in learning design, quality assurance and the pedagogical application of emerging technologies. Its key project staff combine internationally recognised scholarship in open and distance learning, curriculum design, artificial intelligence, and quality assurance.

2.3.2 Universitatea Politehnica Timișoara (Timișoara, Romania)

Established in 1920 as the Polytechnic School of Timișoara, Universitatea Politehnica Timișoara (UPT) is one of Romania's traditional universities of advanced research and education. Its ten faculties serve approximately 13,500 students supported by nearly 700 academic staff, and its twenty-six research centres give the institution national and international standing across a wide range of engineering and applied science fields. Strongly internationalised, UPT maintains over 400 bilateral Erasmus+ agreements and more than 100 framework cooperation agreements with partners across Europe, Asia, and the Americas. UPT is launching Romania's first Faculty of Robotics, artificial intelligence and Autonomous Systems, marking a national milestone in higher education and preparing future engineers for emerging fields such as humanoid robotics.

Within EAIEN, UPT contributes academic expertise in technology, AI in education, and curriculum development. It co-designs the teacher training and the AI-driven OER methodologies in WP2, provides supervision and mentoring during the student mobilities in WP3, leads the compilation of this Experience Sharing Book, and coordinates the project's conference dissemination in WP4, ensuring that the project's methods and findings reach the academic and educational research communities.

2.3.3 Özel Çağdaş Fen Lisesi (Eskişehir, Türkiye)

Founded in 1992, the Çağdaş Schools have grown into a pioneering socio-cultural and academic institution in Eskişehir, serving around one thousand students with over one hundred experienced teachers; the science high school itself was established in 2019. The school prepares students for national and international examinations, places strong emphasis on foreign language competence and project work and has a distinguished record in robotics – including a best design award at the 2020 VEX Robotics Championship and participation in the VEX Robotics World Championship in the USA. Its international experience includes Comenius multilateral projects, eTwinning, EU simulation activities, and the Erasmus+ KA229 project "inteGREATing Stories".

In EAIEN, Özel Çağdaş Fen Lisesi is one of the two schools in which the project comes alive in the classroom. It leads the Student Selection and Training for the Green Skills Ambassador Programme in WP2, contributes teachers and students to the LTTA, the OER creation, and the peer training mobilities, and leads the organisation of the project's multiplier event in Türkiye in WP4. Its long-standing cooperation with the universities of Eskişehir makes it a natural bridge between academic expertise and secondary school practice.

2.3.4 Liceul Tehnologic „Ștefan Hell" Sântana (Sântana, Romania)

The Technological High School "Ștefan Hell" continues a 265-year tradition of education in Sântana. Teaching is carried out in Romanian and German, and the institution spans all levels from preschool to high school, with vocational profiles in economic activities, mechanical maintenance and repair, and social sciences. The school serves 968 learners with a staff of 97 and is notable for its multi-ethnic, intercultural character and its inclusive mission: around 35% of its students come from rural areas, some fifty have special educational needs, and more than eighty are in the child protection system. The school's European experience includes Erasmus+ teacher training and VET mobility projects, the KA229 project "inteGREATing Stories", the national ROSE programme, and a seven-year Erasmus+ accreditation, "Practice and Succeed".

Within EAIEN, the school leads the Local Observations activity in WP3, organising field trips and on-site experiences in Romania that give students a practical, regional understanding of green skills. Its teachers and students participate fully in the ambassador programme, the OER creation, and the peer training exchange, bringing to the partnership the perspective of a vocational, rural-serving, and strongly intercultural school community: precisely the kind of context in which inclusive green skills education matters most.

2.3.5 Future Learning (Volos, Greece)

Future Learning is a Greek SME specialising in technology-enhanced learning. Its mission is to integrate emerging design, pedagogies, and digital technologies to create innovative and effective learning experiences for school, higher, vocational, professional, and adult education. The company's core expertise lies in the design and technical implementation of digital learning games and collaborative learning platforms grounded in design thinking, developed through participation in dozens of European R&D projects on themes ranging from critical and computational thinking to sustainability, disaster preparedness, and natural resources management. It maintains close working relationships with the University of Thessaly and with secondary education authorities in the Thessaly region, enabling piloting and teacher training at scale.

In EAIEN, Future Learning is the technological backbone of the partnership. It leads the development of the digital components such as the online course, the OER platform and the design and publication of the project's promotional content and digital identity, and it guides the integration of AI tools and digital methodologies across the teacher training, the student content creation, and the OER platform. The company's key personnel bring decades of combined experience in educational software engineering, serious games architecture, and technology-enhanced learning design. The team has

worked on around 50 projects including sustainability-themed learning games and platforms in earlier European R&D projects such as a recent one called Computational Seniors.

2.3.6 A Partnership Greater Than the Sum of Its Parts

Taken together, the five partners form a carefully balanced ecosystem. The universities contribute research expertise, pedagogical depth, and training capacity; the schools ensure that every output is grounded in the realities of secondary education and that students remain at the heart of the project; and the technology partner provides the technical capabilities needed to develop robust, sustainable AI-supported solutions rather than treating technology as a mere add-on.

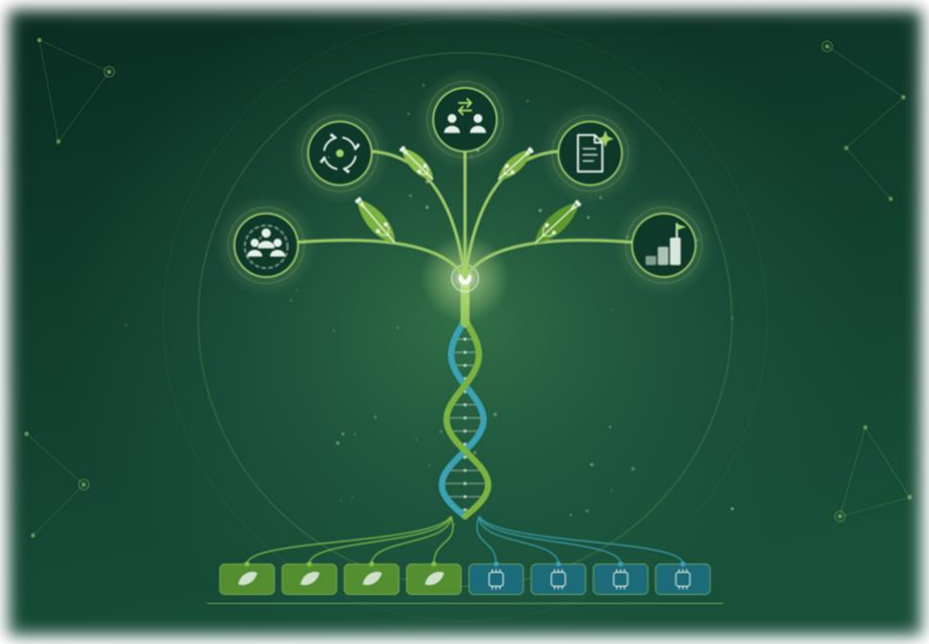
The chapters that follow document how this partnership worked in practice: the training delivered, the resources created, the borders crossed, and the lessons that the EAIEN community now offers to other educators, schools and institutions across Europe. Beyond its tangible outputs, EAIEN demonstrates the value of intercultural dialogue, transnational collaboration, and the exchange of expertise in addressing shared educational challenges. By bringing together diverse perspectives and experiences, the partnership has fostered innovative approaches to AI literacy and green skills education, creating a model for future European cooperation and contributing to a more sustainable, inclusive, and digitally empowered educational landscape.

YOUR TURN

Design Your Own Partnership

Imagine you are preparing a cooperation partnership on green skills and AI literacy for your region.

1. Which types of organisations would you invite (for example universities, schools, NGOs, companies, local authorities), and why?
2. For each partner, name one strength it brings and one task it would lead, as in Table 4.1.
3. Which expertise would still be missing from your consortium, and how could you fill that gap?



CHAPTER 3

Educational and Conceptual Framework

Halil Düzenli, Yavuz Tuna

The EcoAI EduNetwork Initiative (EAIEN) did not emerge in a conceptual vacuum. Its design rests on a body of research and policy that has, over the past decade, converged on two claims: that education systems must equip learners with the competences required by the green transition, and that artificial intelligence is reshaping what and how students need to learn. This chapter sets out the educational and conceptual framework underpinning the project. Section 3.1 examines the twin educational challenges the project addresses – the integration of green skills into secondary education and the development of AI literacy – and the rationale for treating them as a single, mutually reinforcing agenda. Section 3.2 presents the pedagogical approaches adopted across the project's activities, from teacher professional development to student-led content creation and cross-border peer teaching. Section 3.3 situates the project within the European policy architecture for education, digital transformation,

and the green transition, showing how EAIEN operationalises priorities that European institutions have articulated but that classrooms have yet to fully absorb.

3.1 EcoAI: Sustainability and Artificial Intelligence in Education

3.1.1 The Green Skills Challenge in Secondary Education

The scientific consensus on climate change and biodiversity loss has translated, in the educational domain, into a broad agreement that sustainability must become a core purpose of schooling rather than a peripheral topic (UNESCO, 2020). Education for sustainable development (ESD) research has long argued that this requires more than transmitting environmental facts: it demands the cultivation of competences – systems thinking, futures literacy, critical reflection, and the capacity for individual and collective action – that enable learners to respond to complex, uncertain, and value-laden problems (Rieckmann, 2018; Vare & Scott, 2007). Wiek et al. (2011) synthesised this body of research into a widely cited set of key competences for sustainability, including systems-thinking, anticipatory, normative, strategic, and interpersonal competences, which have since informed curriculum development internationally.

At the European level, this competence-oriented understanding was codified in GreenComp, the European sustainability competence framework, which defines sustainability competence as the knowledge, skills, and attitudes that enable learners to "think, plan and act with empathy, responsibility, and care for our planet" (Bianchi et al., 2022, p. 2). GreenComp organises twelve competences into four interrelated areas: embodying sustainability values, embracing complexity in sustainability, envisioning sustainable futures, and acting for sustainability, and is explicitly designed as a non-prescriptive reference for educational programmes at all levels (Bianchi et al., 2022). The framework also distinguishes these broad sustainability competences from "green skills" in the narrower labour-market sense, referring to the professional skills required across sectors to support the green transition (Council of the European Union, 2022). EAIEN deliberately bridges both perspectives: the project's teacher training and student ambassador programme develop transversal sustainability competences in the GreenComp sense, while the peer-learning exchanges focus on concrete, region-specific green skills that students first acquire and then teach to their peers.

Despite this clear conceptual and policy foundation, implementation at the secondary education level remains uneven. Reviews of ESD implementation consistently report that sustainability is often integrated into curricula only in fragmented ways, that teachers frequently feel underprepared to address sustainability-related issues, and that opportunities for professional development remain limited (Cebrián & Junyent,

2015; Rieckmann, 2018). Young people themselves perceive this gap: European consultations preceding the 2022 Council Recommendation found that many students believe school fails to give them an adequate understanding of climate change and sustainability (Council of the European Union, 2022). The needs analysis conducted for the EAIEN proposal reached the same conclusion for the partner contexts: educators lacked ready-to-use, high-quality green skills materials, and students lacked structured opportunities to engage with sustainability as active participants rather than as an occasional classroom theme. The first educational challenge addressed by EAIEN is therefore one of capacity building: equipping teachers with the pedagogical knowledge, practical resources, and confidence needed to embed green skills meaningfully within the high school curriculum.

3.1.2 The AI Literacy Challenge

The second challenge concerns artificial intelligence. AI applications in education have expanded rapidly, from intelligent tutoring and learning analytics to, most disruptively, generative AI systems capable of producing text, images, and other forms of content on demand (Holmes et al., 2019; Zawacki-Richter et al., 2019). Systematic reviews of the field note both the promise of these technologies – personalised learning pathways, adaptive feedback, reduced teacher workload and more efficient administrative processes – and a persistent weakness: research and practice on AI in education have often proceeded with limited pedagogical grounding and insufficient critical reflection on ethics, equity, and the changing role of the teacher (Holmes et al., 2022; Zawacki-Richter et al., 2019).

In response to these developments, the concept of AI literacy has emerged as a fundamental educational objective. Long and Magerko (2020) define AI literacy as a set of competences that enable individuals to critically evaluate AI technologies, communicate and collaborate effectively with AI, and use AI as a tool online, at home, and in the workplace. Ng et al. (2021), reviewing the emerging literature, conceptualise AI literacy along four interconnected dimensions: knowing and understanding AI, using and applying AI, evaluating and creating with AI, and addressing the ethical and social implications of AI. Crucially, both conceptualisations emphasise that AI literacy is not intended only for future computer scientists. Rather, it represents a core competence for all citizens, comparable to reading, writing, digital literacy and numeracy in earlier technological eras.

International educational policy has followed the same trajectory. UNESCO's guidance for policymakers on AI and education (Miao et al., 2021) and its subsequent guidance on generative AI in education and research (Miao & Holmes, 2023) call for human-centred approaches in which AI complements rather than replaces human

capacities, professional judgement and creativity. In 2024, UNESCO consolidated this vision through two global competency frameworks. One is the AI Competency Framework for Teachers, which defines fifteen competencies across five dimensions, including a human-centred mindset, AI-ethics, AI pedagogy and professional development, all grounded in the principles of protecting teachers' rights, enhancing human agency, and promoting sustainability (Miao & Cukurova, 2024). The other is the AI Competency Framework for Students, which outlines twelve competencies across four dimensions, from a human-centred mindset and AI ethics to AI techniques, applications, and system design (Miao & Shiohira, 2024). Significantly, sustainability appears as one of the guiding principles of the teacher framework, reinforcing the idea that digital transformation and sustainable development should be pursued together rather than as separate educational priorities. This integrated perspective closely aligns with the philosophy underpinning the EAIEN project.

For schools, however, the gap between ambition and classroom reality is at least as wide as in sustainability education. By 2022, only a small minority of countries had included AI learning objectives in their national curricula (Miao & Shiohira, 2024), while many teachers reported having experimented with AI tools without having received systematic professional development on their pedagogical use, ethical implications, or potential limitations. The second educational challenge addressed by EAIEN is therefore fundamentally one of capacity building: empowering teachers and students to develop AI literacy in a way that is critical, ethical, and pedagogically productive while supporting innovation in sustainable education.

Together, these developments show that green competences and AI literacy should no longer be viewed as separate educational agendas. Instead, they constitute complementary dimensions of the competencies required for learners and educators to navigate the social, environmental, and technological challenges of the twenty-first century. This integrated perspective provides the conceptual foundation for the EAIEN project.

3.1.3 The EcoAI Synthesis: Why Combine the Two

What distinguishes EAIEN from projects that address either sustainability or digital competence in isolation is the deliberate fusion of the two: the "EcoAI" at the heart of the project's name. The European policy discourse describes the green and digital transitions as the "twin transition" and consistently emphasises that they must be managed together (European Commission, 2020a, 2020b). Yet, at the level of classroom practice, these two agendas are often pursued through separate initiatives, separate programmes, and separate educational resources. EAIEN's central premise is that each agenda can become a powerful vehicle for advancing the other.

In one direction, AI serves green skills education. A recurring barrier to effective sustainability teaching is the limited availability of adaptable, locally relevant, and up-to-date materials (Cebrián & Junyent, 2015). Generative AI can substantially reduce the time needed to draft and adapt such materials, although verification and localisation remain human tasks. At the same time, the Open Educational Resources (OER) movement provides the licensing and sharing infrastructure that allows them to be openly distributed, revised, and reused (UNESCO, 2019; Wiley & Hilton, 2018). In the EAIEN model, teachers participating in the project's Learning, Teaching and Training Activity learn to design AI-driven OER on green skills, and student ambassadors co-create additional resources for the project's OER platform, transforming a shortage of educational content into collaborative knowledge commons.

In the other direction, green skills education strengthens AI literacy. Research on AI literacy pedagogy emphasises that competences develop most effectively through authentic, meaningful engagement with AI rather than through decontextualised instruction about its concepts and functions (Long & Magerko, 2020; Ng et al., 2021). Sustainability provides exactly such an authentic context: when students prompt, evaluate, correct, and refine AI-generated content related to environmental issues they recognise from their own region, they exercise precisely the evaluative and ethical dimensions of AI literacy that frameworks such as UNESCO's foreground (Miao & Shiohira, 2024). At the same time, they naturally encounter questions concerning the accuracy, bias, transparency, and environmental footprint of AI itself: questions that connect the two forms of literacy through critical reflection. The EcoAI synthesis is thus not a marketing formula but a pedagogical mechanism in which two complementary competence domains mutually reinforce one another.

> THINK ABOUT IT
> The chapter argues that AI and green skills education can strengthen each other. Think of one lesson in which an AI tool would push your students to examine an environmental claim more critically, and one lesson in which the same tool might let them think less. What makes the difference?

3.2 Pedagogical Approaches Adopted

The activities outlined in the EAIEN workplan (teacher training, the Green Skills Ambassador Programme, AI-supported OER creation, cross-border peer training exchanges, local observations, and the Experience Sharing Book itself) are not an arbitrary collection of project outputs. They reflect a coherent set of pedagogical

commitments grounded in learning sciences and the principles of ESD. Five of these commitments deserve explicit articulation.

3.2.1 Social Constructivism and Collaborative Knowledge Building

The EAIEN project is grounded in a constructivist view of learning, which holds that knowledge is actively constructed through social interaction rather than passively transmitted from teacher to learner. In the Vygotskian tradition, learning is mediated by more knowledgeable others and by cultural tools, and learners can accomplish with support what they cannot yet carry out alone (Vygotsky, 1978). EAIEN operationalises this in several layers. Teachers construct their green skills pedagogy collaboratively in the LTTA, with university experts and the technology partner acting as mediators; students construct their understanding of green skills in ambassador training facilitated by their own teachers; and, in the OER creation activities, AI tools function as a new kind of cultural tool: a mediating artefact whose outputs must be interrogated, corrected, and appropriated rather than accepted. The project's collaborative platforms and online community extend this social construction across institutional and national boundaries, in line with research showing that computer-supported collaborative learning can sustain knowledge building beyond the individual classroom (Stahl et al., 2006).

3.2.2 Project-Based and Experiential Learning

EAIEN's student activities are organised as extended, authentic projects rather than as isolated sequences of lessons. Project-based learning (PBL) in which students investigate a driving question and produce a public artefact over an extended period has a substantial evidence base at the secondary level. Kokotsaki et al. (2016), in their review of the literature, conclude that PBL enhances engagement and can improve achievement when supported by adequate teacher preparation, proper technology, and well-aligned assessment practices. Within EAIEN, each partner country's student team adopts a specific green skill as its driving focus, investigates it in depth, and produces publicly accessible outputs: AI-enhanced OER for the project platform, and a peer training programme. The Local Observations activity further strengthens the experiential dimension that ESD research considers indispensable. Field visits and on-site observation in the partner countries enable participants to connect abstract sustainability concepts with concrete regional practice, following Kolb's (2015) learning cycle of concrete experience, reflective observation, abstract conceptualisation, and active experimentation. The Experience Sharing Book institutionalises the reflective phase of this cycle across the entire partnership, capturing insights, lessons learned, and examples of good practice. The value of this pedagogical approach became particularly evident during the international exchange mobilities in Türkiye and Romania. These

mobilities enable students and teachers to engage directly with diverse educational and sustainability contexts, collaborate in multicultural teams and exchange innovative practices in AI-supported education and green skills development.

3.2.3 Peer Learning and Learning by Teaching

The Green Skills Peer Training Exchange rests on one of the most robust findings in educational research: students learn deeply when they teach others. Topping (2005) synthesises decades of evidence showing that peer tutoring and peer learning yield gains for tutors as well as tutees, across ages and subjects. Cognitive research explains why: preparing to teach and actually teaching require learners to select, organise, and integrate knowledge: generative processing that produces more durable and transferable understanding than passive study (Fiorella & Mayer, 2013). In EAIEN, this mechanism is further strengthened by the cross-cultural setting. Student ambassadors do not merely teach a green skill; they teach it to peers from another country, which compels them to make explicit the regional assumptions embedded in their knowledge and to develop the communication and intercultural competences that the project's objectives seek to foster. The ambassador model also embodies the participatory principle, central to both ESD and the 2022 Council Recommendation, that learners should be co-creators of sustainability learning rather than its recipients (Council of the European Union, 2022; Rieckmann, 2018).

TRY THIS IN YOUR CLASSROOM

Learning by Teaching

Ask small groups of students to prepare a five-minute explanation of a local sustainability issue for younger learners. Before they present, have them list the three questions they expect to be asked.

Watch for the moment they discover what they cannot yet explain: that is the generative processing described in Section 3.2.3 at work.

3.2.4 OER-Enabled and AI-Supported Pedagogy

The project's content creation strand draws on what Wiley and Hilton (2018) term OER-enabled pedagogy: teaching and learning practices that are possible only because open licensing permits learners' work to be retained, reused, revised, remixed, and redistributed. When students create OER, their assignments become "renewable"

rather than disposable, artefacts with value and audience beyond the grade, which research links to increased motivation and ownership (Wiley & Hilton, 2018). EAIEN extends this approach by integrating generative AI: students and teachers use AI tools to draft, illustrate, translate, and adapt materials, then apply human judgement to verify, contextualise, and openly license the results. This workflow follows the human-centred orientation of UNESCO's guidance on generative AI, which emphasises human agency, validation of outputs, and age-appropriate, ethically grounded use (Miao & Holmes, 2023). It also directly develops the "creating with AI" level that both UNESCO competency frameworks identify as the highest stage of progression (Miao & Cukurova, 2024; Miao & Shiohira, 2024). The resulting resources feed the project's Green Skills OER Platform, aligning the project with the UNESCO (2019) Recommendation on OER, which urges member states to build capacity, develop supportive policy, and promote effective, inclusive access to openly licensed educational materials.

3.2.5 Competence-Oriented Teacher Professional Development

Finally, the project's teacher-focused work adopts a competence-oriented model of professional development. Research on effective teacher professional development converges on a set of design features: sustained duration, active learning, collaboration, modelling of practice, coaching, and opportunities for feedback and reflection (Darling-Hammond et al., 2017). The EAIEN LTTA was designed in line with these principles: a structured programme in which teachers do not merely learn about green skills pedagogy and AI tools but actively apply them, produce educational materials, and continue collaborating through the project's online community afterwards. Conceptually, the training is mapped to the European frameworks that define the target competences: GreenComp for the sustainability dimension (Bianchi et al., 2022), DigCompEdu – the European framework for the digital competence of educators, spanning professional engagement, digital resources, teaching and learning, assessment, learner empowerment, and facilitating learners' digital competence (Redecker, 2017) – and the UNESCO AI Competency Framework for Teachers for the AI dimension (Miao & Cukurova, 2024). This alignment ensures that "teacher empowerment" within EAIEN is not rhetorical but specifiable: partners can verify which competences the training targets, at which progression levels, and with which evidence.

3.3 Alignment with European Education and Green Policies

EAIEN is an Erasmus+ Cooperation Partnership, and its conceptual framework is therefore closely aligned with the European policy architecture it is designed to support. Three policy strands are directly operationalised within the project: the European green

transition agenda, the European digital education agenda, and the Erasmus+ programme priorities for school education.

3.3.1 The Green Transition Agenda

The European Green Deal committed the Union to achieving climate neutrality by 2050 and identified education as one of the key policy areas enabling that transition (European Commission, 2019). Two instruments translate this commitment into educational terms. The first is GreenComp, whose development was itself a policy action of the Green Deal and which now provides the common European reference for sustainability competences (Bianchi et al., 2022). The second is the Council Recommendation of 16 June 2022 on learning for the green transition and sustainable development, in which member states committed to making sustainability a priority across education and training: providing learning opportunities in formal and non-formal settings, supporting educators' professional development in sustainability pedagogy, adopting whole-institution approaches, and involving learners meaningfully in co-creating sustainability learning (Council of the European Union, 2022). EAIEN maps onto this Recommendation with unusual precision: its LTTA responds to the call for educator support; its ambassador programme and student-created OER respond to the call for learner co-creation; its field observations respond to the call for hands-on, locally relevant learning; and its OER platform and policy-oriented dissemination respond to the call for shared resources and system-level uptake. The European Skills Agenda reinforces the same direction from the employment side, treating skills for the twin green and digital transitions as a core objective of European skills policy (European Commission, 2020b).

3.3.2 The Digital Education Agenda

On the digital dimension, the Digital Education Action Plan 2021–2027 sets out the European Union's vision for high-quality, inclusive digital education, through two strategic priorities: fostering a high-performing digital education ecosystem, and enhancing digital skills and competences for the digital transformation, explicitly including the need for citizens to understand emerging technologies such as artificial intelligence (European Commission, 2020a). The Action Plan has led, among other outputs, to the Commission's Ethical Guidelines on the Use of artificial intelligence and Data in Teaching and Learning for Educators, which help teachers reflect on trustworthiness, fairness, transparency, and human agency when using AI systems in the classroom (European Commission, 2022). In addition, the EU AI Act (Regulation (EU) 2024/1689) is directly relevant: Article 4 has required AI literacy from providers and deployers since February 2025, and several educational uses are classified as high-risk

in Annex III. EAIEN translates these priorities into classroom practice through AI literacy training for teachers and students, ethically framed AI-supported content creation, and the development of an open educational resources (OER) platform designed to promote openness and reuse, in line with both the Digital Education Action Plan and the UNESCO (2019) Recommendation on Open Educational Resources. The competence frameworks underpinning the Action Plan, DigComp for citizens and DigCompEdu for educators, provide the reference points against which the project's digital outcomes are articulated (Redecker, 2017; Vuorikari et al., 2022).

3.3.3 Erasmus+ Priorities and Key Competences

Within the Erasmus+ programme itself, EAIEN was designed to address two priorities for school education: the development of key competences, and support for teachers, school leaders, and other teaching professions. The concept of key competences is anchored in the Council Recommendation of 22 May 2018 on Key Competences for Lifelong Learning, which identifies eight competences. Among them are digital competence, mathematical competence and competence in science, technology and engineering; personal, social and learning-to-learn competence; and citizenship competence as the combination of knowledge, skills, and attitudes that all individuals need for personal fulfilment, employability, and active citizenship (Council of the European Union, 2018). Sustainability competences and AI literacy fit naturally within this architecture. GreenComp was developed to translate the sustainability dimension into a concrete and teachable framework (Bianchi et al., 2022), while AI literacy extends digital competence into its most consequential contemporary terrain (Vuorikari et al., 2022). The project's three Erasmus+ topics: green skills; digital content and pedagogical practices; and the creation of new, innovative or joint curricula, reflect, in programme terms, the integrated approach presented in Section 3.1.

The priority of supporting teachers is advanced not only through the LTTA but also through the project's overall design philosophy, which positions teachers as designers and co-creators of the green and digital curriculum rather than as implementers of externally developed materials. This approach aligns with the European policy emphasis on empowering the teaching profession and with the research consensus that lasting pedagogical change depends on sustained, collaborative, practice-embedded professional learning (Darling-Hammond et al., 2017).

3.3.4 From Alignment to Contribution

Alignment with policy is a necessary condition for an Erasmus+ project, but EAIEN also seeks to contribute to the broader policy dialogue. Its dissemination and exploitation work package includes the development of recommendations for integrating green skills

and AI literacy into educational policies at national and European levels, drawing on the partnership's documented experience. In this way, the project positions itself within the feedback loop on which European education governance depends. Frameworks such as GreenComp and DigCompEdu are explicitly designed as living references to be tested, adapted, and refined through practice (Bianchi et al., 2022; Redecker, 2017), while the UNESCO AI competency frameworks likewise encourage contextualisation by schools and education systems (Miao & Cukurova, 2024; Miao & Shiohira, 2024). The chapters that follow, documenting the training delivered, the resources created, and the learning mobilities undertaken, provide the empirical material of that contribution: a small-scale yet tangible demonstration of how the twin transition can be enacted simultaneously in the everyday life of European schools.

YOUR TURN

Connect the Frameworks

1. Choose one GreenComp competence (for example systems thinking or exploratory thinking).
2. Choose one AI literacy dimension (for example evaluating AI outputs or the ethics of AI).
3. Design a single 45-minute activity that develops both at the same time.
4. Which of the five pedagogical commitments in Section 3.2 does your activity rely on?

My activity idea:

DISCUSS WITH COLLEAGUES

1. Is the "twin transition" visible in your national curriculum, or do green and digital competences sit in separate documents?
2. Who in your institution is responsible for each agenda, and do they ever plan together?



CHAPTER 4

Journey of the Project

Ali Akarsu, Mihaela Tarce

This chapter describes how five institutions in three countries organised themselves to deliver the EcoAI EduNetwork Initiative (EAIEN). It is, in the plainest sense, the administrative story: how the project began, how roles were divided, how people met, how decisions were taken, and what proved difficult.

4.1 Project Launch and Early Stages

4.1.1 Kick-off Events and Initial Planning

EAIEN formally began in December 2024, a twenty-four-month Cooperation Partnership in School Education funded as a lump sum of EUR 250,000 across four work packages, with Anadolu University as coordinator and applicant.

Two successive changes of Rector at the coordinating university (the Rector being the legal representative whose signature the programme requires) delayed the signing of the Grant Agreement, the bilateral agreements with partners, the associated amendment, and consequently the first payments. This was nobody's error. It is precisely the sort of institutional event that risk registers gesture at in the abstract and never anticipate in its specific form, and it arrived at the least convenient moment, when four partners were waiting for confirmation that a project they had spent months preparing was genuinely going ahead.

The consortium handled it in two ways. The first was procedural: transparent and continuous communication with the Turkish National Agency, and full disclosure to partners about what was happening and why. The second turned out to matter more. Before the official Kick-off could take place, the coordinator convened an introductory meeting with all partners: not to take decisions, since the legal basis for them was not yet in place, but simply to bring everyone into contact.

That meeting proved to be one of the more consequential moments of the entire project, for reasons unrelated to the administrative problem that prompted it. It established the communication channels, the working rhythm and, most importantly, a degree of personal familiarity among people who would go on to spend two years working together, at a point when there were no deliverables to argue about. Consortia normally meet for the first time with an agenda and a deadline; this one met first without either. The consortium would recommend the practice to others regardless of whether their paperwork is delayed.

The wider lesson is about silence. When an administrative hold-up is unavoidable, the coordinator's choice is not between delay and no delay; it is between allowing the silence to generate anxiety among partners and filling it with contact. Partners who hear nothing during a delay do not conclude that the delay is being competently managed. They conclude, reasonably, that nobody is telling them anything.

The official Kick-off meeting, held online once the agreements were in place, could therefore have a different character: less introduction and more work. Its agenda covered confirmation of the workplan and Gantt chart carried over from the application, the establishment of the governance structures, the communication protocols, and the suite of planning documents that would govern the following two years. Those documents deserve a mention, because they were prepared at the start rather than assembled retrospectively for reporting. The central artefact was the Project and Quality Management Handbook, which set out roles and responsibilities, management procedures, quality management standards, and a risk management strategy including conflict-resolution and escalation mechanisms. Alongside it sat quality checklists to

monitor outputs, guidelines for budget and reporting, and the communication and dissemination plans.

One characteristic of lump-sum funding shaped these choices. A lump-sum grant does not require line-by-line justification of costs, which sounds like a simplification and partly is; but payment depends on demonstrating that the activities described in the application were genuinely carried out. The management burden therefore shifts from receipts to evidence. A consortium that begins collecting evidence at reporting time is reconstructing history; one that establishes the habit at the outset is simply filing. EAIEN built a shared Google Drive workspace in the first weeks, with folders for financial templates, activity evidence, meeting agendas and reports, and every partner uploading progressively as work was completed. Every partner subsequently said this was among the most useful early decisions taken.

> THINK ABOUT IT
> The EAIEN partners met for the first time with no agenda and no deadline. What could your team gain from a first meeting without deliverables? What would you need to put in place so that silence during an administrative delay does not turn into anxiety?

4.1.2 Defining Roles and Responsibilities

Bilateral agreements were signed between the coordinator and each partner organisation, establishing commitments, mutual accountability and the agreed distribution of the grant. On that basis, three committees were formally established, each with representation from every partner institution:

- **The Project Management Committee (PMC),** responsible for setting goals, defining timelines and allocating resources, and the body in which the major consortium meetings take place.
- **The Steering Committee (SC),** responsible for overseeing progress, taking key decisions and providing strategic direction between the major meetings.
- **The Quality Assurance Committee (QAC),** responsible for standards, checklists and reviews, and for approving outputs before publication.

Underneath this governance layer, every task in the workplan had a named owner. The distribution was designed so that each partner leads something substantial rather than contributing to everything and owning nothing.

Table 4.1 Task ownership across the four work packages.

Work package	Task	Task owner
WP1	Project management, governance and quality	Anadolu University
WP2	Design and delivery of the LTTA (online course)	Anadolu University
WP2	Student selection and Green Skills Ambassador Programme	Özel Çağdaş Fen Lisesi
WP2	Green Skills OER Platform	Future Learning
WP3	Green Skills Peer Training Exchange	Anadolu University
WP3	Local Observations	Liceul Tehnologic „Ștefan Hell” Sântana
WP3	Experience Sharing Book	Universitatea Politehnica Timișoara
WP4	Promotional content and visual identity	Future Learning
WP4	Presenting at conferences	Universitatea Politehnica Timișoara
WP4	Multiplier event	Özel Çağdaş Fen Lisesi

This distribution was not a diplomatic gesture. Leading a task creates ownership of a kind that participation does not, and it spreads a load that otherwise accumulates entirely on the coordinator.

One small procedural rule accompanied task ownership and had an effect out of proportion to its modesty: the task owner drafts and circulates the agenda for meetings concerning that task, and writes the report afterwards. Both are stored in the shared workspace. The point is not administrative tidiness. It prevents the coordinator from becoming the only person in the consortium who holds a complete picture, which is the single most common structural weakness in partnerships of this kind and the one that does most damage when a key individual changes role.

4.2 Coordination and Communication

4.2.1 Online Coordination Meetings and Transnational Project Meetings

Seven consortium meetings were foreseen across the project’s lifetime, deliberately mixing online and face-to-face formats. The early sequence ran from the online Kick-off, to the three Online Coordination Meetings (OCM), and then the three face-to-face Transnational Project Meetings (TPM), and the online final evaluation meeting, scheduled around the project’s later milestones. These meetings were positioned at

milestones rather than at regular intervals, on the reasoning that a consortium should meet when there is something to decide.

Two years of using both formats produced a reasonably clear view of what each is good for, and it is not quite the conventional one. Online meetings are efficient for status reporting. The face-to-face meetings earned their cost in a specific and slightly unexpected way. The substantive conversations rarely occurred during the agenda items; they occurred in the intervals over coffee, walking between buildings, during a school visit, at dinner. That is where the awkward questions were asked, where a partner's unstated assumption became visible to the others, and where several of the project's better ideas originated.

A few conventions made the online meetings work better than they otherwise would. Agendas were circulated in advance by the relevant task owner, so that participants arrived having thought about the questions. Every meeting produced a written report stored in the shared workspace.

4.2.2 Steering Committee Meetings and Decision-Making Processes

Alongside the milestone meetings, the Steering Committee met monthly, in the first week of each month, in those months without a major consortium meeting. This produced a dual rhythm that the consortium regards as one of its better structural choices: milestone-level strategic discussion at intervals of several months, and continuous, low-intensity monitoring every four weeks.

The standing agenda was deliberately unambitious: progress against the Gantt chart, reminders of what falls due next, upcoming tasks, dissemination figures, and the status of financial reporting. Its value lay less in its content than in its predictability. A short, fixed, frequent meeting is what prevents a project from discovering in month eighteen that something quietly stopped moving in month eleven. It also gives partners a known place to raise a difficulty. This matters more than it sounds: a problem raised in a scheduled monthly meeting is an ordinary agenda item, whereas the same problem raised by email between meetings feels to everyone involved like an escalation. Consortia that meet only when something is wrong create an incentive not to mention that something is wrong.

Decision-making in practice was consensual. Most matters were settled by discussion in the Steering Committee or the Project Management Committee, with the coordinator carrying formal responsibility towards the National Agency and therefore the final say where a decision could not be deferred. The Project and Quality Management Handbook contains a defined escalation path and a conflict-resolution mechanism, including mediation steps. Neither was needed during the project. The

consortium is disinclined to claim credit for this: some of it is the effect of having agreed the mechanism in advance, and some of it is simply that these five institutions worked well together.

Every meeting generated a written record held in the shared workspace, together with the agendas that preceded it. The purpose is institutional memory rather than compliance. Staff move, roles change, and a two-year project that exists only in the recollections of the people who happened to attend is a fragile object. The written record is, in a real sense, the principal deliverable of project management.

Financial governance followed the same logic of continuous rather than retrospective work. Each partner maintains a dedicated reporting sheet, declares costs against it, and uploads supporting evidence into the shared workspace as activities are completed, guided by the budget and reporting guidelines prepared at the start. Progressive reporting keeps monitoring current and makes the preparation of formal reports an act of assembly rather than of archaeology.

4.2.3 Challenges and Lessons in Coordination

Five difficulties are worth recording, of which only the first was serious.

- **The administrative start.** The delay caused by successive changes of legal representative was resolved without damage, but the transferable lesson is not “anticipate changes of Rector”. It is that the signature chain in any large institution will eventually break somewhere, and that the coordinator’s obligation during such a break is to communicate through it rather than wait for it to end.
- **Multi-channel communication is a trade-off, not a solution.** The consortium used a mailing list, a shared Drive, a WhatsApp group, and direct calls, and each did something the others could not: WhatsApp for speed and informality, the mailing list for record, the workspace for artefacts. The hazard is that a decision taken in a fast channel and never written into a slow one has effectively not been taken. The working rule that emerged was that anything decided anywhere must appear in a meeting report or on the mailing list.
- **Calendars do not align across borders.** Turkish and Romanian school years, examination periods, national holidays and university semesters overlap only partially, and Greek institutional rhythms differ again. Planning around school calendars rather than around the project’s own Gantt chart avoided several collisions that would otherwise have been discovered a fortnight in advance.
- **Knowledge concentrates unless it is deliberately distributed.** The default state of any coordinated partnership is that everything routes through the coordinator, who then becomes both the bottleneck and the single point of failure. Named task

ownership, and the requirement that task owners write their own agendas and reports, were the mechanisms that counteracted this.

- **Documentation feels like overhead until the moment it does not.** Writing reports for meetings whose content everyone remembers seems redundant at the time. Eighteen months later, when a question arises about what was agreed and why, it is the only thing standing between the consortium and a reconstruction from memory.

The project ran to its workplan without significant delay and without any redistribution of tasks from the application stage, which the consortium reports as fact rather than as achievement. It would be misleading to attribute this entirely to governance procedures: a partnership of willing and competent institutions is a precondition that no committee structure can manufacture. What procedures determine is whether that initial willingness survives contact with twenty-four months of deadlines, reporting cycles and competing institutional priorities. On the evidence of this project, the arrangements that mattered most were the least sophisticated ones: a monthly meeting that always happened, a shared folder that everyone actually used, a named owner for every task, and a written record of what was decided.

The EAIEN experience also confirmed that responsibility is most effective when it is explicit, distributed and documented. Each partner was not only expected to contribute to the project as a whole, but to take clear responsibility for defined tasks, communicate progress, maintain evidence and contribute to collective decisions. This distribution of responsibility reduced dependence on the coordinator, strengthened accountability between partners, and ensured that knowledge and experience remained within the consortium rather than with individual people. The task-owner approach therefore became more than an organisational arrangement: it was a practical mechanism for sustaining commitment, continuity and shared ownership throughout the project.

SELF-CHECK

How Healthy Is Your Project Coordination?

Tick each statement that is true for a project you are involved in now or have recently completed.

- ☐ Every task has a named owner who writes its agendas and reports.
- ☐ There is a short, fixed meeting that happens every month, whatever the news.
- ☐ All partners actually use one shared workspace for evidence and documents.
- ☐ Decisions taken in fast channels (chat, calls) are always written into a slower one.
- ☐ School calendars and national holidays of every partner are built into the plan.
- ☐ The project could continue smoothly if the coordinator changed role tomorrow.

Any unticked box is a good agenda item for your next team meeting.



CHAPTER 5

Reflections, Teaching and Learning Experiences

Funda Yoldaş, Ioana Lucia Patrauta, Liviu Claiciu

Numbers tell one part of the EAIEN story. Across the project's training activities and mobilities, satisfaction scores were consistently high: teacher ratings of 4.93 out of 5.00 for the ambassador training, a unanimous 5.00 across every survey item for the Eskişehir exchange, 97.8% agreement among teachers in Sântana, and student feedback firmly in the "excellent" range at every stage. Ten teachers were trained through the LTTA; forty-two students became Green Skills Ambassadors; and, through eleven peer training sessions across two countries, those ambassadors carried the project's content to 267 of their local peers.

Behind each figure, however, stands a person: a teacher who entered a training session with quiet scepticism and left redesigning her lesson plans; a student who had never spoken in front of a class and, three months later, was teaching recycling to his

peers in English; two delegations that arrived as strangers and left as friends. This chapter gathers those human experiences: Section 5.1 presents the reflections of the educators who implemented EAIEN activities, Section 5.2 turns to the students and their learning outcomes, and Section 5.3 examines what the partners learned from and with each other. Throughout, quantitative findings from the project's structured feedback instruments are interwoven with qualitative voices from open-ended responses, reflection sessions, and internal reporting; where individuals are described at length, details have been lightly generalised to protect privacy.

5.1 Reflections from Educators

5.1.1 Classroom Implementation of EAIEN Activities

The EAIEN model asked something unusual of its teachers. The training came with an immediate, concrete obligation: the teachers who completed the Learning, Teaching and Training Activity (LTTA) would themselves deliver a four-day Green Skills Ambassador training to students at their own schools within months. Teachers were not consumers of training content; they were the second link in a cascade that would eventually reach 267 students. This shaped their engagement from the first session: every element of the LTTA (the green skills content, the AI tool demonstrations, the pedagogical strategies) was interrogated through the lens of imminent classroom use. The Teacher's Handbook, produced in English, Turkish, Romanian, and Greek, became the anchor of this process: annotated during the LTTA, adapted over the summer and autumn, and used as a shared reference during implementation. When later asked to rate the consistency between the training content and the Handbook, teachers at both schools gave a perfect 5.00.

Implementation unfolded in two national variants of a common curriculum: at Liceul Tehnologic „Ștefan Hell" in Sântana (Romania) and Özel Çağdaş Fen Lisesi in Eskişehir (Türkiye). In both cases the teachers followed the standardised structure from the Handbook and the LTTA course: an introduction to green skills, familiarisation with AI tools, collaborative groups with defined roles, and a guided production cycle in which each group created Open Educational Resources on a sustainability topic. Teachers at both schools describe the four days in strikingly similar terms: concepts and provocation on day one, group formation and the sobering discovery that an AI tool's fluent first draft is the beginning of the work on day two, quiet, absorbed production on day three, and internal presentations on day four. Both schools noted the same inflection point, mid-way through day three, when the question in the room changed from "Is this good

enough for the teacher?" to "Is this good enough to publish?": the moment when students became ambassadors.

Teachers identified the group role structure as the single most consequential classroom management decision of the programme. Rather than letting groups self-organise, the Handbook prescribed defined, rotating roles: content researcher, prompt designer, visual editor, presenter. Accountability became visible, quieter students acquired legitimate contributions, and the free-rider problem largely dissolved; the closure documentation distilled this into a formal lesson learned. Implementation was not friction-free. The most consistent observation at both schools concerned students' uneven starting points with AI tools, which absorbed more of day one than planned. Both schools also stressed that the freedom to schedule the training within their own calendars was essential to genuine participation. Finally, teachers described publication as the strongest motivational lever they had encountered: ambassadors knew their OER would be published under their group's authorship on a real platform, *oer.eaien.eu*, and revised, fact-checked, and debated accordingly. "Publishing student work on a real platform significantly increases motivation and ownership," the closure report concluded.

5.1.2 Teacher Narratives and Insights

Behind the aggregate data stand individual professional journeys of the teachers. Consider the senior science teacher at Çağdaş who entered the LTTA as the group's designated sceptic: not about sustainability, but about artificial intelligence, which she associated with plagiarism and shortcuts. Her turning point came when she watched her students use an AI tool to draft a poster on water scarcity and then, unprompted, spend forty minutes dismantling it: checking statistics, rejecting a clichéd image, rewriting a misleading caption. "I had been afraid the machine would think for them," she said. "Instead, they were thinking against the machine, and thinking harder than usual." Her observation captures the project's single most important pedagogical insight: AI raised the quality of student materials, but it did not replace the teacher; it relocated the teacher. The formal feedback states it precisely:

> *"AI tools improved the visual and structural quality of the materials created by students. They were able to produce more creative, organized, and engaging content. However, teacher guidance remained important to ensure the accuracy of information and to support students' critical thinking."*
>
> — Teacher, Özel Çağdaş Fen Lisesi

Teachers converged on a redefinition of their own role: less time transmitting content, more time verifying, questioning and coaching, a shift several described as initially uncomfortable and ultimately liberating: “you feel you are doing less, until you notice the students are doing more.” A Romanian teacher noted that the ambassador model made students responsible to each other rather than to the grade book; her verdict became one of the most quoted lines of the project’s internal communications:

> *“It worked perfectly in practice. All the students got actively involved in the activities and developed their social, linguistic, AI and green skills effectively.”*
>
> — Teacher, Liceul Tehnologic „Ștefan Hell”

Two further narrative strands recur across the teacher corpus. For the teachers of “Ștefan Hell” Technological High School with mechanical and economic profiles, “green skills” was not an abstraction but a question their graduates would encounter in the labour market. One mechanical-subject teacher began systematically connecting maintenance topics with resource efficiency, and the later visit to the HAI aluminium factory reinforced this approach in front of his students: “For the first time, my students saw a factory visit and an environment lesson as the same lesson.” For the language teachers, EAIEN turned out to be an unplanned language project: the entire ambassador programme operated in English as a lingua franca, and an English teacher at Çağdaş described watching inhibited students become fluent under the pressure of real communicative need: “No speaking activity I can design reproduces the moment when a Romanian student asks you to explain your own poster and you simply must find the words.” The university partners contributed a different register: for Anadolu University and Universitatea Politehnica Timișoara, EAIEN tested university-designed training against the unforgiving standard of the secondary classroom: “Every slide we wrote, we had to imagine an eleventh-grader in November. It is the best editorial filter I have worked with”.

A final thread concerns the pedagogy of the field visit. In Eskişehir, the visit to the Integrated Solid Waste Disposal and Energy Generation Plant and the Sustainability Master Class at Eskişehir Municipality did not stand beside the peer training programme as excursions; they fed it: ambassadors photographed the sorting lines for their posters and quizzed the guides for statistics that reappeared in Kahoot questions that evening. In Sântana, the Observation Booklet formalised this stance: the school tour, the bicycle visits, and the aluminium factory were not things to see but data to collect. “*The difference,”* one Çağdaş teacher reflected, “*is whether students leave a factory with*

memories or with evidence. This project taught them – and, honestly, taught me – to leave with evidence."

THINK ABOUT IT

"Instead, they were thinking against the machine." Recall a moment when your students questioned a source instead of simply accepting it. What conditions (the task, the group roles, the audience, your own questions) made that moment possible, and how could you recreate them?

5.1.3 Success Stories and Personal Growth

Some of the project's most telling successes were unplanned. Midway through the programme, the teacher ambassador who had anchored the training at Çağdaş left the school – an example of the kind of ordinary institutional change that can undermine otherwise successful projects. Because the entire methodology existed in documented, transferable form (the *Teacher's Handbook*, the online course, the activity templates), a replacement teacher was trained and integrated without the programme losing a step. Colleagues later described her onboarding as the moment they understood why the project had insisted on writing everything in four languages: the knowledge lived in the materials and within the team, rather than in any single person.

The quantitative record is equally striking. Teacher satisfaction in the WP2 evaluation averaged 4.93 out of 5.00 across both schools. In the Eskişehir exchange feedback, all eight responding teachers selected "Strongly Agree" on every one of the eighteen items: a unanimous 5.00, which the task report describes as unprecedented. In Sântana, 97.8% of all teacher item responses were "Agree", with not a single "Disagree" in the dataset. Behind these numbers lies the achievement that teachers themselves considered most significant – the transformation they witnessed in their students:

> *"The most successful aspect of the program was students actively learning through peer education and developing greater environmental awareness."*
>
> — Teacher, Özel Çağdaş Fen Lisesi

The LTTA itself was an experience in cross-partner collaboration: a programme jointly developed by three institutions, each contributing a distinct area of expertise. Anadolu University contributed the open and distance learning architecture and quality framework, Universitatea Politehnica Timișoara brought technological and curriculum expertise, and Future Learning the learning design and platform thinking. Its virtual

format proved to be a professional learning experience in its own right. Teachers who would later facilitate blended activities had first been learners in a well-structured and well-run online course themselves. “We were students again”, one reflected, “and it made us gentler teachers”. When asked what the project had given them personally, teachers’ answers clustered around three interconnected forms of growth. The first was digital-professional growth: every teacher surveyed affirmed increased confidence integrating AI tools, and several had already begun using AI-supported material preparation in unrelated courses. The second was pedagogical growth: the project provided a live demonstration that students can take on far more responsibility than conventional structures allow. Engagement, several teachers noted, “significantly exceeded typical classroom levels”. The third was professional identity within a European dimension, a sense of professional exchange that extended beyond the boundaries of their own institutions and national contexts. As one Romanian teacher put it at the end of the Sântana mobility: “Our school has sent students abroad before. This is the first time we have sent knowledge abroad and received it back, improved.”

5.2 Student Engagement and Learning Outcomes

5.2.1 Testimonials and Student Perspectives

Forty-two students (twenty-one from each partner school) carried the title of Green Skills Ambassador through the project’s most demanding phases: a four-day training at home, an international exchange in Eskişehir, and a second mobility in Sântana. The first thing their testimony makes clear is what they valued most and it was not, primarily, the technology. Asked after the Eskişehir exchange to name the most valuable thing they had learned, a majority pointed to the human and relational dimensions: friendship, cultural understanding, and teamwork, ahead of technical learning. “Friendship” was the single most frequent word in the open-ended responses:

> *“No matter the culture, religion, everyone can get along with everyone and create beautiful connections.”*
>
> — Student, Liceul Tehnologic „Ștefan Hell”

> *“I learned that technology doesn’t just consume energy. When used correctly, it can help us create sustainable solutions and spread awareness more effectively across borders.”*
>
> — Student, Özel Çağdaş Fen Lisesi

The Sântana mobility, with its observation-based design, produced testimonials about seeing – ordinary scenes rendered extraordinary by attention: bicycles where students expected cars, waste separation performed as a matter of course. The Observation Booklet had given them a lens, and the testimonials show the lens working: “A memorable moment was observing how people used public transport and bikes instead of cars in daily life,” wrote one Turkish student; “environmental protection is not just about big global actions but also about small and consistent habits in everyday life,” concluded a Romanian peer. Several Ștefan Hell ambassadors, showing their own town to foreign peers, reported a double vision: pride in their community’s recycling discipline, and a newly critical awareness of its gaps. Several identified this double vision as the mobility’s deepest lesson.

Honesty requires that the record include its dissonant voices, and the project preserved them deliberately. A small minority of Romanian students expressed genuine scepticism about AI – one, asked how AI had helped, answered: “It didn’t, I won’t use AI” – and one Turkish respondent in Sântana selected “Disagree” on eleven of twelve items, a clear outlier against a 95.8% agreement rate. The partnership chose to read these voices as data: a student who declines to use AI after months of structured, critical engagement with it is arguably exercising precisely the evaluative autonomy that AI literacy education aims to produce. The goal was never universal enthusiasm; it was informed judgement.

Three ambassador trajectories illustrate the range of what the programme meant at the level of the individual. The reluctant presenter: a tenth-grade Çağdaş student who had never voluntarily spoken in front of a class took the visual editor role precisely because it promised a screen to hide behind; the rotation structure did not allow the hiding to last, and by the fifth Eskişehir session she was managing a restless middle-school audience through a Kahoot round in English. The local expert: a Ștefan Hell student from the school’s mechanical profile, for whom the international dimension initially seemed to belong to other people, found his turn in Sântana, fielding his Turkish teammates’ questions about his town’s recycling routines with growing authority; he now intends to pursue a technical career with an environmental dimension. The critical adopter: a Romanian student who arrived openly unimpressed by AI and called its first drafts “generic” but whose group’s poster went through more revision cycles than any other precisely because she refused to accept the machine’s draft as final, producing, by the supervising teachers’ joint judgement, among the strongest materials of the exchange. She remains a sceptic; she is also, by any functional definition, one of the most AI-literate students the project produced.

DISCUSS WITH COLLEAGUES

One student, asked how AI had helped, answered: "It didn't, I won't use AI."

1. Is a student's informed decision not to use AI a failure or a success of AI literacy education?
2. How would you tell the difference between informed scepticism and simple avoidance?
3. How do you include dissenting voices when you evaluate a project, rather than averaging them away?

5.2.2 Impact on Learning Motivation and Skills Acquisition

The project's feedback architecture traces the students' development across three measurement points: the ambassador training (WP2), the Eskişehir exchange (WP3 Task 1), and the Sântana mobility (WP3 Task 2). Taken together, these data describe a cohort whose engagement remained exceptionally high across a full academic year. The baseline was set by the ambassador training, where combined satisfaction reached 98.9%; students consistently cited group work, OER creation, and creative use of AI tools as their favourite activities. Sustainability awareness shows the clearest signal of development. Following the Eskişehir exchange, the Green Skills and Sustainability Awareness category achieved 4.22 out of 5.00, with the statement "I feel more responsible about environmental issues" receiving the highest score (4.40). This affective dimension is particularly significant because a stronger sense of personal responsibility is widely regarded in Education for Sustainable Development (ESD) as an important precursor of sustained behavioural change. After the Sântana mobility, 91.3% of respondents agreed they had gained a better understanding of green skills. Qualitative responses show that this understanding developed from an initially global and abstract conception towards more local and observable forms of practice. One student, for example, stated: "From Sântana, I'll apply using public transport and eco-friendly mobility in my school community". Such a response provides a concrete indication of students beginning to transfer project learning into their own contexts.

AI literacy followed a more nuanced trajectory. After Eskişehir the AI Tools and Material Development category averaged 4.08, with the statement "I understand both benefits and limitations of AI in education" receiving the highest score (4.15). This suggested that the project's emphasis on critical, rather than purely instrumental, engagement with AI had been internalised by participants. At the same time, the data revealed a meaningful school-level difference: Çağdaş students rated their confidence in using AI at 4.47, compared with 3.65 among Ștefan Hell students. Rather than being

treated as an inconsistency to be averaged away, this difference was identified in the task report as a useful design insight, leading to the recommendation that preparatory AI workshops be introduced in future iterations. Importantly, however, students' demonstrated ability to use AI in educational production was evaluated very positively. Teachers unanimously rated the AI-enhanced materials as being of good quality (5.00) and the integration of AI as fully effective (5.00). The soft-skill outcomes provided an especially strong point of convergence between teacher and student evidence. Teachers unanimously affirmed that the ambassador model fostered teamwork, communication, and leadership, while students identified peer training sessions as a key mechanism through which these skills developed. The statement "Preparing materials with the other school was valuable" received a score of 4.49, the highest score in its category. Similarly, 82.6% of Sântana respondents agreed that working in international teams had improved their communication and teamwork. This development occurred despite, and potentially partly because of, the language barrier, which students simultaneously reported as their greatest challenge. The need to communicate across linguistic and cultural differences therefore functioned not only as a constraint but also as an authentic context developing collaborative competence.

Perhaps the most theoretically significant finding is the students' own confirmation of the learning-by-teaching effect on which the cascade model is based. The statement "Teaching others deepened my understanding of sustainability" received an overall score of 4.31, rising to 4.74 among Çağdaş students. The open-ended responses give substance to these numbers: students described discovering during teaching sessions that they were unable to explain concepts they had previously assumed they understood. In terms of the project's conceptual framework, the ambassadors appear to have experienced generative processing first-hand; in more immediate terms, they recognised that explaining a concept to a younger learner exposed gaps in their own understanding. As one student put it, "you only really know it when a twelve-year-old asks you why." Two further outcomes, although not directly captured by the project's formal indicators, emerge consistently from the qualitative evidence: language development and digital citizenship. In terms of language, students described a progression from the initial difficulty and hesitation of the first mixed-team sessions to functional working fluency in English by the second mobility. Digital citizenship developed through practical engagement: ambassadors published materials under their own names, evaluated the accuracy of machine-generated claims, and discussed responsible uses of AI across linguistic and educational contexts in two languages. These experiences extended digital competence beyond technical proficiency towards questions of authorship, reliability, responsibility, and ethical use.

The impact also extended beyond the ambassador cohort itself. Trained teachers prepared forty-two ambassadors, who delivered seven rotation sessions in Eskişehir and four in Sântana, directly reaching 267 local students across the two countries. The cascade model therefore multiplied the reach of the initial training while simultaneously giving ambassadors an authentic opportunity to apply and consolidate what they had learned. Both participating principals indicated that the ambassador model would be repeated with new cohorts after the formal conclusion of the project, providing an early indication of institutional sustainability.

Motivation ultimately closes the circle. The single highest-scoring item in the entire Eskişehir survey was "The exchange was a meaningful learning experience overall" (4.56). In Sântana, 95.7% of respondents described the mobility as a valuable experience and the same proportion stated that they would recommend it. EAIEN appears not merely to have satisfied participants with the learning activities provided, but to have strengthened their willingness to engage in similar forms of collaborative, international, sustainability-oriented and technology-enhanced learning in the future.

5.3 Cross-Partner Experience Sharing

Cultural Exchange and Collaborative Learning

If the feedback data of EAIEN has a single unambiguous headline, it is this: in both mobilities, the cultural dimension outscored everything else. In Eskişehir, the Cultural Exchange and Overall Experience category achieved the highest student ratings of any category (4.47), with the narrowest gap between the two delegations. In Sântana, the highest agreement rate was recorded for the statement "gained new perspectives on cultural differences and similarities" (95.7%, including 100% of the Romanian students). The partnership's design choices deserve much of the credit. The exchanges were built not around parallel national teams politely presenting to one another, but around mixed Turkish–Romanian teams engaged in meaningful, consequential work together. In Eskişehir, students co-produced the actual peer training materials; in Sântana, they synthesised observation findings and co-created OER. Students could not complete their tasks without crossing the cultural boundary; and so they crossed it, repeatedly, until it stopped feeling like one. Around this structured collaboration, informal encounters further consolidated the learning. The Eskişehir week coincided with Ramadan, and the city tour, concluding with a shared dinner, became, according to many participants, the emotional hinge of the exchange. This was echoed in Sântana by a farewell dinner with the local community. Group chats formed in Eskişehir were still active in Sântana a

month later, and several ambassador friendships have continued online since then, an informal outcome that no indicator table had been designed to capture.

The dual-mobility architecture produced one genuinely interesting comparative finding. In Eskişehir, the host-school students rated nearly every dimension higher than their visiting peers (4.63 versus 3.88), suggesting a systematic "host advantage" plausibly rooted in the confidence that comes from familiar surroundings and routines. In Sântana, the pattern reversed: the Romanian students, now on home ground, showed stronger agreement on the cultural and overall experience items. The reversal provides support for the host-advantage hypothesis rather than indicating an inherent difference between the delegations, and it reinforces the value of the two-mobility design. Each cohort experienced both the confidence of hosting and the productive disorientation of being a guest, allowing the benefits of both perspectives to be distributed more equitably. The partnership regards this as a directly transferable lesson: whenever circumstances allow, do not design a single mobility; design a pair.

Collaborative learning operated between institutions as much as between students, and its machinery was deliberately unglamorous. A shared drive contained every material and its different language version, while regular online partner meetings gave school teachers a standing channel to the university-based designers. The feedback loop visibly worked in both directions. The schools' October request for more preparatory AI content reached the trainers before the November training, while lessons from Eskişehir concerning audience management and differences in attitudes towards AI were incorporated into the Sântana programme five weeks later. By the second mobility, teachers described the five institutions as functioning less like a consortium and more like departments of a single, distributed school. This sense of institutional collaboration was supported by practical tools and routines rather than by formal structure alone.

One artefact deserves singling out: the Green Ambassadors Observation Booklet. Its five dimensions – waste management and recycling, sustainable transportation, green spaces and urban nature, energy and buildings, and sustainable consumption – gave students from two education systems a common framework for observing the world and interpreting their surroundings. It functioned as a boundary object stable enough that a Turkish and a Romanian student completing it were undertaking essentially the same task, yet flexible enough to accommodate the distinctive realities of Eskişehir's metropolitan waste plant and Sântana's cycling culture. Now published among the project's open resources, the booklet is one of EAIEN's most readily replicable outputs. Its value lies precisely in its simplicity: any pair of schools in Europe could adopt it, adapt it to their own context, and use it as a shared starting point for cross-cultural observation, discussion and collaborative learning.

YOUR TURN

Observe Your Own School

Borrow the five dimensions of the Green Ambassadors Observation Booklet and spend one week looking at your own school or neighbourhood with fresh eyes. For each dimension, note one practice that already works and one gap you could address with your students.

Dimension	What already works	What could improve
Waste management and recycling		
Sustainable transportation		
Green spaces and urban nature		
Energy and buildings		
Sustainable consumption		

Choose the gap you noted most often. Could your students turn it into a short peer-training session or an open educational resource, as the EAIEN ambassadors did?



CHAPTER 6

Outputs and Innovations

Olivier Heidmann, Christina Taka

This chapter does two things. It describes what the EcoAI EduNetwork Initiative actually built: the platform, the course, the handbook, the training packs and the resources created by teachers and students. It also explains the reasoning behind the design decisions, because in educational materials the reasoning is usually the transferable part.

A word is also owed on the term “innovation”. What EAIEN did was to combine two agendas that European schools normally pursue in separate rooms: sustainability education and digital or AI competence. It also sought to shift students from consuming educational resources to producing them. Doing both at once and then publishing everything openly is where the partnership’s claim to originality reasonably sits.

The principal outputs of the partnership are summarised below before each is discussed in turn.

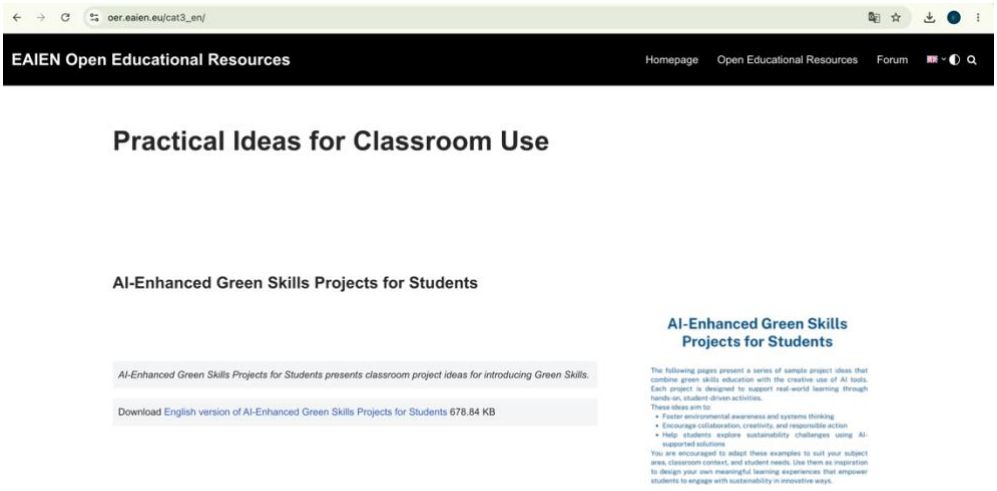
Table 6.1 Principal outputs of the EAIEN partnership.

Principal Outputs of the EAIEN Project
AI-Empowered Green Skills Education online course (LTTA / MOOC)
Teacher's Handbook
Student Training Pack (with Syllabus and Teacher Implementation Guide)
Green Skills OER Platform (with teacher- and student-created OER)
Project and Quality Management Handbook and Quality Tools
Experience Sharing Book (this volume)

6.1 Open Educational Resources (OER) Platform

6.1.1 Structure and Purpose of the OER Platform

The Green Skills OER Platform was developed under the leadership of Future Learning as the hub of the green skills education ecosystem the project set out to build. Its purpose is easy to state and surprisingly easy to get wrong: it is a working repository, not an archive of the project. An archive answers the question "What did this partnership do?" A repository answers the question "What can I use in my lesson on Thursday?" The two are organised differently, and the consortium chose the second.



That choice determined the structure. Resources are not filed by work package, activity number or partner, which is how project outputs are usually stored and one of the

reasons they are so rarely reused. They are organised by what a teacher needs to know before deciding whether to open them. Two streams of content sit side by side. The first consists of classroom materials created by teachers during and after the online course: the practical output of the training rather than a separate commissioning exercise. The second consists of resources produced by students in the Green Skills Ambassador Programme.

The argument against placing student work alongside teacher work was straightforward: student-produced material is uneven, and a platform intended for professional use should not ask teachers to sift through it. The argument in favour proved stronger. Students explaining a concept to other students occupy a register that almost no professionally produced material manages, and the unevenness is part of what makes it credible to the audience it is aimed at. The compromise adopted was to review student resources for factual accuracy and safety but not to polish them into an adult voice.

Two further principles apply across the platform. Everything is openly licensed under Creative Commons, so that use, adaptation and translation require no permission. Nothing sits behind a registration wall.

> THINK ABOUT IT
> An archive answers “What did this project do?”; a repository answers “What can I use in my lesson on Thursday?” Think about where your own school or project stores its teaching materials. Could a colleague find something usable for next week’s lesson in under five minutes?

6.1.2 Key Examples of Resources Developed

The resources fall into recognisable families, and it is more useful to describe these than to list titles, since the families are what another school would need to reproduce.

- **Integrated subject sequences.** Short teaching sequences that introduce a green competence inside a subject that already exists on the timetable rather than alongside it: an energy-audit investigation in physics, a life-cycle and cost analysis in the economic and technician streams, a data-handling task in mathematics built on locally collected consumption or waste figures, and argumentative writing in language lessons on a local environmental question. The design rule throughout was that the activity must also teach something the syllabus already requires.
- **AI-supported teaching materials.** Worked examples of using AI tools to differentiate a text for mixed-ability groups, to summarise or translate source material, and to visualise a dataset, each paired with an explicit verification step in

which students check the output against a measurement or a primary source. The verification step is not an add-on; it is the pedagogical point.

- **Student-produced explainers.** Short videos, infographics and slide sets created by student ambassadors, explaining a green skill or an AI concept to their peers.
- **Activity cards and templates.** Single-page classroom activities drawn from the Teacher's Handbook, formatted so they can be printed and used without further preparation.

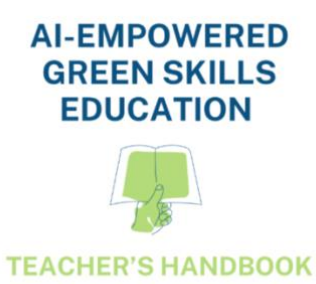
The Green Skills OER Platform therefore represents more than a collection of materials produced during the EAIEN project. Its main value lies in the way the resources are organised, reviewed and made available for continued use. By bringing together teacher-created classroom materials and student-produced resources, and by organising them around practical classroom needs rather than project structures, the platform was designed to support reuse, adaptation and further development. Together with the principles of open licensing and unrestricted access, these choices make the Green Skills OER Platform not only a record of what EAIEN produced, but a resource intended to remain useful beyond the lifetime of the project.

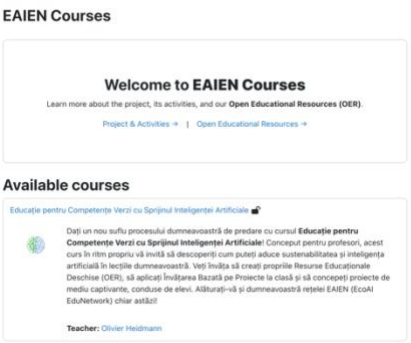
6.2 The Teacher's Handbook

6.2.1 Concept, Development and Pedagogical Foundations

The Teacher's Handbook was conceived as the durable companion to the online course. The reasoning was simple and slightly unfashionable: a great many teachers will never enrol in a MOOC, however good it is, and a course that exists only as a sequence of videos on a platform disappears the moment a colleague's attention moves elsewhere. A handbook can be held, annotated, photocopied, left in a staffroom, handed to a new teacher and used without a password or a stable internet connection. It travels differently, and it reaches different people.

Its development followed the course rather than preceding it. The AI-Empowered Green Skills Education course was built first, comprising twenty-one instructional videos together with teacher guides, practical classroom activities, interactive discussion boards and assessment elements, and covering AI literacy, green skills, AI tools for teaching, and the creation of open educational resources. The handbook then mirrored this content in each partner language while adding what a printed companion can offer that a video sequence cannot: consolidated practical guidance, classroom implementation examples, and material that can be consulted in the two minutes before a lesson rather than watched in sequence.





Five pedagogical commitments shaped the writing:

- **Integration rather than addition.** Green skills and AI literacy are presented as things to do inside existing subjects, not as a new subject competing for hours that do not exist.
- **Action competence.** The aim is not only that students understand an environmental problem but that they are able to act on one. Every substantial activity ends in something produced, measured, changed or communicated.
- **Critical AI literacy.** AI tools appear as objects of scrutiny as well as instruments of work. Students are asked what a system is for, how its answer was assembled, and what it costs to run, not only how to prompt it.
- **Inquiry and project-based learning.** Investigation of a real local situation is preferred throughout to the transmission of general environmental facts, which students in every partner country have heard before.
- **Accessibility.** Material is offered in visual, textual and interactive forms so that teachers with different levels of equipment and digital confidence can all find a way in.

The register of the handbook was a deliberate choice. It is written in a practical rather than a scholarly voice and theory appears only where it justifies a practice a teacher is being asked to adopt. The practical register prevailed, on the argument that most of the handbook's readers are teachers preparing a lesson for high-school students.

6.2.2 Translation and Adaptation into the Project Languages

The handbook was published in English, Turkish, Romanian and Greek. The English text served as the reference version, but the other three are not translations in the narrow sense. Examples, units of measurement, curricular references, institutional vocabulary and the names of the bodies teachers actually deal with were localised, because a

Turkish teacher reading about an English inspection regime and a Romanian teacher reading about Turkish curriculum documents will both conclude, correctly, that the material was not written for them.

This approach to translation and adaptation was important to the project's wider objective of transferability. The intention was not simply to make the same resource available in four languages, but to ensure that teachers could recognise their own educational context in the examples and guidance provided. Translation, localisation and intercultural dialogue therefore functioned as an essential part of usability rather than a final editorial step.

6.2.3 Reflections from Teacher Users

The handbook and the course were piloted before publication by volunteer teachers from Frigya Eğitim ve Kültür Derneği, an association of high-school teachers in Eskişehir that joined the project as an associate partner. Its members enrolled in the course of their own accord, worked through it, and provided the feedback on which the final revisions were based. Those revisions improved pedagogical coherence, clarity of language, and accessibility. The value of piloting with teachers who had no stake in the project is difficult to overstate: consortium partners are, by construction, the least reliable reviewers of their own materials.

Ten teachers, five from each partner high school, drawn deliberately from different subject areas, subsequently completed the full course and were certified as Green Skills Teacher Ambassadors. The evaluation survey conducted afterwards was strongly positive: participants described the course as engaging, well-structured and relevant to their classroom practice, and singled out the practical activities, the AI-supported examples, and the emphasis on integrating green skills across different subjects rather than confining them to science.

Taken together, the development and piloting of the Teacher's Handbook demonstrate the project's intention to bridge the gap between professional learning and everyday classroom practice. The handbook was not designed simply to document the content of a course, but to make its ideas usable, adaptable, and transferable by teachers in different educational systems and contexts, as the implementations in Türkiye and Romania have shown. Its practical orientation, multilingual adaptation, and testing with teachers outside the core consortium all contributed to the same objective: creating a resource that could be useful for other projects, in other classrooms and other countries.

6.3 Case Studies of Implementation

6.3.1 Classroom Experiences from Partner Schools

The two partner high schools are genuinely different institutions, and observing the same materials being used in both was among the most informative aspects of the project.

Özel Çağdaş Fen Lisesi is a general-education science high school in a system organised around high-stakes national examinations. The dominant constraint is not equipment or teacher willingness but time that is already spoken for. Activities were adopted here in almost exact proportion to how well they could be defended as also teaching examinable content. A data-handling sequence in which students collected consumption figures from their own building, analysed them, and used an AI tool to visualise and interrogate the results survived and was repeated not primarily because it concerned sustainability, but because it taught statistical reasoning the syllabus required anyway. Activities that stood outside that logic were tried once and quietly not repeated. This is not a criticism of the teachers; it is an accurate description of the incentives they work within.

Liceul Tehnologic „Ștefan Hell" Sântana is a technical high school in western Romania with mechanical, economic and social science profiles. Teaching is partly in German, and the school serves a multi-ethnic community in which a substantial proportion of students commute from surrounding rural areas. Green skills read very differently here. Abstract environmental awareness had limited traction; efficiency, maintenance, materials, waste and cost had a great deal, because these are the vocabulary and practical concerns of the trades the students are preparing to enter. The most successful adaptations connected green competence directly to employability: what an employer will expect a technician to know about energy use, material choice and regulatory compliance within five years. Students who had shown little interest in climate as a topic engaged closely with the same content when it was presented as professional competence.

The comparison is itself the finding, and it is the strongest evidence the project produced for the way its materials were designed. The two schools used substantially the same resources for entirely different reasons. A resource that carries only one rationale, one that works only in a science-stream classroom, or only in a vocational one, is not transferable, whatever its quality. The granularity of the handbook and the platform, in which a teacher can take one unit and supply the rationale locally, is what made both readings possible.

Both schools also introduced the ambassador structure, which functioned as an implementation mechanism rather than a ceremony. Certified teacher ambassadors

from different departments carried the approach into subjects where it would not otherwise have appeared, while twenty-one student ambassadors per school led sessions for their peers. During the mobility activities, cross-border peer training extended this further. In the Romanian local observation activity peer-training sessions delivered with the visiting students reached ninety-six local students.

DISCUSS WITH COLLEAGUES

Two very different schools used the same resources for entirely different reasons: one for examinable content, the other for employability.

1. What rationale would make a green skills activity "defensible" in your institution?
2. Which of your existing lessons could host a green skills or AI literacy unit without adding hours to the timetable?

6.3.2 Student Engagement and Feedback

Feedback was collected systematically after the mobility and training activities from both teachers and students. Teacher responses were strongly positive, with agreement at 97.8% across the evaluated items. Student agreement stood at 90.4% overall, rising to 95.8% when one clearly anomalous set of responses was set aside: a participant who selected the negative option on almost every closed item while writing warmly positive answers to the open questions. This is a pattern familiar to anyone who has administered a survey to adolescents and one the consortium chose to report rather than quietly delete.

One methodological point belongs in a book intended to be useful to other projects. The two activities did not use the same response scale: the first employed a five-point scale and the second a three-point scale, which makes direct numerical comparison between them unsound. The consortium accordingly reported agreement rates rather than means and stated the difference openly. The lesson is inexpensive to learn from someone else's experience: settle the evaluation instrument before the first activity, not between the first and the second.

The qualitative pattern across both sets of responses is more interesting than the percentages. Engagement was consistently highest where students carried production responsibility: where they made a resource, prepared a session, or explained something to peers who would notice if they got it wrong. Students were also markedly less deferential towards AI tools than the adults around them anticipated, and returned repeatedly to questions of accuracy, ownership and consequence: who built this, how does it know, and who benefits. Several teachers reported being asked questions they

could not answer, which the consortium regards as one of the more encouraging findings in the project.

6.4 Multilingual and Cultural Dimensions

6.4.1 Translation Processes and Multilingual Deployment

Almost every major output of the partnership exists in four languages: the website, the Teacher's Handbook, the student training materials, the OER platform and the newsletters in English, Turkish, Romanian and Greek. The online course was delivered in English, with supporting material localised during the WP2 LTTA implementation phase. Responsibility for linguistic quality was distributed rather than centralised, with each partner accountable for the versions its own community would use.

It is worth being blunt about the cost, because applications tend to treat multilingual publication as a formatting step and it is nothing of the kind. It multiplies the number of files under version control, so that a late correction to one paragraph becomes four corrections in four places. It can delay publication to the pace of the slowest language. And it also makes single-point quality assurance impossible, since no one person in the consortium could read every version. Three mechanisms kept this manageable: a shared terminology list agreed early and applied consistently, translation by the partner who would use the version, and a final structured quality check against a common checklist before anything was published.

Terminology proved to be the genuine difficulty, more than syntax or style. Terms such as "green skills", "competence", "sustainability" and "AI literacy" do not have fully settled equivalents across Turkish, Romanian and Greek educational discourse. Some candidate terms carry policy associations that a teacher may perceive as bureaucratic; others sound like imported jargon and subtly signal that the material is a translation of something produced elsewhere. These decisions therefore had to be taken once, recorded, and then applied everywhere throughout the outputs, because inconsistent terminology across a set of resources can do more damage than an imperfect choice applied consistently.

6.4.2 Cultural Adaptation of Educational Materials

Adaptation went beyond language to address a set of assumptions that educational materials carry without stating them explicitly. Examples had to be exchanged, units of measurement and cost adjusted, curricular and legal references replaced, and images reconsidered. More significantly, several tacit assumptions about the classroom itself had to be surfaced and negotiated: how much independent decision-making a student

is expected to exercise, how a teacher's authority is framed when students are asked to teach, whether extended group work is a normal or an exceptional format, and which environmental topics are locally uncontroversial and which are not. None of these questions had a single answer across three countries, and pretending otherwise would have produced material that worked properly in only one of them.

If the partnership were advising a future consortium on one point, it would be this: treat translation as an activity with a timeline, not as a task to be completed after the real work is finished. Everything that went well linguistically in this project went well because it was planned; everything that caused difficulty did so because it was left until the end.

Taken together, the outputs described in this chapter amount to a modest but coherent claim. The partnership did not solve the problem of how to teach green skills in an age of intelligent machines. It built a set of tools that two very different schools could both use, published them openly in the languages of the people expected to use them, gave students a productive rather than a receptive role in creating them, and documented honestly what happened when the materials were put into practice. Whether that constitutes innovation is for others to decide; that it constitutes something usable, the consortium is reasonably confident.

YOUR TURN

Adapt One Open Resource

1. Visit the Green Skills OER Platform (oer.eaien.eu) and choose one resource that fits a lesson you already teach.
2. Adapt it: replace the example with a local one, adjust units and costs, and link it to a learning outcome in your own curriculum.
3. List everything you had to change. That list is your personal localisation checklist.
4. Consider sharing your adapted version under the same open licence.

What I changed:



CHAPTER 7

Visibility, Dissemination and Sustainability

Hariklia Tsalapata, Christina Taka

The EcoAI EduNetwork Initiative (EAIEN) was conceived not merely as a project aimed at producing innovative educational resources, but as the foundation of a growing European community of practice committed to integrating green skills, environmental sustainability, artificial intelligence (AI), and Open Educational Resources (OER) into secondary education. Throughout the project, dissemination was regarded as an educational process in itself rather than a communication activity taking place only after the completion of project outputs. Every teacher trained, every student ambassador engaged, every educational resource developed, and every international exchange organised simultaneously contributed to both the implementation of the project and the dissemination of its educational philosophy.

This understanding reflects current European approaches to knowledge mobilisation, which recognise that educational innovation achieves sustainable impact only when dissemination is embedded throughout the project lifecycle. Rather than relying on one-way communication, dissemination within EAIEN became a continuous process of dialogue, collaboration, reflection, and knowledge exchange among teachers, students, researchers, educational institutions, policymakers, and local communities. Equally important was the project's commitment to sustainability. Within EAIEN, sustainability extends beyond preserving educational materials or maintaining a project website after the end of funding. It refers to the long-term ability of schools, teachers, students, and educational organisations to continue using, adapting, improving, and sharing the project's methodologies and resources independently. This vision is closely aligned with the Erasmus+ Programme priorities, the European Green Deal, the Digital Education Action Plan, the GreenComp Framework, and UNESCO's recommendations on Open Educational Resources, all of which advocate accessible, collaborative, inclusive, and lifelong learning.

Consequently, dissemination and sustainability were designed as complementary processes. Dissemination ensured that project knowledge reached diverse audiences, while sustainability focused on enabling these audiences to continue benefiting from and contributing to the EcoAI educational ecosystem after the project's completion.

7.1 Dissemination Strategies

Dissemination in EAIEN was planned rather than improvised. A Dissemination Plan was prepared at the beginning of the project, setting out objectives, key messages, the division of responsibility among partners, and the indicators against which progress would be judged. Coordination of the plan sat with Future Learning, whose background in digital learning design made it a natural custodian of the project's public face, while every partner carried defined tasks within it.

Two structural decisions shaped everything that followed. The first was a unified visual identity developed early and applied consistently. Across five institutions and three countries, this is less trivial than it sounds: without it, a project's outputs quickly come to look like the separate work of separate organisations, and the sense of a single initiative dissolves. The second was that dissemination outputs passed through quality review before publication. The deliverables were checked by the consortium or the Quality Assurance Committee against Erasmus+ visibility and communication requirements, factual accuracy, language quality, and coherence with the visual identity. Dissemination statistics and partner updates were then reviewed at regular

Steering Committee meetings, which turned communication from a series of well-intentioned individual gestures into a monitored process with feedback loops.

7.1.1 Dissemination as Knowledge Exchange

The dissemination strategy developed for EAIEN was guided by the principle that educational innovation acquires value only when it becomes shared knowledge. Rather than adopting a traditional dissemination model based solely on presenting project results to external audiences, EAIEN promoted reciprocal knowledge exchange among consortium members and diverse stakeholder groups.

Teachers contributed classroom experiences that informed the continuous refinement of educational resources. Students became active co-creators of AI-enhanced Open Educational Resources through the Green Skills Ambassador Programme. Universities contributed scientific expertise, research methodologies, and pedagogical guidance, while policymakers and educational authorities participated in discussions concerning the future integration of green skills and AI literacy within educational systems. This collaborative approach transformed dissemination into a dynamic process of co-creation, enabling project outputs to evolve through continuous feedback and shared experiences. Dissemination therefore became an essential component of educational innovation rather than a simple communication obligation.

7.1.2 Digital Visibility and Online Communication

Digital communication constituted the backbone of the EAIEN dissemination strategy, recognising that teachers, students, researchers, and educational professionals increasingly access information through online environments. To ensure continuous visibility and accessibility, the consortium established an integrated digital communication ecosystem combining a dedicated project website, social media platforms, newsletters, and multimedia communication resources.

Project Website

The EAIEN project website serves as the central communication hub and the primary repository of project information and educational resources, published in all four project languages: English, Turkish, Romanian and Greek and updated throughout the project's lifetime. Beyond introducing the project's objectives, consortium partners, work packages, and activities, the website provides open access to all publicly available project outcomes.

Visitors can access the Teacher's Handbook, Open Educational Resources, newsletters, dissemination materials, policy recommendations, videos, reports, and the Experience Sharing Book. News articles and regular updates allow stakeholders to follow

project developments throughout its implementation, while downloadable resources ensure that educational materials remain freely accessible after the project's completion.

The website also enhances transparency by documenting project milestones, consortium meetings, training activities, student exchanges, dissemination events, and evaluation results. In this way, it functions not only as an information portal but also as a permanent digital archive supporting the long-term sustainability of project outcomes.

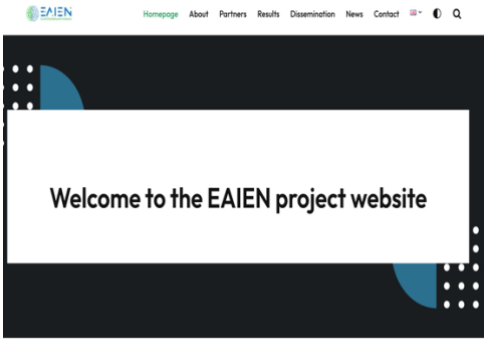
Social Media Campaign

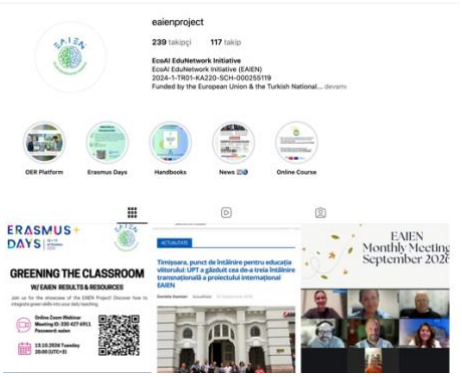
Social media represented one of the most effective tools for increasing the visibility of EAIEN among educational professionals, students, environmental organisations, policymakers, and the wider public. Dedicated project accounts on Facebook, Instagram, and LinkedIn enabled the consortium to communicate project milestones, announce events, disseminate educational resources, and showcase examples of good practice throughout the project's implementation. Instagram proved the most engaging channel and became the project's principal public-facing presence, speaking mainly to teachers and students through visual, concrete content. Facebook produced the highest raw view counts and connected effectively with local communities and parents. LinkedIn, established for professional and institutional visibility, reached researchers, education professionals and institutional stakeholders: a smaller audience, but a disproportionately influential one when the objective is institutional adoption rather than general awareness.

A coordinated communication plan ensured regular publication of engaging content across all partner countries. Posts included photographs from transnational meetings, Learning, Teaching and Training Activities (LTTA), Green Skills Ambassador activities, peer exchange visits, classroom implementation, environmental initiatives, interviews with teachers and students, educational videos, promotional animations, infographics, and testimonials.

The visual nature of social media enabled the consortium to present complex educational concepts – including artificial intelligence, Open Educational Resources, and green skills – in accessible formats suitable for diverse audiences. Interactive communication further encouraged comments, discussions, sharing of experiences, and collaboration among educators beyond the immediate partnership.

These platforms created online communities where teachers could discover innovative teaching practices, students could celebrate sustainability initiatives, and stakeholders could remain continuously informed about project progress.





Project Newsletters

To maintain continuous communication with stakeholders throughout the project's implementation, the consortium developed a series of four digital newsletters, published every six months in all partner languages. The multilingual approach ensured that teachers, students, educational institutions, policymakers, and other interested stakeholders across the participating countries could access project information in their native language, thereby increasing both accessibility and engagement.

Rather than functioning solely as periodic project updates, the newsletters were conceived as a knowledge-sharing tool designed to support the dissemination of good practices, educational resources, and practical experiences emerging from the project. Each edition documented the progress of project activities, introduced newly developed educational materials, presented consortium achievements, and informed readers about upcoming training activities, conferences, multiplier events, and other dissemination opportunities. Special sections showcased teacher reflections, student testimonials, Green Skills Ambassador activities, international mobility experiences, classroom implementation examples, and highlights from the project's Open Educational Resources platform.

The consortium made a deliberate editorial choice in the design of the newsletters. Instead of focusing primarily on internal project milestones – such as consortium meetings, administrative progress, or completed deliverables – the content was structured around the value it could provide to readers. While project management achievements are essential for monitoring and reporting purposes, they offer limited relevance to educators seeking practical ideas for their teaching practice. Consequently, each newsletter emphasised transferable knowledge, innovative teaching approaches, examples of classroom application, and resources that teachers and schools could immediately use or adapt within their own educational contexts.

This user-centred communication strategy transformed the newsletters from institutional reports into practical dissemination instruments that encouraged continued engagement with the project. By presenting authentic classroom experiences, success stories, and concrete educational resources, the newsletters fostered a sense of community among stakeholders while promoting the wider adoption of EAIEN's methodologies and educational philosophy. As a result, they served not only as a mechanism for communicating project progress but also as an important means of sustaining dialogue, inspiring educational innovation, and maintaining stakeholder engagement throughout the entire project lifecycle and beyond.

> THINK ABOUT IT
> Instagram, Facebook, LinkedIn and the newsletters each reached a different audience. Map your own audiences (teachers, students, parents, researchers, policymakers) to the channels you use. Which audience are you currently not reaching, and which single channel would reach them best?

7.1.3 Conferences and External Presentations

Academic and professional dissemination proceeded on two tracks that reach genuinely different audiences. The consortium presented the project at several international and national conferences. The presentations were accompanied by conference papers, which enter a record that persists, becomes citable, and connects the project to a research conversation that will continue long after the funding ends.

The second track reached the people who might actually use the outputs. Özel Çağdaş Fen Lisesi introduced the project and its approach through an online webinar; Liceul Tehnologic „Ștefan Hell" Sântana showcased it at a regional school fair, attracting interest from other educational institutions in the area; and the consortium registered events for Erasmus Days, using an existing European moment of visibility rather than trying to manufacture one. Neither track substitutes for the other, and the consortium deliberately ensured that both universities and schools presented. University papers carry authority with researchers and ministries; a teacher describing what happened in her own classroom carries authority with other teachers. Projects that disseminate only through the academic channel tend to be well documented and little used.

The multiplier event served as the culminating dissemination act of the partnership. Hosted in Türkiye, it brought together educators, school leaders, policymakers and professionals for a day of presentations, demonstration of the OER platform, and structured discussion of what the partnership had learned. Its purpose was not to report

results to an audience but to hand them over: every session was designed so that participants left with something they could use or pass on.

7.1.4 Educational Dissemination through Open Educational Resources

One of the defining characteristics of EAIEN's dissemination strategy is its emphasis on Open Educational Resources as both educational outputs and dissemination instruments. All resources are openly licensed, allowing educators to retain, reuse, revise, remix, and redistribute materials according to local educational needs. This openness encourages continuous improvement of educational content while extending the project's impact far beyond the original consortium. The platform therefore becomes a living educational ecosystem that supports continuous professional development, collaborative knowledge creation, and lifelong learning, reflecting the OER-enabled pedagogy introduced in Chapter 3.

7.1.5 Dissemination Materials

To ensure a coherent visual identity across all partner countries, the consortium developed a comprehensive communication toolkit supporting dissemination activities throughout the project. The dissemination package includes the project logo and branding guidelines, promotional flyers, posters, roll-up banners, newsletters, brochures, infographics, presentation templates, promotional videos, digital communication resources, press releases, social media graphics, certificates, and branded materials used during conferences, workshops, Learning, Teaching and Training Activities, multiplier events, and stakeholder meetings. These materials contribute not only to the professional presentation of EAIEN but also strengthen project recognition, reinforce the European identity of the consortium, and ensure compliance with Erasmus+ visibility requirements.

Table 7.1 EAIEN dissemination materials and points of access.

Material / Output	Where to find it
Project website (central hub)	www.eaien.eu
Green Skills OER Platform	oer.eaien.eu
AI-Empowered Green Skills Education course (LTTA / MOOC)	course.eaien.eu & The Open University's OpenLearn Create (OLC) platform
Teacher's Handbook	Project website and OER Platform
Student training pack and Ambassador guide	Project website and OER Platform
Promotional video	Project website and social media channels

Material / Output	Where to find it
Newsletters	Project website; News; distributed by email
Social media channels	Instagram, Facebook and LinkedIn; all linked from the project website
Experience Sharing Book	Project website and OER Platform

The most important policy governing all these materials was open licensing. All finalised outputs were published under Creative Commons licences, which means that any teacher or school may use, adapt and translate them without seeking permission from anyone. The consortium regards adaptation as the point rather than as a tolerated side effect. A unit rewritten for a different curriculum, a different subject or a different language is evidence that the material was worth having, not a departure from an original that needed protecting.

DISCUSS WITH COLLEAGUES

1. Should dissemination be judged by how many people saw a result or by how many people used it? How could you measure use?
2. Who in your institution carries authority with teachers, and who with researchers or ministries? Are both involved in sharing your results?

7.2 Sustainability of the EcoAI EduNetwork

The long-term value of the EcoAI EduNetwork Initiative (EAIEN) extends far beyond the formal duration of the Erasmus+ project. While dissemination ensures that project results reach diverse audiences, sustainability ensures that these results continue to generate educational, institutional, and societal impact long after the project's completion. From the earliest stages of project planning, sustainability was considered a core design principle rather than a final project activity. Consequently, every work package, educational resource, training activity, and collaborative initiative was developed with future usability, adaptability, and scalability in mind.

The sustainability strategy of EAIEN reflects the project's overarching vision of establishing a permanent educational ecosystem where artificial intelligence, green skills, and Open Educational Resources (OER) continue to support innovative teaching and learning across Europe. Rather than creating isolated project outputs, the consortium sought to establish structures, professional networks, and educational practices capable of evolving independently within schools, universities, and educational organisations.

This approach aligns closely with the objectives of the Erasmus+ Programme, the European Green Deal, the Digital Education Action Plan 2021–2027, the GreenComp European Sustainability Competence Framework, and the UNESCO Recommendation on Open Educational Resources, all of which emphasise long-term institutional capacity building, digital transformation, open access to knowledge, and lifelong learning. By embedding these principles into every aspect of project implementation, EAIEN contributes to sustainable educational innovation capable of supporting future generations of educators and learners.

The sustainability of the EcoAI EduNetwork is based on several complementary dimensions, including the continued availability of educational resources, institutional adoption of project methodologies, the maintenance of international collaborative networks, the continuation of student-led initiatives, and the project's contribution to European educational policy and practice.

7.2.1 Long-Term Availability of Educational Resources

Whether an educational resource survives its funding period is decided largely by choices made while it is being built, not by good intentions expressed at the end. Five such choices shaped the EAIEN outputs.

- **Open licensing.** All finalised outputs were published under Creative Commons licences. Any teacher or school may use, adapt, translate and redistribute them without permission, correspondence, or acknowledgement beyond attribution. Nothing is locked behind an institutional login.
- **Multilingual availability.** Core outputs exist in English, Turkish, Romanian and Greek, which removes the single most common barrier to reuse by teachers who do not work in English.
- **Hosting that does not depend on the project.** The online course sits in a public course pool (The Open University's OpenLearn Create platform and the project's own Moodle) and the Green Skills OER Platform has an agreed line of responsibility for its upkeep for five years after the funding closes.
- **Format diversity.** Materials combine visual, textual and interactive elements so that they can be used across different levels of equipment and digital confidence. A school with one projector and unreliable connectivity should still be able to run most of what is offered.
- **Granularity.** The materials are structured so that a teacher can take a single unit without adopting an entire programme. The realistic unit of adoption in a secondary school is one lesson, not one framework, and outputs that demand all-or-nothing commitment are usually met with nothing.

The Green Skills OER Platform is the hub through which most of this reuse is intended to flow. It hosts the classroom materials created by teachers during the training course alongside the resources produced by students in the Green Skills Ambassador Programme. Its function after the project is not to preserve EAIEN as an archive but to let another school assemble its own version: to browse what a technical high school in Romania and a science high school in Türkiye actually made, take what fits, and leave the rest.

The Teacher's Handbook plays a complementary role. It was written as a standalone artefact rather than as project documentation, so that a teacher who encounters it with no knowledge of EAIEN can still use it from the first page. This distinction matters more than it appears: a great deal of project output is written for people who already know the project, and is therefore useless to precisely the audience the project was funded to reach.

7.2.2 Institutional Adoption and Capacity Building

One of the fundamental objectives of the EcoAI EduNetwork Initiative (EAIEN) has been to strengthen the capacity of educational institutions to integrate green skills, artificial intelligence (AI), and Open Educational Resources (OER) into everyday teaching and learning practices. The consortium recognised that the long-term sustainability of educational innovation depends not only on preserving project outputs but, more importantly, on empowering schools and educators to adopt, adapt, and further develop the project's methodologies independently. Sustainable educational change occurs when innovative practices become embedded within institutional structures rather than relying solely on the commitment of individual teachers.

The Learning, Teaching and Training Activities (LTTA) played a pivotal role in achieving this objective. Through the international training programme, teachers acquired both theoretical understanding and practical competencies related to AI-supported pedagogy, sustainability education, instructional design, and the effective use of Open Educational Resources. Beyond acquiring new knowledge, participants developed the confidence to experiment with innovative teaching approaches, integrate interdisciplinary green skills into their classrooms, and act as facilitators of educational innovation within their schools.

Following the completion of the training activities, these educators assumed the role of Green Skills Teacher Ambassadors, becoming multipliers of knowledge within their institutions. By organising internal workshops, mentoring colleagues, participating in professional learning communities, and collaboratively developing lesson plans, they contribute to the continuous professional development of teachers who were not directly involved in the project. This multiplier effect considerably extends the project's

reach while strengthening institutional resilience, pedagogical innovation, and collaborative learning cultures.

The most durable form of sustainability, however, is institutional rather than individual. Institutions continue to evolve long after individual staff members move to different positions, retire, or change professional roles. For this reason, EAIEN sought to integrate its methodologies into organisational planning and long-term educational strategies rather than limiting them to isolated classroom initiatives. Within the consortium, this objective has already materialised in several concrete ways. Özel Çağdaş Fen Lisesi (Türkiye) and Liceul Tehnologic „Ștefan Hell" Sântana (Romania) have incorporated project results into their school development plans and teacher professional development strategies, ensuring that the project's educational approaches will continue to guide future teaching practices and institutional priorities. Embedding project outcomes within official school planning documents significantly increases the likelihood that these innovations will be maintained, periodically reviewed, and further developed over time.

Similarly, the higher education partners – Anadolu University and Universitatea Politehnica Timișoara – have integrated elements of the project into their teacher education programmes, research activities, and academic agendas. This enables future generations of pre-service and in-service teachers to become familiar with AI-enhanced sustainability education while supporting further research on innovative pedagogical practices. Future Learning, as the project's educational technology partner, has likewise incorporated the methodologies and learning design principles developed during EAIEN into its broader portfolio of digital learning and instructional design practices, extending the project's influence beyond the consortium itself.

An equally important mechanism supporting institutional adoption is the Green Skills Ambassador Programme. Rather than concentrating expertise within a small number of teachers, the project deliberately established a distributed model of leadership. Ten teachers – five from each participating secondary school and representing different subject disciplines – completed the international training programme and were certified as Green Skills Teacher Ambassadors. In parallel, twenty-one students from each school were selected and trained as Green Skills Ambassadors, forming interdisciplinary teams capable of promoting sustainability initiatives and supporting their peers.

The interdisciplinary composition of these ambassador teams was a deliberate strategic decision. Green skills and sustainability education should not remain confined to science or environmental studies but should instead permeate multiple curriculum areas, including technology, mathematics, social sciences, languages, and the arts. By distributing expertise across different subjects and involving both teachers and students, the project created organisational resilience. Educational innovation

therefore becomes less vulnerable to curriculum changes or staff turnover, as knowledge and responsibility are shared among multiple actors within each institution.

Based on the experience gained during implementation, the consortium identified several practical recommendations for institutions wishing to adopt the EAIEN approach. Rather than attempting large-scale curriculum reform from the outset, schools are encouraged to begin with a limited number of subjects or learning units, gradually expanding implementation as confidence and expertise grow. Appointing a dedicated project coordinator, allocating sufficient planning time, embedding activities within institutional development plans, and training interdisciplinary teams of teachers have proven to be effective strategies for ensuring continuity. Equally important is the active involvement of students through ambassador programmes, as empowering young people to take responsibility for sustainability initiatives strengthens ownership, peer learning, and long-term engagement. Finally, the consortium encourages schools and educational organisations interested in adopting the EAIEN model to maintain contact with the project partners, recognising that the EcoAI EduNetwork has established an open and collaborative European community that remains committed to sharing expertise, supporting innovation, and promoting sustainable education beyond the lifetime of the project.

7.2.3 Continuation of the Green Skills Ambassador Network

One of the most innovative elements of the EAIEN project is the Green Skills Ambassador Programme, which positions students as active contributors to educational innovation rather than passive recipients of knowledge. Sustainability within this component is achieved by establishing a self-reinforcing model of peer learning and student leadership.

Throughout the project, Green Skills Ambassadors acquire knowledge and practical experience in sustainability, environmental responsibility, artificial intelligence, and digital content creation. Beyond participating in project activities, ambassadors become role models within their schools, promoting environmentally responsible behaviour and encouraging their peers to engage in sustainability initiatives.

The consortium envisages that participating schools will continue supporting Green Skills Ambassador activities after the project's conclusion. Former ambassadors can mentor new student cohorts, organise awareness campaigns, coordinate environmental projects, facilitate peer-learning workshops, and contribute to the continuous development of educational resources. Such intergenerational knowledge transfer ensures that environmental awareness becomes embedded within school culture rather than remaining limited to the duration of the project.

Furthermore, the international relationships established among student ambassadors during mobility activities and peer exchanges provide opportunities for continued intercultural dialogue and collaboration, reinforcing European citizenship and global environmental responsibility.

7.2.4 Sustaining International Partnerships and Communities of Practice

The collaborative relationships established throughout EAIEN constitute one of the project's most valuable long-term outcomes. Bringing together universities, secondary schools, educational organisations, and researchers from different European countries has fostered mutual learning, trust, and professional cooperation that extend well beyond the formal project period.

These partnerships provide a solid foundation for future Erasmus+ initiatives, collaborative research projects, teacher exchanges, joint curriculum development, and the creation of additional Open Educational Resources addressing emerging educational challenges. The networks established during the project facilitate continuous exchange of expertise, enabling institutions to learn from one another while adapting innovative practices to diverse educational contexts.

Beyond the consortium itself, EAIEN has contributed to the formation of broader communities of practice involving teachers, school leaders, researchers, educational authorities, environmental organisations, and digital education specialists. These communities promote continuous dialogue concerning sustainability education, responsible AI use, educational innovation, and digital transformation, ensuring that project outcomes remain relevant within evolving educational landscapes.

7.2.5 Policy Impact and Contribution to European Educational Priorities

The sustainability of EAIEN is further strengthened through its close alignment with major European educational and sustainability frameworks. Throughout the project, educational activities and resources were designed to support the objectives of the European Green Deal, the Digital Education Action Plan, GreenComp, DigCompEdu, and UNESCO's frameworks for artificial intelligence in education and Open Educational Resources.

By translating these policy priorities into practical classroom methodologies, EAIEN demonstrates how European educational strategies can be implemented within everyday teaching practice. The project therefore serves not only as a provider of educational resources but also as a practical model for schools seeking to address the twin green and digital transitions.

The project's recommendations, case studies, and evaluation findings provide valuable evidence for policymakers, curriculum developers, and educational authorities

interested in strengthening sustainability education through innovative pedagogical approaches. As educational systems increasingly recognise the importance of environmental literacy, digital competence, and responsible AI use, EAIEN offers transferable practices that may inform future curriculum reforms, teacher education programmes, and national educational strategies.

7.2.6 Future Development Opportunities

Although the formal implementation period of EAIEN has a defined endpoint, the project establishes numerous opportunities for future development. Emerging technologies, evolving sustainability challenges, and changing educational needs will continue creating demand for innovative teaching approaches that combine environmental responsibility with digital competence.

The consortium anticipates that the EcoAI EduNetwork will continue expanding through new Erasmus+ projects, strategic partnerships, research collaborations, teacher professional development initiatives, and international educational networks. Future developments may include the integration of emerging AI technologies into the OER Platform, the development of advanced teacher training programmes, expansion of the Green Skills Ambassador model to additional educational levels, and increased collaboration with industry, environmental organisations, and public authorities.

In this way, EAIEN should be viewed not as a completed project but as the starting point of an evolving European educational ecosystem capable of responding to future societal, environmental, and technological challenges.

7.2.7 A Sustainable Legacy for European Education

Ultimately, the sustainability of the EcoAI EduNetwork Initiative lies not only in the resources it has produced but also in the educational culture it seeks to promote. By empowering teachers, engaging students as active creators of knowledge, encouraging international collaboration, embracing openness through Open Educational Resources, and demonstrating the responsible use of artificial intelligence for environmental education, EAIEN contributes to a lasting transformation of educational practice.

The project's legacy is therefore measured not solely by the number of educational materials developed or dissemination events organised, but by its capacity to inspire continued innovation, strengthen institutional cooperation, foster environmentally responsible citizenship, and support schools in preparing young people for the ecological and digital transitions that define twenty-first-century Europe. Through its integrated approach to visibility, dissemination, and sustainability, EAIEN establishes a durable framework for educational excellence that will continue benefiting teachers,

learners, educational institutions, and wider society for many years beyond the lifetime of the project.

YOUR TURN

A Sustainability Plan in Five Lines

Choose one output you have produced (a course, a handbook, a website, a set of lessons) and answer the five questions that shaped the EAIEN outputs:

1. Where will it be hosted once the funding ends?
2. Who is responsible for maintaining and updating it?
3. Under which open licence is it published?
4. In which languages is it available, and which is missing?
5. What is the smallest unit a teacher could adopt on its own?



CHAPTER 8

Conclusions and Future Perspectives

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The EcoAI EduNetwork Initiative has reached the point at which its objectives, achievements, experiences and remaining challenges can be examined in a structured and forward-looking manner. The preceding chapters have described what the EAIEN project set out to achieve, the conceptual foundations on which it was built, the activities through which its objectives were pursued, and the experiences of the teachers and students who participated in and contributed to its implementation. This concluding chapter has a more focused purpose: to articulate what the consortium has learned through the project, to acknowledge the aspects that remain open to further development, and to consider how the knowledge, practices and resources generated through EAIEN can continue to inform educational practice beyond the formal lifetime of the project.

In educational cooperation, conclusions are rarely definitive. A partnership can document its tangible achievements with precision – the resources developed, teachers trained, students engaged and schools involved – while the educational and organisational changes to which such interventions contribute often become visible only over a longer period of time. The impact of EAIEN should therefore be understood not only in terms of its immediate outputs, but also through the capacity of the approaches developed and tested within the project to be further adapted, transferred and embedded in educational contexts.

The conclusions presented in this chapter are consequently grounded in the evidence and experience accumulated throughout two years of transnational cooperation. They provide an account of the main lessons emerging from the implementation of EAIEN, identify challenges and areas requiring continued attention, and examine future perspectives for the development of green skills education in conjunction with responsible and meaningful uses of artificial intelligence. At the same time, they consider the sustainability of the project's results and the potential for continued cooperation, transfer and uptake beyond the funding period. In this sense, the conclusion of the EAIEN project represents not an endpoint, but a basis for further educational development and collaboration.

8.1 Overall Project Reflections or What the EAIEN Journey Has Taught Us

Across five institutions, three countries and two years of collaboration, four conclusions have emerged with sufficient consistency that the consortium is willing to state them without qualification.

8.1.1 Green Skills and AI Literacy Are More Powerful Together Than Apart

The project's founding premise was that sustainability education and digital competence should not be treated as separate curricular concerns competing for the same scarce hours. In practice, the pairing did considerably more than economise on curriculum time. Working with data gave sustainability education an analytical edge that exhortation alone cannot provide. Students who examined patterns of consumption in their own schools, or who traced the life cycle of a familiar object, arrived at conclusions they could defend rather than opinions they had been handed. Conversely, sustainability gave the technology a purpose. Students stopped asking what a tool could do and began asking what it was for, who had built it, and whose interests it served. That movement from fascination to judgement is the core of what the consortium now

understands by the term EcoAI, and it is not achievable by teaching either component in isolation.

8.1.2 The Teacher Is the Decisive Variable, and Teachers Do Not Start from the Same Place

Infrastructure matters and materials matter, but neither determines what happens in a classroom. Across every activity in this project, the strongest predictor of whether green skills genuinely entered a lesson was whether a teacher had been given the time, the confidence and the professional permission to redesign what they were already teaching. Where that support existed, modest resources travelled a long way. Where it did not, carefully designed materials remained unopened. The inequality between teachers was less a matter of ability than of exposure: some colleagues had spent years in international projects and moved easily in the vocabulary of competences and frameworks, while others engaged seriously with the sustainable development agenda for the first time through this partnership. Any initiative that assumes a common starting point will therefore underestimate the preparation, the support and time required and may misread differences in implementation as differences in commitment or ability.

8.1.3 Students Given Responsibility Behave Differently from Students Given Content

Students who took part in the ambassador and peer-training approach proved more at ease with artificial intelligence than the adults around them expected, and more willing to ask uncomfortable questions about accuracy, ownership and consequence. Where the project trusted young people with responsibility rather than treating them as an audience, it consistently received more than it asked for. The scale of the peer-training activities, together with the quality of engagement observed, suggests that responsibility was not simply a delivery mechanism but an important condition for meaningful student participation. Explaining a concept to a peer, in shared language and under the mild pressure of being watched by friends, demands a precision that answering a teacher's question does not. Across eleven peer-training sessions, 267 local students were reached, providing a substantial opportunity for this student-led approach to extend beyond the original mobility groups.

8.1.4 Cross-Border Collaboration Teaches Something That Domestic Professional Development Cannot

The principal value of the exchanges was not the transfer of teaching methods, useful though that was. It was the effect of seeing one's own working assumptions from the outside. A technical high school in Sântana, a private science high school in Eskişehir and

university faculties in Türkiye and Romania do not share a common understanding of what a classroom is for, how authority is exercised within it, or what counts as evidence of learning. Discovering this was occasionally uncomfortable and consistently productive. Practices that had seemed natural and inevitable turned out to be choices, and choices can be revisited. Difference, in this partnership, functioned as a resource rather than as a complication to be managed. The cross-border dimension of the EAIEN project therefore became an experience in itself: Romania, Türkiye and Greece did not simply contribute different contexts to a shared programme, but created the conditions for participants to question, compare and rethink their own professional assumptions. The mobility exchanges in Romania and Türkiye made these differences tangible, turning collaboration from an abstract principle into something experienced through classrooms, conversations and shared practice. The lasting value of such partnerships lies not in finding one model that can be replicated everywhere, but in developing the capacity to look at one's own practice differently after having seen how others approach the same challenges.

> THINK ABOUT IT
> Which of the four lessons in Section 8.1 resonates most with your own experience? Which would be the hardest to apply in your context, and why?

8.2 From Project Enthusiasm to Systemic Practice

The most uncomfortable conclusion of this work concerns not what the project achieved but the conditions under which it operated. Sustainability education in European schools is still carried largely by projects rather than by systems. Teachers fluent in the language of the sustainable development goals tend, overwhelmingly, to be teachers who have joined an international partnership or professional development initiative. Meanwhile, a colleague in the neighbouring classroom may encounter the same ideas in any sustained form for the first time when a researcher happens to ask them a question. This is not an accusation directed at any ministry or any school or teacher. It is a description of the terrain on which initiatives such as EAIEN operate, and it defines both what they can accomplish and what they cannot.

The associated risk is the creation of islands of excellence that remain islands. A trained cohort, an enthusiastic school and a well-built resource platform do not, by themselves, guarantee that anything survives the transfer, promotion or exhaustion of the individuals who championed it. Every partner in this consortium can name an earlier initiative whose materials are now archived and unread. The lesson is that the project's

success and systemic change are two different things. The first can be achieved within a defined period and with a committed group of people. The second requires structures that continue to function when the project team moves on. Three design implications follow, and the consortium sets them down here not only for its own future work, but also for those who may attempt to build on similar experiences.

8.2.1 Embed Rather Than Add

Content that lives outside the timetable competes with the timetable, and over time the timetable wins. Green skills and AI literacy enter classrooms durably only when they are mapped onto subjects that already exist, onto assessment that already counts, and onto lessons that teachers are already required to deliver. The most persistent EAIEN activities were those a teacher could use the following week in a lesson they were teaching anyway. The least persistent were those requiring a special week, a special room or a special authorisation. This has an important implication for the design of future projects. The question should not only be: "What new activity *can we offer schools?" It should also be: "Where does this activity naturally belong in what schools already do?"* A successful resource is therefore not necessarily the most innovative or spectacular one. It may be the one that fits best into an existing lesson and connects with an existing learning outcome.

Embedding also means accepting that adaptation is part of sustainability. A resource developed for one country will rarely travel unchanged. Its long-term value lies in its transferability. This does not mean reproducing an activity exactly as designed; it means giving teachers enough structure, examples and confidence to reinterpret it for their own context.

EAIEN has shown that projects can create conditions for change. That is the point at which project enthusiasm becomes systemic practice: when the work continues not because someone is still running the project, but because the practices have become part of how schools teach, students learn and respond to a changing world.

8.2.2 Distribute Rather Than Concentrate

Where responsibility rested on a single committed teacher, the work was vivid and fragile. Where a small team shared it – including, ideally, a member of the school's leadership – it began to shape how the school described itself to parents, to inspectors and to its own students. Institutional memory is built deliberately rather than accumulated by accident: through documentation, through the mentoring of newer colleagues, and through the unglamorous discipline of writing down how something was actually done.

8.2.3 Attend to Who Is Able to Take Part

Participation in international projects is itself unequally distributed. Schools with stronger infrastructure, more experienced staff and greater administrative capacity find it easier to apply, easier to host and easier to sustain involvement; and because participation itself builds capacity, the initial advantage compounds. Advantage accumulates where advantage already exists. A partnership genuinely concerned with the green transition cannot treat this as somebody else's problem, because a transition that reaches only well-resourced schools is not a transition at all. In practical terms this argues for materials that function under weak connectivity and modest equipment, for open licensing and translation into national languages, and for actively recruiting precisely those schools least likely to volunteer. The experience of EAIEN suggests that inclusion therefore needs to be treated as a design principle rather than a dissemination target added at the end. For future Erasmus+ partnerships the real test of sustainability is not whether the project can be remembered, but whether its work can continue without the people who first made it possible.

SELF-CHECK

Is Your Initiative Ready to Outlive Its Funding?

- ☐ Our activities are mapped onto existing subjects, lessons and assessments (embed rather than add).
- ☐ Responsibility is shared by a team that includes a member of school leadership (distribute rather than concentrate).
- ☐ How things were done is written down so that a new colleague can continue the work.
- ☐ Our materials work with weak connectivity and modest equipment.
- ☐ We actively invite schools that are least likely to volunteer (attend to who is able to take part).

Three or more ticks suggest that your work is moving from project enthusiasm towards systemic practice.

8.3 Green Skills in an Age of Intelligent Machines

The ground beneath green skills education is moving, and several developments will shape the field over the coming years. The consortium raises them here not as predictions but as the questions it believes successor projects will have to answer.

8.3.1 The Environmental Cost of the Technology Itself

Any curriculum that presents artificial intelligence purely as an instrument for solving environmental problems tells half the story. Training and operating large models consume energy and water at a scale that can no longer be described as marginal, and the infrastructure supporting this consumption is expanding rapidly. Critical AI literacy must therefore include the capacity to ask what a system costs to build and to run, and to weigh that cost against what it delivers.

8.3.2 Generative Systems Have Changed the Terrain

When this partnership was designed, the central practical question was whether schools would have access to AI tools at all, whether they were aware of age limits and data protection requirements, and whether they had school policies in place.

Today, the question has become whether students can exercise judgement over what those tools produce. Environmental information is a domain particularly exposed to fluent, confident and unverified claims, and a generated answer carries no visible marker of its own reliability. Green skills now necessarily include source evaluation, a working understanding of how such answers are assembled, and the habit of testing a plausible statement against an actual measurement. This is not a separate digital literacy curriculum running alongside environmental education; it is a component of environmental reasoning itself.

8.3.3 Work Is Changing Faster Than Guidance

Green jobs are, for the most part, not entirely new occupations. They are existing occupations acquiring new competences, new regulatory obligations and new technical vocabulary. Secondary schools cannot train for roles that do not yet have stable descriptions, but they can cultivate what those roles will demand: systems thinking, tolerance of uncertainty, the ability to reason from data, and the disposition to continue learning after formal schooling ends. Career guidance in schools remains, across all three partner countries, some distance behind the labour market it is meant to describe. Closing that distance is a promising direction for future partnerships.

8.3.4 Assessment Remains the Unresolved Problem

European competence frameworks describe green competences with considerable care, yet how to assess them is far less settled. The consequence is predictable: in systems where assessment determines what counts, competences that are never assessed are quietly treated as optional. The answer is not standardised testing of environmental values, which would be both crude and inappropriate. It lies in making

learning visible through portfolios, through structured evaluation of project work, and through rubrics capable of recognising action competence, that is, evidence that a student can not only explain a problem but has done something concrete about it.

8.3.5 The Emotional Dimension Can No Longer Be Treated as Peripheral

Adolescents who engage seriously with climate and biodiversity content frequently experience something between unease and genuine distress. Teaching that presents overwhelming problems without offering any avenue for agency reliably produces disengagement, fatalism, or both. The action-oriented and project-based approaches favoured throughout EAIEN are therefore not merely a methodological preference; they are in part a psychological necessity. Successor projects should say so openly and should prepare teachers accordingly, since most educators have received no preparation whatever for the conversations that honest sustainability education actually generates.

Taken together, these five developments point to a single conclusion: green skills and AI literacy are no longer separate agendas that happen to share a classroom, but two dimensions of a single competence area, and treating them as such is the central task now facing environmental education.

DISCUSS WITH COLLEAGUES

1. Should students learn about the energy and water footprint of the AI tools they use? How could you make that cost visible in a lesson?
2. How can sustainability competences be assessed without reducing them to test scores? What would count as evidence of action competence in your classroom?
3. How do you prepare teachers for the emotional conversations that honest climate education can generate?

8.4 Sustaining the Network Beyond the Funding Period

A closing chapter that ends at the closing date would defeat its own purpose. The consortium has accordingly committed to several forms of continuity, some formal and some considerably less so.

The open resources remain open. The project's educational materials and the platform that hosts them were built to outlast the partnership: openly licensed, available in the partners' languages, and structured so that a teacher with no connection to this project can take a unit, adapt it to a national curriculum and use it without seeking anyone's permission. Responsibility for keeping the platform accessible and its content current after the funding period has been assigned to Future Learning.

Adaptation is encouraged rather than merely tolerated: a unit rewritten for a different school, a different subject or a different language is a success, not a deviation from the original.

The relationships remain. Formal agreements expire; working relationships between teachers frequently do not. Both partner schools have already identified further avenues of collaboration through eTwinning, through new applications, and through the informal exchanges that tend to follow once colleagues have shared a week of intensive work in one another's institutions. This is the least documentable outcome of the partnership and quite possibly the most durable.

The dissemination continues at local level. The multiplier event, the school-level dissemination sessions and the conference presentations were designed as points of entry for others rather than as terminal reporting exercises. Each partner institution retains the material required to run these sessions again, and each has a continuing institutional interest in doing so. In this sense, dissemination is understood not as a final project activity, but as an ongoing process through which knowledge, practices, and materials can continue to circulate beyond the initial partnership.

Drawing on the experience of the project as a whole, the consortium offers a short set of recommendations to those in a position to act upon them:

1. Recognise green and digital competence development within teacher career and professional development structures, so that participation depends on more than individual goodwill.
2. Fund the maintenance, translation and updating of educational outputs, not only their initial production. Long-term accessibility and relevance require resources beyond the lifetime of a project.
3. Make sustainability an explicit cross-curricular responsibility with a named coordinator in each school, rather than an implicit responsibility belonging to everyone and therefore to no one.
4. Prioritise the participation of under-resourced and rural schools in international projects, including through practical support with applications and administration.
5. Invest in assessment approaches that make sustainability competences visible without reducing them to test scores. Such approaches should recognise the complexity of competences that involve knowledge, attitudes, values, collaboration, critical thinking, and the capacity to translate learning into action.
6. Treat AI literacy and environmental literacy as a single competence area rather than as two parallel initiatives with separate budgets and separate champions. The experience of this project shows that digital transformation and environmental

sustainability increasingly need to be considered in relation to one another, particularly within education.

7. Provide schools with vetted, data-protection-compliant AI tools and clear guidance for their use with minors, so that AI literacy does not depend on each teacher negotiating terms of service alone.

8.5 Final Reflections, Future Collaborations, Networking and Development Opportunities

EAIEN has not solved the whole problem, and it would be dishonest for a closing chapter to imply otherwise. The gap between what schools are asked to do for the green transition and what they are equipped to do remains wide, and no single partnership will close it. What this project has done is more modest and, the partners would argue, more useful: it has demonstrated a workable way of approaching the problem, produced resources that others are free to take up, adapt and further develop, and left behind a group of teachers and students who think differently about sustainability, technology and their own capacity to act than they did two years ago. The measurable outcomes are recorded elsewhere in this book. What cannot be fully recorded, because it resists the format, is the moment when a student who rarely spoke in class stood in front of her classmates and explained how a machine reaches a decision, and why that matters for the river outside her town. Such moments appear in no indicator table. They are, nonetheless, the reason the work was worth doing and the reason it should continue after this book is closed.

The conclusion of EAIEN should therefore also be understood as a point of transition rather than an endpoint. Throughout the project, the partnership has created professional connections, exchanged practices and established relationships among schools, universities, teachers and other stakeholders that have the potential to extend beyond the formal project lifetime. This emerging network represents an important basis for future collaboration, allowing partners to remain connected, exchange newly developed practices, and explore new forms of cooperation around environmental education, digital transformation, artificial intelligence and student participation. This intention was particularly evident during the final Transnational Project Meeting, where the partners discussed concrete possibilities for continuing their cooperation beyond EAIEN. The meeting provided an opportunity to explore the consolidation of the collaboration with Universitatea Politehnica Timișoara through future European projects and other joint initiatives. At the same time, the two school partners, Özel Çağdaş Fen Lisesi in Eskişehir and Liceul Tehnologic „Ștefan Hell” in Sântana, expressed

their interest in becoming involved in future partnerships and cooperation opportunities together with Anadolu University. Future Learning committed to maintaining the OER platform, to co-developing new proposals with the partners, and to extending the network to schools in Greece.

These discussions confirmed that the relationships established through EAIEN have developed into a broader professional network with the potential to generate new ideas, partnerships and educational opportunities.

Consequently, all five partners from three countries have expressed their shared interest in continuing to work together on future innovative projects, building upon the trust, experience and common vision developed during EAIEN. The intention is not simply to reproduce the project in another form, but to carry its story forward by opening new directions for experimentation, extending the existing partnership to new contexts and stakeholders, and developing innovative responses to the educational challenges emerging at the intersection of sustainability, digitalisation and artificial intelligence. In this sense, EAIEN can be seen not only as a completed project, but as the first chapter of a longer process of European cooperation. Looking ahead, the results and experiences generated through EAIEN may provide a valuable foundation for future Erasmus+ projects and other forms of European cooperation. The educational resources, methodologies, learning activities and implementation experiences developed during the project can be further adapted to different educational contexts, extended to new target groups and combined with emerging priorities in areas such as digital and green competences, responsible use of artificial intelligence, climate education, inclusion and active citizenship. Future projects could build upon the EAIEN experience by testing the existing approaches on a wider scale, developing new training opportunities for educators, strengthening cross-sectoral cooperation, or investigating how artificial intelligence can be used in educational settings while maintaining a strong emphasis on ethics, sustainability and human agency. In this sense, the value of EAIEN does not lie only in the outputs completed within the project period, but also in their potential to serve as building blocks for further experimentation, cooperation and innovation.

The sustainability of the project will ultimately depend on the willingness of those involved to continue using, sharing and developing what has been created. For the partners, this means taking the lessons learned into future institutional practices, maintaining professional relationships, disseminating the project resources and remaining open to new forms of European cooperation. For other organisations, it means that the EAIEN results can be considered not as a finished package, but as a starting point that can be interpreted, adapted and improved according to local needs and future educational challenges.

EAIEN therefore closes with no claim of completion. Its most meaningful legacy may be the capacity it has helped to develop: the capacity of educators to experiment, of students to question and create, and of partner organisations to work collaboratively across borders and disciplines. If the project has demonstrated anything lasting, it is that the green and digital transitions are not challenges that schools can address through isolated actions. They require networks, continued learning, shared responsibility and opportunities to develop ideas beyond the duration of a single project. The next chapter of this work will belong not only to the original partnership, but also to the teachers, students and organisations that choose to carry its ideas forward, connect them with new contexts and transform them through future Erasmus+ cooperation. In that sense, the story of EAIEN does not end with the closing of the project; it continues through the relationships it has created, the ideas it has set in motion, the intercultural dialogue it has strengthened among partners, teachers and students, and the future collaborations that may grow from them.

YOUR TURN

Your Next Step

Go back to the question you wrote down at the end of Chapter 1. Has the book helped you answer it? Then plan one concrete step.

One action I will take in the next month:

One colleague I will involve:

One resource from this book I will use:

One partner I would like to collaborate with:

APPENDIX A

EAIEN at a Glance

Key facts about the project and the partnership

The table below summarises the project that produced this book; the partner profiles that follow show who did what, and where to find each organisation online.

Project	EcoAI EduNetwork Initiative (EAIEN)
Programme	Erasmus+, Key Action 2 – Cooperation Partnerships in School Education (KA220-SCH)
Project number	2024-1-TR01-KA220-SCH-000255119
Duration	December 2024 – November 2026 (24 months)
Coordinator	Anadolu University, Eskişehir, Türkiye
Partnership	Five organisations from Türkiye, Romania and Greece: two universities, two secondary schools and an education technology SME
Funding	Lump-sum grant of EUR 250,000, awarded through the Turkish National Agency
Work packages	WP1 Project Management · WP2 Green Skills Education Ecosystem Development · WP3 Green Skills Crossing Borders · WP4 Dissemination and Exploitation
Languages	English, Turkish, Romanian and Greek
Key results	Online course “AI-Empowered Green Skills Education”, Teacher’s Handbook, Student Training Pack, Green Skills OER Platform and this Experience Sharing Book

Partner Organisations

Anadolu University

Eskişehir, Türkiye · Coordinator

Leads project management (WP1), the design and delivery of the LTTA online course and the Green Skills Peer Training Exchange.

www.anadolu.edu.tr

Universitatea Politehnica Timișoara

Timișoara, Romania · Partner University

Co-designs the teacher training and AI-driven OER methodologies, leads the Experience Sharing Book and coordinates conference dissemination.

www.upt.ro

Özel Çağdaş Fen Lisesi

Eskişehir, Türkiye · Partner school

Leads student selection and the Green Skills Ambassador Programme and organises the multiplier event in Türkiye.

www.ozelcagdas.k12.tr

Liceul Tehnologic „Ștefan Hell" Sântana

Sântana, Romania · Partner school

Leads the Local Observations activity, with field trips and on-site experiences in Romania.

www.lt-stefanhell.ro

Future Learning

Volos, Greece · Partner SME

Leads the development of the Green Skills OER Platform and the project's promotional content and visual identity.

www.futurelearning2024.com

APPENDIX B

Online Resources and Social Media

Project Platforms

Project website
www.eaien.eu

Green Skills OER Platform
oer.eaien.eu

Online course
course.eaien.eu

Social Media

Instagram
@eaienproject

Facebook
EAIEN Project

LinkedIn
EAIEN Project

Further Links

Online course on The Open University's OpenLearn Create (OLC) platform:
https://www.open.edu/openlearncreate/course/view.php?id=20032

EAIEN's Erasmus+ Project Website: https://erasmus-plus.ec.europa.eu/projects/search/details/2024-1-TR01-KA220-SCH-000255119

Contact: eaienproject@gmail.com

APPENDIX C

Glossary of Terms and Abbreviations

Abbreviations

AI	Artificial intelligence
DigComp	European Digital Competence Framework for Citizens
DigCompEdu	European Framework for the Digital Competence of Educators
EAIEN	EcoAI EduNetwork Initiative
ESD	Education for sustainable development
EU	European Union
GreenComp	European Sustainability Competence Framework
KA220-SCH	Erasmus+ Key Action 2 – Cooperation Partnerships in School Education
LTTA	Learning, Teaching and Training Activity
MOOC	Massive open online course
OCM	Online Coordination Meeting
OER	Open Educational Resources
OLC	OpenLearn Create (platform of The Open University, UK)
PBL	Project-based learning
PMC	Project Management Committee
QAC	Quality Assurance Committee
SC	Steering Committee
SME	Small and medium-sized enterprise
TPM	Transnational Project Meeting
UPT	Universitatea Politehnica Timișoara (Politehnica University of Timișoara)
WP	Work package

Terms

AI literacy The ability to understand, use and critically evaluate artificial intelligence tools in educational and everyday contexts, including awareness of their ethical and social implications. In this book, AI literacy is treated as a competence for all learners, not only future specialists (see Chapter 3).

Cascade training model The three-tier approach used in EAIEN: teachers trained in the online LTTA course trained student ambassadors in their own schools, and the ambassadors then delivered peer training sessions to other students during the mobilities.

Cooperation Partnership An Erasmus+ Key Action 2 action that supports transnational projects in which organisations develop, share and transfer innovative practices. EAIEN is a Cooperation Partnership in School Education (KA220-SCH).

Creative Commons licence A standard open licence that allows others to reuse, adapt and share a work under stated conditions, such as giving appropriate credit. EAIEN's finalised outputs are published under Creative Commons licences.

DigComp and DigCompEdu European reference frameworks describing the digital competence of citizens (DigComp) and of educators (DigCompEdu).

Education for sustainable development (ESD) Education that develops the knowledge, skills, values and attitudes learners need to act for a sustainable future, emphasising competences such as systems thinking, anticipation and collective action rather than the transmission of facts alone.

Experience Sharing Book This publication: a Work Package 3 deliverable that documents the EAIEN journey and shares its lessons with other schools, educators and projects.

Generative AI Artificial intelligence systems that produce new text, images or other content in response to prompts. In EAIEN, teachers and students used such tools to draft and adapt learning materials, which were then checked and revised by people.

Green skills Used in two related senses: the broad sustainability competences described in GreenComp, and the narrower, often occupation-specific skills needed to support the green transition. EAIEN works with both (see Section 3.1.1).

Green Skills Ambassador A student trained within EAIEN to create learning materials and lead peer training (Green Skills Ambassador), or a teacher certified after completing the project's training course (Green Skills Teacher Ambassador).

Green Skills OER Platform The project's open repository at oer.eaien.eu, hosting teacher- and student-created open educational resources on green skills.

Green Skills Peer Training Exchange The Work Package 3 mobility hosted in Eskişehir (Türkiye), in which student ambassadors from the two partner schools co-created materials and delivered peer training sessions to local students.

GreenComp The European sustainability competence framework (2022), which sets out twelve competences in four areas: embodying sustainability values, embracing complexity in sustainability, envisioning sustainable futures and acting for sustainability.

Learning, Teaching and Training Activity (LTTA) In EAIEN, the online teacher training course "AI-Empowered Green Skills Education", which prepared teachers from the partner schools to deliver the Green Skills Ambassador training.

Local Observations The Work Package 3 mobility hosted in Sântana (Romania), in which students observed sustainability practices in the local community and turned their observations into learning materials and peer training.

Multiplier event A dissemination event at which project results are presented to educators, school leaders, policymakers and other stakeholders outside the partnership.

National Agency The body that manages decentralised Erasmus+ actions in a country. EAIEN was funded through the Turkish National Agency.

Observation Booklet The Green Ambassadors Observation Booklet: a structured tool with five dimensions (waste management and recycling, sustainable transportation, green spaces and urban nature, energy and buildings, and sustainable consumption) that students used to record their observations during the mobilities.

Open Educational Resources (OER) Teaching, learning and research materials released under an open licence that permits no-cost access, reuse, adaptation and redistribution by others.

OER-enabled pedagogy Teaching and learning practices that are possible only because open licences allow learners' work to be retained, reused, revised, remixed and redistributed, so that student assignments become resources with a real audience.

Peer learning Learning in which students learn from and with one another. In learning by teaching, students deepen their own understanding by preparing and delivering explanations to their peers.

Project-based learning (PBL) An approach in which students investigate a driving question over an extended period and produce a public outcome, such as a resource or a presentation.

Twin transition The simultaneous green and digital transformations of European society and economy, which EU policy seeks to manage together.

Work package (WP) A group of related project tasks. EAIEN had four: WP1 Project Management; WP2 Green Skills Education Ecosystem Development; WP3 Green Skills Crossing Borders; WP4 Dissemination and Exploitation.

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Funded by the European Union