

Greening England's Education: Learning From Best Practice in Italy and Finland

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Glossary

COP - Conference of the Parties, in reference to the UN Climate COP

SOS UK - Students Organising for Sustainability UK

DfE Strategy - Department for Education's Sustainability and Climate Change Strategy

CPD - Continuing Professional Development

DfE - Department for Education

FFF - Fridays for Future

RUS - The Network of Universities for Sustainable Development (Italy)

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Biography

Phoebe is a 23-year-old multi-award-winning advocate focused on supporting young people to tackle the climate and environmental crises. She co-coordinated Mock COP26, a virtual youth climate conference convening over 800 young people from over 140 countries to form policy proposals and collaborate with leaders such as the COP26 President and UN Youth Envoy. Working to enact the Mock COP policy proposals, Phoebe supported the UK Presidency in creating the first joint event of education and environment ministers at COP26, facilitating pledges from 25 countries, and went on to advise the Department for Education on their Sustainability and Climate Change Strategy and Natural History GCSE. She co-founded Teach the Teacher, a Mock COP campaign supporting students in 20 countries to teach their teachers about climate change, now providing students with opportunities for leadership in 200 UK schools a year. At COP27, she was an organising partner of the first Children and Youth Pavilion at a COP, working to promote the interests of young people globally.

Phoebe graduated with a first-class BA (Hons) degree in Politics from Lancaster University, writing her dissertation on youth engagement in the UNFCCC. She completed an academic residency at the University of Nevada as a Fulbright Commission European Student Leader. She subsequently gained an MA in Diplomacy and Foreign Policy.

Executive Summary

This report explores how climate education is being enacted and reimaged across Italy, Finland, and England. Drawing on field visits, interviews with educators and policymakers, and analysis of national frameworks, it identifies the practices and conditions that enable meaningful learning for sustainability.

In Italy, grassroots projects are embedding environmental and social justice into education through community partnerships and experiential learning. In Finland, a coherent national framework, strong teacher autonomy, and innovative school cultures are enabling whole-system approaches that connect wellbeing, equity, and ecological awareness. In contrast, the English context shows progress through policy initiatives and youth advocacy but remains constrained by structural fragmentation, curriculum overload, and limited teacher training.

The report concludes that climate education must be systemic, participatory, and emotionally sustaining. Empowering teachers, aligning policy with practice, and embedding climate literacy across all subjects are essential steps toward cultivating a generation ready to meet the challenges and opportunities of a changing world.

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1. Introduction

Young people today are growing up in the shadow of the climate emergency — a reality that is shaping their sense of identity, security, and future. A 2021 study in *The Lancet Planetary Health* found that 84% of respondents aged 16-25 across ten countries were worried about climate change, with more than half reporting feelings of sadness, anxiety, anger, helplessness, or guilt (Hickman et al., 2021). In the UK, youth voices echo this urgency: one Year 10 student described climate change as “one of the most pressing issues of our time” (Teach the Future, 2025).

This growing awareness among young people has begun to shift the educational landscape. In England, the Department for Education (DfE) committed in 2021 to placing “climate change at the heart of education,” a vision formalised in the Sustainability and Climate Change Strategy published the following year (Department for Education, 2022). The strategy represents a significant step forward: a framework that applies across the education system and signals recognition that schools play a vital role in equipping young people for a climate-changed future. However, the implementation of this vision remains uneven. Research by Teach the Future found that 70% of UK teachers feel they have not received adequate training to educate students about climate change, while more than 80% of students want to learn more about it (Teach the Future and Brindle, 2021; Teach the Future, 2025). Although the DfE Strategy commits to offering continuing professional development (CPD) for science teachers, it does not include new professional qualifications or requirements in initial teacher training. Earlier drafts had promised that England would have “the best-trained, best-supported teachers in the world” in this field: a pledge later removed from the final publication (Department for Education, 2022). This gap leaves teachers under-equipped to deliver the scale of transformation the strategy envisions.

At the same time, the Curriculum and Assessment Review aims to ensure young people leave school “ready for life and ready for work,” yet its Terms of Reference make no mention of sustainability or climate education (Department for Education, 2025). This omission feels striking in a decade defined by environmental and economic transition. Meanwhile, only 27% of young people in the UK can explain what “green jobs” are, and less than a third (31%) understand the concept of Net Zero (King's Trust, 2025). These findings highlight a disconnection between the scale of the climate crisis and the preparedness of the next generation to navigate - and shape - the future.

It is within this context that my Churchill Fellowship research took place. The Fellowship sought to explore how two European nations, Italy and Finland, have embedded climate education systematically and meaningfully into their national education systems. Both countries offer valuable lessons: Italy has introduced mandatory climate education across all grades, while Finland integrates sustainability into its national curriculum through a holistic approach to wellbeing, citizenship, and environment. Through field visits, school observations, and interviews with educators and policymakers, this research aimed to identify the policies,

pedagogies, and cultural conditions that enable climate education to move beyond aspiration to transformation, and to consider how such approaches could inform the UK's next steps.

1.1. Climate Education in the English Curriculum

Climate change is an included topic in the current National Curriculum. At a primary level, it is taught in its core concepts - what the climate is, how it changes, and different types of environments - and at the secondary level, climate-related topics are an included part of Key Stage 3 and 4 science and geography curricula (Kulakiewicz, Long, and Roberts, 2021). However, this inclusion is largely conceptual and unevenly embedded across schools.

The 2025 Curriculum and Assessment Review has emphasised the need for the curriculum to evolve in response to rapid social and environmental change, calling for a “greater focus on sustainability and climate science” (Department for Education, 2025). This has been further reinforced by the youth-led Shadow Curriculum and Assessment Review, which advocates for the full integration of climate education as a cross-curricular priority (Teach the Future, 2022). Yet, structural inconsistencies within the English education system complicate this ambition. Until 2025, academies and free schools were not required to follow the National Curriculum — a significant factor given that 42% of primary schools and nearly 82% of secondary schools now hold academy status (Department for Education, 2024; McGlade, 2024). This autonomy creates substantial variation in how, and whether, climate change is taught.

An Education Policy Institute convening in 2024 found that climate education tends to be more consistently embedded in primary schools than in secondary schools. In primary settings, sustainability themes are often explored across multiple subjects, while in secondary education, coverage is mostly confined to geography and science, mirroring National Curriculum requirements (McGlade, 2024). Participants also highlighted stark disparities between schools: some have adopted a whole-school focus on sustainability, while others rely on the enthusiasm of individual teachers. OCR's Striking the Balance report echoed these findings, describing climate education provision as “haphazard, depending largely on the policies and approaches adopted by individual schools and the efforts of individual teachers” (OCR and Clarke, 2024). This dependence on individual commitment is unsustainable and inequitable — particularly in schools with fewer resources or competing priorities.

The Department for Education's Sustainability and Climate Change Strategy (DfE Strategy) has launched two major initiatives to strengthen provision. The first, the National Education Nature Park (2023), encourages schools to monitor and improve biodiversity on their grounds, supported by £15 million in funding for educational settings, prioritising those in areas with limited green space or higher deprivation (McGlade, 2024). The second, the forthcoming Natural History GCSE, aims to expand climate and environmental learning opportunities for older students (Department for Education, 2023). While these programmes represent welcome progress, participation in the Nature Park is voluntary, and its success again relies on individual schools' willingness and capacity to engage.

Despite growing policy attention, significant barriers remain to embedding climate education effectively in England. Teachers face extremely high workloads: in 2023, 72% of teachers and leaders reported that their workload was not acceptable (Adams et al., 2023). A crowded curriculum further limits flexibility: 68% of teachers agree that they cannot explore student interests due to content pressures (Teacher Tapp, 2024). Adding new material, particularly on complex and evolving topics like climate change, risks compounding these pressures without adequate support. Teacher training represents a critical gap: Teach the Future research in 2021 found that 70% of teachers felt unprepared to teach about climate change, while more than 80% of students wanted to learn more (Teach the Future and Brindle, 2021; Teach the Future, 2025). The DfE Strategy includes some CPD for science teachers and a new occupational standard for further education teaching, but it does not extend training to all subject areas (Department for Education, 2023). Yet, a majority of teachers believe that climate change could be integrated into their own subject - an opportunity currently under-realised.

In summary, England's approach to climate education is at a critical juncture. Policy frameworks have begun to recognise its importance, but implementation remains fragmented and dependent on individual effort. Compared with Italy's mandatory, values-driven model and Finland's systemic integration of sustainability across the curriculum, the English system lacks coherence and structural support. Moving forward, meaningful progress will depend on ensuring that climate education is not an optional addition, but a shared national commitment - supported by curriculum design, teacher training, and institutional accountability.

1.2. Finland and Italy

Finland and Italy present different yet complementary approaches to their climate and sustainability education. The Finnish system has been recognised for its holistic and forward-looking model, which promotes sustainability across all economic, social, and environmental dimensions (Messina, 2023). This is intended to foster creativity and innovation at the same time as ecological awareness and active citizenship by integrating sustainability into the educational culture on a wider level. Schools then become a replication of society itself, preparing students to participate in broader societal transformation. By contrast, Italy has been progressively reorienting its education system towards sustainability through collaborations between schools, local institutions, and cultural organisations: their reforms emphasise cultural heritage preservation, linking education closely with territorial needs (*ibid.*). This was of interest to me, with both countries having more content on climate change in their teaching and learning than the English education system, but in different ways. Through my Churchill Fellowship research, I hoped to understand the ways that this worked in practice and gain a more thorough understanding, from countries already doing it, of the best ways in which England could integrate climate change into its curriculum.

2. Italy

Italy's landscape of climate and environmental education is rich but fragmented. I was struck by the lack of centralisation of policy and practical work in the capital, which I have felt in the UK as well as in Finland, and by the impact that the regional context had on climate education provisions. I decided to travel to Italy due to the work of former Minister of Education Lorenzo Fioramonti and his work on compulsory climate education, which was world-leading, but what I found was a huge amount of grassroots creativity and practice outside of official structures. When asking for recommendations of who to speak to in Italy about climate education, the answer was almost always a local educator, artist, or activist. These individuals appear to be filling a void, with the official climate education policy struggling to be enacted in practice for a number of reasons, but they also demonstrate an alternative pedagogy that focuses on cultivating connection to place, community, and developing a sense of agency and active citizenship in young people. Taken together- both policy changes and grassroots work- the examples I saw in Italy illustrate an Italian pedagogy of transition, constrained by some structural and societal rigidity or reluctance, but rooted in creativity. What emerges is a portrait of a country where the ecological transition in education is not imposed from above but co-created from below.

2.1. Policy and Systemic Context

Italy's climate education landscape reflects a tension between policy ambition and practical fragmentation. Since 2020, environmental themes have been formally included in the national curriculum under *educazione civica* (citizenship education), thanks in part to the efforts of former Minister Lorenzo Fioramonti. Under his leadership in 2019, Italy became the first country to make learning about climate change compulsory for school students, including about 33 hours a year into their curriculum to study issues relating to climate (Gianluca Mezzofiore, 2019). Young Italians are subsequently among the best-informed students in the European Union about climate change, according to a 2024 EIB survey, ranking second in terms of climate knowledge, and knowing more than Italians over 30 about the causes and consequences of climate change (EIB, 2024). By inserting environmental and climate education within the legal framework of civic education, Fioramonti created an entry point for sustainability topics in schools.

However, as several interviewees noted, implementation remains uneven. An active young member of the Greens party who works on climate education, whom I spoke with, observed that while new topics continue to be added to curricula, teacher training has not kept pace:

“The Ministry keeps adding new subjects, but without formation. Teachers rely on external people coming into schools instead of being trained themselves.”

The lack of professional preparation means that most climate-related activity depends on individual initiative: of teachers, NGOs, or local associations. Education is nationally

standardised up to middle school, limiting local flexibility, although some regions (e.g. bilingual Alpine areas) exercise limited autonomy.

In practice, schools that do engage with climate education often do so through extracurricular collaborations, school trips, or projects led by external educators, rather than through the structured curriculum.

2.2. Civil Society and Advocacy Initiatives

In the civic sphere, I spoke to a representative from Save the Children Italy, which has reframed climate change as a child rights issue, recognising it as one of the main threats to children's wellbeing and equality. Since 2021, the organisation has pursued two strategic objectives:

1. Mainstreaming children's rights within climate negotiations, such as the COP processes;
2. Institutionalising child and youth participation in environmental policy.

Through the Lead for Change youth network, Save the Children supports young activists aged 16-24 in developing advocacy campaigns, participating in international forums, and influencing national positions on climate and climate finance. The representative highlighted, however, that youth engagement on climate remains limited, with many young people focusing instead on issues such as migration and gender-based violence, which feel more immediate. The challenge is to make climate action feel relevant and accessible, especially to marginalised youth.

2.3. Grassroots Climate Education and Youth Movements

Fridays for Future: Peer-to-Peer Climate Learning

Giacomo Zattini, co-founder of a regional branch of Fridays for Future (FFF) and national co-spokesperson in 2023, described how youth activists have become informal educators. In response to school invitations, FFF members developed lesson materials and presentations on the basics of climate change, tailored for secondary students (ages 14-19). They highlighted, specifically, the 'what can you do': what could the students do today, or in their immediate future, instead of solely looking towards what they would be able to do in their future careers. The FFF branch would receive messages of thanks from some students following these lessons, saying that they had taken some action in their homes or schools, and that it had inspired them.

Peer-led sessions in schools across Italy help demystify the topic and inspire activism. Zattini explained that presenting as young people themselves created a sense of identification among students:

“Being younger in front of young people was really valuable - they saw we’re the same, and tomorrow they could be in our place.”

However, access remains inconsistent. Some schools resist external visitors for bureaucratic or ideological reasons, while others actively support collaboration. Success often depends on individual teachers willing to champion the initiative.

In regions like Emilia-Romagna, where severe flooding in 2023 caused major damage, local impacts have strengthened public understanding and lent legitimacy to FFF’s educational work. Zattini made reference to the difference in reception of the work after the flooding:

“It was really fresh, they could feel it. It wasn’t something happening somewhere else; it was close and in their city.”

2.4. Higher Education and National Collaboration

Manifesto for the Ecological Transformation of the University

The higher education sector in Italy is beginning to take a more explicit stance on its responsibility within the ecological transition. Universities are being reimagined not only as sites of learning and research, but as civic and cultural actors capable of modelling new forms of social, economic, and environmental sustainability.

This perspective is powerfully articulated in the “Manifesto per la trasformazione ecologica dell’università (Manifesto for the Ecological Transformation of the University)”, developed by WWF Italia and other youth and environmental organisations, in dialogue with civil society. The Manifesto situates universities at the heart of Italy’s contribution to the global transition “away from fossil fuels” agreed at COP28, arguing that higher education institutions must serve as drivers of change, places where a new social contract for sustainability is imagined and enacted (WWF Italia et al., 2025).

The Manifesto positions universities as physical and social spaces where “a different vision for a truly sustainable socio-economic world for future generations can emerge” (ibid.). This vision calls for universities to move beyond their traditional remit of teaching and research to promote community cooperation. It positions universities as not only knowledge producers but public institutions with ethical responsibilities: to reduce their own emissions, to make visible their sources of funding, and to ensure that their partnerships and curricula align with Italy’s international commitments on climate and human rights.

A central demand of the Manifesto is the pursuit of “Net-Zero Education and Research.” It urges universities to:

- Eliminate funding for teaching and research from highly polluting or rights-violating industries (especially the fossil fuel sector);
- Publish transparent, monitorable decarbonisation strategies for all teaching and research activities;
- Redirect financial and institutional support toward renewable energy, ecological innovation, and sustainability transitions;
- Disclose private collaborations and consultancies with companies whose operations conflict with national and international climate goals;
- Request national guidelines from the Ministry of Education, University and Research to standardise these practices.

These commitments aim to make knowledge itself a form of renewable energy, an ethical foundation for a just transition.

The Network of Universities for Sustainable Development

At the practical level, these principles are beginning to take shape through networks such as the “Rete delle Università per lo Sviluppo Sostenibile (The Network of Universities for Sustainable Development)”, or RUS. This network represents a coordinated national approach within higher education. Eleonora Maria Faga, from the University of Pavia’s Office for Sustainable Actions, described how universities are engaging through:

- A working group on education within RUS, co-led by Riccardo Guidetti and Gabriella Calvano, promoting cross-disciplinary integration of sustainability education;
- Seminars and open-badge courses on sustainability and climate themes;
- Collaborations with municipalities to make events more public-facing.

The education working group within RUS focuses on the different education modalities for sustainable development, highlighting best practices and proposing new approaches, teaching, and educational methods (RUS Education, 2024). They work on Lesson Zero on Sustainability, a literacy course on the topic of sustainability. It aims to build a solid knowledge foundation that can then cut across a variety of different subjects.

Pavia’s model reflects the institutional momentum building within Italian higher education. At the end of 2024, the University hosted a meeting on the current state of the climate crisis alongside FFF Pavia and the Department of the Environment and Ecological Transition of the Municipality of Pavia, offering a forum for discussion with experts and local representatives (Giacomo Pelizza, 2024). This forum facilitated conversation within the local area on the topic of climate change, though it was noted that participation still tends to attract those already interested in the topic. Scaling up to reach broader student populations remains an ongoing challenge.

The University of Genoa has gone further in its approach, developing a Smart Energy Building, designed to meet goals of zero carbon emissions, energy and water efficiency, and building

automation (University of Genoa, 2025). The university uses this building, among other things, to host local secondary school students, who learn about the sustainable energy production and responsible production projects developed at the university in the centre (Festival Dello Sviluppo Sostenibile, 2025a). This goes far to address the issue of engaging the broader student population, embedding sustainability into the fabric of the university and using this to engage the local, broader community.

2.5. Case Study 1: Elisabetta Mitrovic - Observation, Drawing, and the Naturalist Approach

Elisabetta Mitrovic, a naturalist, illustrator, and environmental educator with over 25 years of experience, exemplifies a creative and experiential approach to environmental education. Her project Notebooks in Nature encourages drawing from life as a form of scientific observation, combining artistic practice with ecological literacy (Mitrovic, 2025).

Mitrovic trains teachers through workshops and summer schools in collaboration with public organisations, parks, and national education centres, guiding them to bring students outdoors and observe the living world directly.

“Drawing forces us to observe; to notice details we would never see in a photo. It’s not about art for art’s sake, but about learning to love nature. The defence of biodiversity begins here.”

Her initiatives reconnect Italian teachers, many of whom have limited scientific backgrounds, to nature as a living classroom. Unlike the UK, where field-based naturalist culture is stronger, Mitrovic notes that Italian environmental education often remains theoretical. Through her workshops, teachers rediscover the joy of observation, bringing that perspective back to their classrooms. This, then, allows those teachers to replicate this experience for their students. Mitrovic noted that drawing through direct observation is a powerful exercise for children, developing not just their knowledge of and connection to the environment, but also their attention, patience, and artistic skills.

“Observing in real life allows them to grasp details that often escape in printed images or on screens. In addition, it stimulates curiosity and analytical skills: a child who draws an insect, a leaf, or a bird must observe its shapes, colours, proportions, and perhaps ask questions about its behaviour or function in nature.”

Her books replicate this model. “In riva al mare” is a book for children 7 and up, and anyone who wants to, through the pages, join Mitrovic at the beach, and follow her explorations and naturalistic observations through drawing. Mitrovic’s work also intersects with national cultural programmes, such as the exhibition In Praise of Diversity - Journey into Italian Ecosystems (Rome, 2024-25), where her illustrations and educational installations invite visitors to observe and interpret biodiversity through art.

Her case study illustrates how creative practice can bridge emotional, scientific, and aesthetic dimensions of environmental education, helping both teachers and students “start from scratch” in their relationship with the natural world.

2.6. Case Study 2: Serena Bonura - Embodied Environmental Learning in Southern Italy

Serena Bonura’s practice in southern Italy represents an embodied, community-based pedagogy that links environmental education to emotional well-being. Having led environmental learning centres since the early 2000s, Bonura now combines yoga, mindfulness, and ecological storytelling in her work with children and families. She finds that parents understand yoga better than strictly environmental topics.

Her lessons are mostly outside, following topics like “tree” or “flower”, and using body movement and sensory experience to cultivate empathy and attention:

“The children move like a tree, imagine the tree, and feel the tree. Through their bodies, they learn to listen: to themselves and to the world.”

It emphasises to children, alongside a connection to the natural world, a way of moving with intention, where they are encouraged to pay attention to their body language. Bonura’s approach reflects a response to burnout and disillusionment with institutional barriers. By shifting from structured environmental education centres to small, personal teaching settings, she demonstrates how care-based and relational pedagogies can nurture sustainability values from the inside out. She spoke to me about how her work now is different from her past work in more formal centres, but at the same time, not; that it is the same thing, expressed in different ways.

Her work also addresses broader cultural and systemic issues:

- Limited institutional support and fragmented coordination between the north and the south;
- Overreliance on individuals rather than public infrastructure;
- Growing pressure on children and parents within Italy’s education system.

For Bonura, environmental learning begins with listening, empathy, and self-awareness, foundations she believes are essential before tackling more technical environmental topics.

2.7. Social Innovation and Dialogue: The Climate Streamers

Isabella Forchini, co-founder of the Climate Streamers Foundation, offers a contemporary model for dialogue-based climate education. Developed as a university project in 2021, Climate Streamers is an interactive card game designed to stimulate open, non-judgmental conversation

about climate change. Although the non-profit was established during Forchini's studies in the Netherlands, it is based on her experiences growing up in Italy, and she is working to expand its Italian work. Used in educational and community settings, the game encourages participants to share personal stories and explore emotions linked to the climate crisis, aiming to counter polarisation and eco-anxiety.

"In Italy, we don't often sit down to listen. Climate Streamers creates a space for vulnerability and connection, not confrontation."

Her experience highlights both the cultural barriers to open dialogue within Italy's traditional, hierarchical education system and the potential of playful, inclusive formats to engage younger adults (ages 20-30). She told me that the game was really about connecting with people and inviting them into a space that is vulnerable, something she noticed was needed as a part of her climate education in Italy.

Forchini's work complements the more structural advocacy of Save the Children and the grassroots activism of FFF, representing a growing emphasis on emotional intelligence, communication skills, and depolarisation in climate education.

2.8. Rethinking Learning Spaces

The initiative "Ecosistema educativo diffuso: promuovere un abitare e un apprendimento sostenibile (Widespread educational ecosystem: promoting sustainable living and learning)" was a two-year study of a network of eight schools in the Friuli Venezia Giulia region. It aimed to initiate, through a participatory planning process with the schools, as well as various local stakeholders, a pedagogical and architectural redevelopment of the schools and surrounding areas, aligned with the Sustainable Development Goals (Festival Dello Sviluppo Sostenibile, 2025b). This was intended to understand how to unite the ecosystem of the schools and their surrounding areas.

This research by Gina Chianese and Barbara Bocchi (2023) helps interpret the diverse climate and environmental education practices in Italy. Building on thinkers such as Freinet, Montessori, Malaguzzi, and Pizzigoni, Chianese and Bocchi envision the school as an open, relational ecosystem embedded in its community and territory. They argue for reconnecting architectural and pedagogical design, transforming cities into "decentralised classrooms" where formal and informal education interact.

"The school is the world, but the world is also school." (Pizzigoni, 1956)

This vision resonates across the Italian examples:

- Mitrovic's outdoor drawing workshops turn forests into classrooms; Bonura's yoga and social gardens transform the body and community into sites of learning;
- Forchini's Climate Streamers transforms dialogue itself into an educational space.

Where the space a student learns within is limited to a desk, there is a sense of confinement. The examples I learned from Italy showed me the ways that the visions of climate education could play out beyond the curriculum. School is no longer understood as a place of passive instruction but a place of activation, awareness, and active citizenship- therefore, a connection to the world beyond the classroom is needed in the education system now more than ever. While this active citizenship can be cultivated by integrating climate change into a variety of different subjects, as achieved by Minister Fioramonti, it can also be achieved through more extracurricular forms of learning, as achieved by the case studies above.

Together, these illustrate a pedagogical shift from instruction to participation, from knowledge transmission to co-creation: exactly the transformation Chianese identifies as essential for contemporary education.

2.9. Emerging Patterns and Systemic Gaps

Across the Italian cases, several cross-cutting themes emerge:

1. Lack of systemic training on climate and sustainability; heavy reliance on external actors;
2. Local projects thrive, but with limited coordination or continuity;
3. Growing emphasis on embodied, creative, and dialogue-based learning;
4. Strong civil society activism but limited institutional support for youth voice;
5. Traditional schooling and language limitations constrain innovation and access to global resources;
6. Emerging efforts to make nature, cities, and communities integral parts of the learning environment.

2.10. Summary of Learnings

Climate education in Italy is vibrant but fragmented, relying on passionate individuals rather than systemic provision. Key opportunities for strengthening it include:

- Embedding teacher training and professional development in sustainability education;
- Building bridges between formal institutions and civic organisations;
- Recognising and supporting innovative pedagogies like those of Mitrovic and Bonura;
- Expanding access to Italian-language and depolarised learning resources;
- Treating the territory itself as a learning environment, aligning with Chianese's vision of co-generated educational spaces.

Overall, Italy's experience shows that transformative climate education does not emerge from policy alone, but from creative alliances between teachers, activists, artists, and communities.

3. Finland

The Finnish school system is underpinned by a cultural model that emphasises sustainable development in its three interconnected dimensions: economic, social, and environmental (Messina, 2023). These elements are designed to operate in balance, supporting both future growth and the creation of integrated value networks. Finland's approach to education reflects this, embedding sustainability as a structural and cultural principle rather than a standalone objective.

My time in Helsinki demonstrated that a city can be green as a way of life, designed around people's wellbeing and the principles of sustainability. I travelled mostly on electric public transport - taxis, trams, and the metro - and was continually struck by how effortlessly sustainability was woven into everyday life. The Oodi Central Library was a striking example of this: an all-wood, energy-efficient public building that offers free workspaces, event venues, and a community "urban workshop." It encapsulated Helsinki's ethos: a city built with and for its citizens. Visiting schools across the region revealed the same commitment, with learning environments built around equity, curiosity, and the cultivation of agency.

Finland's leadership in sustainability is well recognised across Europe. During its 2019 Presidency of the European Council, the nation placed sustainability and the UN 2030 Agenda at the core of its programme (Messina, 2023). It ranks as the fourth greenest country in the world in Yale's Environmental Performance Index (Block et al., 2024). Within this context, climate and sustainability education are not treated as policy add-ons but as the social and moral infrastructure of Finnish life.

3.1. Policy and Systemic Context

Finland's education system, often celebrated for its excellence, is currently undergoing a profound transformation. Despite its reputation, the country faces emerging challenges: a widening gap between high- and low-performing students, growing social diversity, and the lingering effects of the pandemic on learning outcomes. Municipalities play a central role in education delivery, reflecting Finland's decentralised governance model, which grants schools and teachers significant autonomy.

Sustainability and climate change are embedded within the National Core Curriculum for General Upper Secondary Education, which defines six transversal competences: well-being, interaction, multidisciplinary and creative competence, societal competence, ethical and environmental competence, and global and cultural competence (Finnish National Agency for

Education, 2025b). Climate change appears not as a separate subject but as a cross-cutting theme to be addressed across disciplines. This structural integration aims to normalise sustainability thinking in every classroom, yet it also creates inconsistency, as implementation depends heavily on local interpretation and teacher expertise.

National reform efforts have increasingly focused on the learning environment as a driver of change. The Constructing Education framework, supported by the Council of Europe Development Bank and the European Investment Bank, has redefined what counts as “education infrastructure.” The initiative recognises that innovative architecture alone is insufficient; new schools must include funding for teacher training, collaborative planning, and community engagement. These reforms treat space, pedagogy, and sustainability as inseparable: a holistic vision of how students learn, think, and interact within ecological limits.

3.2. Institutional Practices and Teacher Perspectives: The Open Climate Guide

Educator and researcher Pinja Sipari, of the Finnish Biology and Geography Teachers’ Association, has played a role in shaping Finland’s climate pedagogy. Through her leadership of the Open Climate Guide for teachers, she has sought to make climate education subject-specific, emotionally literate, and professionally supported. The project, first launched nearly a decade ago and now being updated, offers pedagogical tools that help teachers integrate climate change meaningfully into their own disciplines (Open Climate Guide, 2025).

Sipari identifies a paradox within Finland’s curriculum design: while students repeatedly encounter climate change across subjects, the repetition can reduce engagement rather than deepen it. Teachers often return to the same generalised narratives, leaving students with the sense that they “already know this,” while lacking a systemic understanding of causes, consequences, and collective solutions. Furthermore, she notes that many teachers hesitate to discuss politically or emotionally charged aspects of climate change, fearing parental backlash or controversy.

“The law may say we have to teach it, but that doesn’t mean parents will be happy.”

In a highly decentralised system without consistent communication channels or support networks, teachers can feel isolated in addressing these complexities.

Sipari also warns against the conflation of environmental education with climate education. Activities like recycling or gardening, while valuable, are often mistaken for climate pedagogy:

“A lot of people, when they talk about climate education, actually talk about all of the good things happening in the world — and that’s not climate education.”

For her, meaningful teaching means engaging with the structural dimensions of the crisis - energy systems, justice, and interdependence - rather than limiting lessons to individual lifestyle changes.

3.3. Youth Engagement and Research Insights: the CCC-Catapult Project

Research from the CCC-Catapult Project, co-led by Essi Aarnio-Linnanvuori in its insights from Tampere, offers a window into young people's experiences of climate education in Finland. Compared to peers elsewhere in Europe, Finnish students reported lower levels of concern and participation, particularly in relation to the urgency of phasing out fossil fuels. While most students recognised the importance of the issue, fewer translated that understanding into personal or collective action (Rissanen et al., 2023).

Interviews revealed a recurring sense of hopelessness and disengagement, with young people expressing frustration toward older generations and scepticism about their own agency. Many described classroom discussions as repetitive or disconnected from real-world change, leading to what researchers termed "climate fatigue." Students called for a stronger focus on solutions, justice, and dialogue, alongside opportunities to discuss emotions and ethics.

Cited quotes from young people engaged in focus groups are as follows:

"Why should I do something for the climate if, in return, they take away my hobbies and everything fun?"

"The whole scale feels much larger when you start thinking about it alone. Many give up right away."

"We're forced to try to educate our parents because we have to live here longer. It's the responsibility of the young because parents don't understand this situation."

"It's being pushed so much, the same thing."

They (teachers) are not more knowledgeable than we are."

The project recommends that Finnish schools:

- Involve students directly in designing and evaluating climate learning experiences;
- Encourage cross-curricular collaboration to reduce redundancy and deepen understanding;
- Provide teacher training that supports dialogue, emotional resilience, and systems thinking.

The findings underscore a wider challenge: Finland's climate education is well-integrated structurally, but depth and engagement require ongoing investment in teacher capacity and youth participation.

3.4. Case Study: Otaniemi Upper Secondary School

Otaniemi Upper Secondary School, located in Espoo, illustrates how Finland's climate education can come alive through collaborative, interdisciplinary practice. The school emerged from the merger of two European Parliament Ambassador Schools, creating a new identity rooted in global citizenship and sustainability (Finnish National Agency for Education, 2025a). Teachers Maija Flinkman and Kirsi Haapamäki have been at the forefront of this transformation, working closely with the Climate University network, a national consortium linking higher education institutions to secondary schools around sustainability education.

Through Climate University training, Otaniemi's teaching team systematically mapped where climate-related content appeared in the national curriculum and coordinated how it was taught across subjects. Student feedback played a central role: many expressed fatigue from repetitive "doom narratives" and wanted learning experiences that connected science with hope and action. Teachers responded by shifting emphasis from personal responsibility to systems understanding, exploring how social, political, and ecological systems intersect.

The school has developed several distinctive initiatives:

- "Grandma's House" connects students with older residents to exchange sustainable skills such as repair and reuse, blending environmental education with social cohesion;
- Zero Emissions Day, coordinated nationally by Otaniemi, invites schools across Finland to participate in climate-positive projects, encouraging inter-school collaboration and civic visibility;
- A partnership with the Finnish Meteorological Institute and a sister school in Shanghai operates a shared weather station, allowing students to collect and analyse real-time data;
- The Planetary Garden, a collaboration with the Finnish Youth Research Society, turns the school grounds into a living laboratory. Students grow food, manage beehives, and reflect through art and writing on what it means to live within planetary boundaries, inspired by Gilles Clément's concept of the "garden in motion."

As Haapamäki reflected:

"We're not trying to handle the problems of tomorrow; we're educating for what young people will need."

Supported by the City of Espoo, Microsoft's ChangeX initiative, and national grants, Otaniemi's approach demonstrates how schools can be designed as ecosystems of sustainability: spaces that blend scientific inquiry, creativity, and collective agency.

3.5. Emerging Patterns and Systemic Gaps

Across the Finnish case studies and national insights, several patterns emerge:

1. While embedding climate change across the curriculum ensures broad exposure, it also demands structured teacher collaboration and sustained professional learning;
2. Young people want climate education that recognises emotion, justice, and meaning, not just data and doom;
3. Reforms in educational architecture must include investment in teacher support, reflection time, and community consultation;
4. Projects like Otaniemi's Planetary Garden illustrate how schools can act as living laboratories for sustainability, blending science, art, and intergenerational learning.

Overall, my time in Finland showed me an evolving paradigm in climate education, which could merge policy with pedagogy, social cohesion, and emotional literacy. The Finnish model offers valuable lessons for reimagining schools as places where students not only learn about climate change but also learn to live well within it.

4. Comparing the Italian and Finnish Approaches

The Italian and Finnish contexts illustrate two markedly different, yet ultimately complementary, models for integrating sustainability and climate education across educational systems. Each represents a distinct balance between cultural transformation and institutional infrastructure, revealing how societal values, governance traditions, and educational philosophies shape the way young people engage with the ecological transition.

4.1 Divergent Starting Points: Culture vs. System

In Italy, the ecological transition within education emerges as a cultural and moral movement, rather than a purely administrative or curricular one. The integration of climate change as a mandatory part of the curriculum was impactful, but limited in its ability to be implemented on the ground. The Manifesto for the Ecological Transition in Higher Education articulates a vision of Italian universities as civic agents- spaces where social justice, environmental ethics, and local and cultural regeneration intersect. This movement is rooted in the energy of civil society, student activism, and local networks of educators who view sustainability not as a subject, but as a moral stance.

The case studies of Elisabetta Mitrovic and Serena Bonura illustrate how this approach relies on personal agency and relational leadership. Change is driven through empathy, cooperation, and informal networks that connect universities, communities, and schools. Yet, this decentralised and voluntary mode of transformation also reveals its limits: a lack of structural coherence, dependency on individual motivation, and uneven institutional commitment.

By contrast, Finland represents the systemic integration of sustainability within education. Sustainability is not an external agenda but an internalised principle of the Finnish model itself: grounded in its national curriculum, teacher training structures, and the ethos of public service. The Finnish National Core Curriculum integrates transversal competences such as ethical, environmental, and global competence, embedding sustainability into all subjects rather than isolating it within specific disciplines. However, even in this model, sustainability education faces new challenges: repetition, emotional fatigue among students, teacher training and capacity, and the difficulty of translating structural intentions into lived pedagogical practice.

4.2 Governance and Agency

These differences reflect broader governance cultures. In Italy, change relies heavily on collective agency- bottom-up movements that pressure institutions to reimagine their social role. In Finland, reform is primarily structural, emerging through state policy, municipal autonomy, and curriculum design. Both systems display forms of decentralisation, but of very different kinds: Italy's decentralisation is cultural and civic, while Finland's is bureaucratic and pedagogical.

In Italy, this has enabled experimentation and moral imagination, such as initiatives that reconnect education with democracy. Yet, it can lead to fragmentation, with climate and sustainability education flourishing in some universities or schools while remaining peripheral elsewhere. In Finland, decentralisation is a product of trust in teachers and municipalities. The autonomy of teachers is both a strength and a constraint: it encourages innovation within classrooms, but can also isolate educators, leaving them without the collective professional learning and community support needed to navigate the emotional and political tensions of climate education.

4.3 Learning Environments

A further distinction lies in the material culture of schooling. Finnish education policy and investment, as seen through the Constructing Education framework, link sustainability not only to curriculum content but to the very architecture of learning environments. School buildings in cities like Espoo and Järvenpää are being redesigned as flexible, open, and energy-efficient spaces that encourage collaboration and wellbeing (Lefort, 2023). These physical reforms are accompanied by professional development approaches that support new pedagogies for a rapidly changing world.

In Italy, the sustainability projects I visited manifest educational institutions as symbolic and cultural spaces, where the university, for example, could become a civic hub, or the classroom as a site of dialogue and reflection. Rather than material infrastructure, transformation here is social and ethical. This distinction highlights two complementary pathways: one focused on rebuilding the physical and organisational scaffolding of education, the other on reimagining its moral and cultural foundations.

4.4 The Emotional Landscape of Climate Education

Across both contexts, teachers and students are grappling with the emotional and existential dimensions of the climate crisis. In Finland, educators like Pinja Sipari and those at Otaniemi Upper Secondary School note that repeated exposure to the same narratives of crisis can lead to disengagement and fatigue. Students report feeling overwhelmed or sceptical of the repetitive and abstract nature of climate teaching. Similarly, in Italy, educators working within the ecological transition movement confront the challenge of maintaining hope and agency amid widespread disillusionment and political inertia.

Both systems are thus searching for ways to make climate education emotionally sustainable, balancing truth-telling about the crisis with opportunities for action, creativity, and community. Finnish experiments such as the Planetary Garden and Italy's participatory university models point to the same conclusion: that sustainability education must be both intellectual and affective, combining critical understanding with emotional resilience and social solidarity.

4.5 Converging Lessons

Ultimately, the Italian and Finnish experiences converge on a shared insight: the ecological transition in education is not merely a curricular reform, but a cultural transformation. Italy's strength lies in its ability to connect sustainability to questions of meaning, justice, and civic imagination. Finland's lies in its capacity to operationalise these ideals through systemic policy, teacher autonomy, and design thinking. The most effective future models may combine both: the ethical depth of Italy's grassroots movement with the structural coherence of Finland's public system.

Together, they offer a vision of education as capable of equipping young people not just with knowledge about sustainability, but with the agency and imagination to build it.

5. Recommendations for the English Context

The English climate education landscape reflects both progress and fragmentation. While climate change appears across the national curriculum in science and geography, its delivery remains inconsistent, shaped by school type, leadership priorities, and the initiative of individual teachers. The 2025 Curriculum and Assessment Review and the DfE Sustainability and Climate Change Strategy mark important steps forward, but implementation remains non-uniform and largely voluntary. High teacher workloads, narrow accountability frameworks, and limited professional development opportunities further constrain transformative practice.

Drawing on insights from Italy and Finland, this section outlines a set of recommendations for how England could build a systemic, equitable, and empowering model of climate and

sustainability education that unites the cultural imagination of Italy with the structural coherence of Finland.

5.1. Embedding Climate in the Existing Curriculum

Learning from Finland's systemic integration and Italy's civic framing, England should define sustainability not as an optional theme but as a core purpose of education. Projects such as the Open Climate Guide show that there are significant existing opportunities to embed climate awareness within the current curriculum. This may also work to not add to the existing overwhelm in the schedules of teachers, where climate is integrated into existing topics instead of adding new topics to develop materials for. The Open Climate Guide, as well as the evidence in Italy's civil society climate education, show that there are possibilities to study many subjects through an environmental lens, and in a way which supports climate action.

Recommendation:

- Integrate sustainability and climate literacy as cross-curricular competences, akin to Finland's transversal competences, ensuring that every subject contributes to ecological understanding and action.

5.2. Invest in Teacher Agency, Capacity, and Collaboration

The evidence is clear: the quality and consistency of climate education in England depend heavily on individual passionate teachers. However, 70% report inadequate training, and high workload pressures make innovation difficult (Teach the Future and Brindle, 2021). Both Italy and Finland demonstrate that transformation requires trust, time, and networks of practice.

Recommendations:

- Integrate sustainability and eco-pedagogy into initial teacher education and core CPD frameworks, extending beyond science to all subjects;
- Fund a National Climate Education Professional Learning Network, modelled on Finland's Climate University;
- Provide protected time and small grants for teachers to co-develop materials and curricula, and cross-school partnerships;
- Recognise and reward teacher leadership in sustainability through career progression routes and fellowship programmes.

5.3. Support Whole-School and Community Approaches

Both Italian and Finnish examples highlight that climate education is most powerful when anchored in place and community. The National Education Nature Park demonstrates potential here but could move from a voluntary initiative to a whole-school, systemic approach.

Recommendations:

- Incentivise partnerships between schools, local councils, and civil society organisations to embed learning in real-world sustainability projects;
- Explain to students school decisions on changes to the school estate, for example, adding solar panels, and, where possible, include them in these decisions;
- Signpost grant funding that is available for developments in schools in areas of deprivation;
- Encourage student and teacher exchanges focused on climate literacy and democratic participation.

5.4. Centre Wellbeing, Belonging, and Emotional Literacy

Students in both Italy and Finland are supported to explore not only knowledge but also the emotional and ethical dimensions of ecological change. English schools must similarly address eco-anxiety, grief, and hope, building resilience and collective agency.

Recommendations:

- Incorporate climate and emotional literacy training into teacher CPD and pastoral programmes;
- Create and fund structured opportunities for student voice and dialogue, including eco-councils, assemblies, and peer-led climate discussions;
- Integrate philosophy, ethics, and creative reflection into sustainability education to deepen meaning and motivation.

5.5. Concluding Reflections

To move beyond piecemeal initiatives, England must reimagine climate education as a national educational mission: one that unites moral purpose with systemic delivery. Italy demonstrates how education can nurture civic imagination and ethical responsibility; Finland shows how structure and coherence sustain that vision.

A truly world-leading English model would combine both. It could create an education system where every learner can see themselves as a contributor to ecological renewal, and every school operates as a living demonstration of what a sustainable, equitable future can look like.

6. Conclusion

Across Italy, Finland, and England, a shared ambition is emerging: to prepare young people not only to understand the world's ecological challenges, but to participate in shaping its renewal. The case studies and interviews presented in this report demonstrate that effective climate education is not merely about content; it is about culture, connection, and coherence.

On a personal level, my experience has underlined that climate education is a pedagogical and democratic project. It requires investment in teachers, schools, and young people, and demands long-term transformation of the education system. Building a generation capable of solving the climate crisis- to have resilience in the face of it- means moving beyond isolated initiatives toward a shared, whole-system mission.

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8. References

- Aalto University (2022). Innovations and Creativity in Climate Education | Aalto University. [online] Aalto.fi. Available at: <https://www.aalto.fi/en/events/innovations-and-creativity-in-climate-education> [Accessed 26 Oct. 2025].
- Adams, L., Coburn-Crane, S., Sanders-Earley, A., Keeble, R., Harris, H., Taylor, J. and Taylor, B. (2023). Working Lives of Teachers and Leaders – Year 1 Research report . [online] Department for Education. Available at: https://assets.publishing.service.gov.uk/media/66f673e03b919067bb482842/Working_Lives_of_Teachers_and_Leaders_-_Year_1_Core_Research_Report.pdf [Accessed 6 Oct. 2025].
- Block, S., Emerson, J.W., Etsy, D.C., de Sherbinin, A. and Wendling, Z.A. (2024). 2024 Environmental Performance Index . [online] epi.yale.edu. Available at: <https://epi.yale.edu/downloads/2024epireport.pdf> [Accessed 20 Oct. 2025].
- Chianese, G. and Bocchi, B. (2023). Ecosistema educativo diffuso: reti innovative e connettive tra scuola e città. PEDAGOGIA OGGI, [online] 21(2), pp.132–139. doi:<https://doi.org/10.7346/PO-022023-15>.
- City of Helsinki (2024). What is Oodi? [online] Oodi. Available at: <https://oodihelsinki.fi/en/what-is-oodi/> [Accessed 20 Oct. 2025].
- Department for Education (2021). Education Secretary puts climate change at the heart of education. [online] GOV.UK. Available at: <https://www.gov.uk/government/news/education-secretary-puts-climate-change-at-the-heart-of-education--2> [Accessed 6 Oct. 2025].
- Department for Education (2022). Sustainability and climate change: a strategy for the education and children's services systems. [online] GOV.UK. Available at: <https://www.gov.uk/government/publications/sustainability-and-climate-change-strategy/sustainability-and-climate-change-a-strategy-for-the-education-and-childrens-services-systems> [Accessed 6 Oct. 2025].
- Department for Education (2023). Sustainability and Climate Change Strategy: our progress so far. [online] Gov.uk. Available at: https://assets.publishing.service.gov.uk/media/658188b323b70a0013234bdb/Sustainability_and_climate_change_strategy_-_our_progress_so_far__December_2023.pdf [Accessed 6 Oct. 2025].
- Department for Education (2024). Schools, pupils and their characteristics, Academic year 2024/25. [online] Service.gov.uk. Available at:

<https://explore-education-statistics.service.gov.uk/find-statistics/school-pupils-and-their-characteristics/2024-25> [Accessed 6 Oct. 2025].

Department for Education (2025). Curriculum and Assessment Review Curriculum and Assessment Review Interim Report. [online] Available at: https://assets.publishing.service.gov.uk/media/6821d69eced319d02c9060e3/Curriculum_and_Assessment_Review_interim_report.pdf.

Dunlop, L. and Rushton, E.A.C. (2022). Putting climate change at the heart of education: Is England's strategy a placebo for policy? *British Educational Research Journal*, [online] 48(6), pp.1083–1101. doi:<https://doi.org/10.1002/berj.3816>.

Education Support and Public First (2023). 1970s working conditions in the 2020s: Modernising the professional lives of teachers for the 21st Century. [online] [Educationsupport.org.uk](https://www.educationsupport.org.uk). Available at: <https://www.educationsupport.org.uk/media/bn2bk5a3/1970s-working-conditions-in-the-2020s.pdf> [Accessed 6 Oct. 2025].

EIB (2024). Young Italians among best informed about climate change in European Union, according to EIB survey. [online] European Investment Bank. Available at: <https://www.eib.org/en/press/all/2024-256-young-italians-among-best-informed-about-climate-change-in-european-union-according-to-eib-survey> [Accessed 25 Oct. 2025].

Festival Dello Sviluppo Sostenibile (2025a). Alla scoperta del campus sostenibile: visite guidate per le scuole. [online] <https://2025.festivalsvilupposostenibile.it>. Available at: <https://2025.festivalsvilupposostenibile.it/cal/1010/alla-scoperta-del-campus-sostenibile-visite-guidate-per-le-scuole> [Accessed 25 Oct. 2025].

Festival Dello Sviluppo Sostenibile (2025b). Ecosistema educativo diffuso: promuovere un abitare e un apprendimento sostenibile. [online] <https://2025.festivalsvilupposostenibile.it>. Available at: <https://2025.festivalsvilupposostenibile.it/cal/12/ecosistema-educativo-diffuso-promuovere-un-abitare-e-un-apprendimento-sostenibile> [Accessed 25 Oct. 2025].

Finnish Government (2019). Sustainable Europe—Sustainable Future. Finland's Presidency Programme, Presidency of the Council of the European Union 1 July–31 December. [online] eu2019.fi. Available at: <https://eu2019.fi/documents/11707387/14346258/EU2019FI-EU-puheenjohtajakauden-ohjelma-en.pdf/3556b7f1-16df-148c-6f59-2b2816611b36/EU2019FI-EU-puheenjohtajakauden-ohjelma-en.pdf> [Accessed 20 Oct. 2025].

Finnish National Agency for Education (2025a). Experiencing Europe from different angles – Jean Monnet funding supports Otaniemi general upper secondary school and the Aleksanteri Institute of the University of Helsinki. [online] Finnish National Agency for Education. Available

at:

<https://www.oph.fi/en/news/2023/experiencing-europe-different-angles-jean-monnet-funding-supports-otaniemi-general-upper> [Accessed 26 Oct. 2025].

Finnish National Agency for Education (2025b). General upper secondary education. [online]

Finnish National Agency for Education. Available at:

<https://www.oph.fi/en/education-system/general-upper-secondary-education> [Accessed 26 Oct. 2025].

Finnish Youth Research Society (2025). Planetary garden field station. [online] Youth research.

Available at:

<https://nuorisotutkimus.fi/en/research/research-projects/planetary-garden-field-station/> [Accessed 26 Oct. 2025].

Giacomo Pelizza (2024). Clima, un dialogo al Broletto sui risultati della COP29. [online]

RadioGold.it. Available at:

<https://radiogold.it/news-pavia/392471-clima-cop29-dialogo-broletto-2024-pavia/> [Accessed 25 Oct. 2025].

Gianluca Mezzofiore (2019). Italy to become first country to make learning about climate change compulsory for school students. [online] CNN. Available at:

<https://edition.cnn.com/2019/11/06/europe/italy-climate-change-school-intl-scli-scn/index.html> [Accessed 25 Oct. 2025].

Gnecco, I., Palla, A., Sposito, S. and De Vito, L. (2023). Challenging the Climate Crisis:

Children's Agency to Tackle Policy Underpinned by Learning for Transformation. Insights from Genoa, Italy. [online] CCC-CATAPULT Policy Brief 4. Available at:

<https://ccc-catapult.org/policy-briefs/> [Accessed 26 Oct. 2025].

Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R.E., Mayall, E.E., Wray, B.,

Mellor, C. and van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health*, [online] 5(12), pp.863–873. doi:[https://doi.org/10.1016/s2542-5196\(21\)00278-3](https://doi.org/10.1016/s2542-5196(21)00278-3).

King's Trust (2025). Green skills crisis is looming, warns Prince's Trust. [online]

Kingstrust.org.uk. Available at:

<https://www.kingstrust.org.uk/about-us/news-views/green-skills-crisis-is-looming> [Accessed 6 Oct. 2025].

Knight, S. and McQuaid, S. (2024). Climate Education in the Curriculum From Early Years to Further Education in England. [online] National Climate Action Plan. Available at:

<https://static.reading.ac.uk/content/PDFs/files/Planet/climate-education-in-curriculum.pdf> [Accessed 6 Oct. 2025].

Kulakiewicz, A., Long, R. and Roberts, N. (2021). Inclusion of sustainability and climate change in the national curriculum . [online] House of Commons Library. Available at: <https://researchbriefings.files.parliament.uk/documents/CDP-2021-0166/CDP-2021-0166.pdf> [Accessed 6 Oct. 2025].

Lefort, J.S. (2023). How Finland is modernising education with innovative schools. [online] European Investment Bank. Available at: <https://www.eib.org/en/essays/finland-education-school-design> [Accessed 26 Oct. 2025].

Maes, A., Pirani, M., Booth, E.R., Shen, C., Milligan, B., Jones, K.E. and Toledano, M.B. (2021). Benefit of woodland and other natural environments for adolescents' cognition and mental health. *Nature Sustainability*, [online] 4(10), pp.851–858. doi:<https://doi.org/10.1038/s41893-021-00751-1>.

McGlade, H. (2024). Climate and education: strategies for adaptation, learning and play. [online] Available at: https://epi.org.uk/wp-content/uploads/2024/12/Climate-and-education_strategies-for-adaptation-learning-and-play_Discussion-paper_EPI_LTL_Dec24.pdf.

Messina, N. (2023). Sustainable Development: A Comparison between the Finnish and the Italian Education Systems. *Sustainability*, [online] 15(10), pp.8077–8077. doi:<https://doi.org/10.3390/su15108077>.

Mitrovic, E. (2025). Notebooks in Nature. [online] Elisabettamitrovic.it. Available at: <https://www.elisabettamitrovic.it/> [Accessed 25 Oct. 2025].

National Audit Office (2023). Department for Education: sustainability overview - NAO report. [online] National Audit Office (NAO). Available at: <https://www.nao.org.uk/reports/dfe-sustainability-overview/> [Accessed 6 Oct. 2025].

National Education Nature Park (2024). National Education Nature Park, 'Annual Report 2023/2024: Year 1. [online] [educationnaturepark.org.uk](https://www.educationnaturepark.org.uk). Available at: <https://www.educationnaturepark.org.uk/sites/default/files/2024-10/Annual%20Report%202023-2024.pdf> [Accessed 6 Oct. 2025].

Natural History Museum and Robinson, L. (2022). The LEARN CitSci project | Natural History Museum. [online] [Nhm.ac.uk](https://www.nhm.ac.uk). Available at: <https://www.nhm.ac.uk/our-science/research/projects/learn-citsci.html> [Accessed 6 Oct. 2025].

OCR and Clarke, C. (2024). Striking the balance A review of 11-16 curriculum and assessment in England. [online] Cambridge OCR. Available at: <https://www.ocr.org.uk/Images/717919-striking-the-balance.pdf> [Accessed 6 Oct. 2025].

Open Climate Guide (2025). Homepage. [online] Open ilmasto-opas. Available at: <https://openilmasto-opas.fi/> [Accessed 26 Oct. 2025].

Pizzigoni, G. (1956). *Le mie lezioni ai maestri d'Italia e altri scritti*.

Reboot the Future and Cambridge University Press and Assessment (2023). *The Rebooting Education Report 2023*. [online] Rebootthefuture.org. Available at: <https://www.rebootthefuture.org/media/Rebooting-Education-Report-2023-9MB.pdf> [Accessed 6 Oct. 2025].

Rissanen, I., Aarnio-Linnanvuori, E., Mansikka-aho, A. and De Vito, L. (2023). *Challenging the Climate Crisis: Children's Agency to Tackle Policy Underpinned by Learning for Transformation. Insights from Tampere, Finland*. [online] CCC-CATAPULT Policy Brief 1. Available at: <https://ccc-catapult.org/policy-briefs/> [Accessed 26 Oct. 2025].

Riuttanen, L. (2020). *Climate University goes Aalto: Innovations and Creativity in Climate Education, 2-3 March 2020*. [online] Helsinki.fi. Available at: <https://blogs.helsinki.fi/climateuniversity/2020/03/18/climate-university-goes-aalto-innovations-and-creativity-in-climate-education-2-3-march-2020/> [Accessed 26 Oct. 2025].

Roberts, A., Hinds, J. and Camic, P.M. (2020). *Nature activities and wellbeing in children and young people: a systematic literature review*. *Journal of Adventure Education and Outdoor Learning*, [online] 20(4). doi:<https://doi.org/10.1080/14729679.2019.1660195>.

RUS Education (2024). *Education*. [online] Reterus.it. Available at: <https://reterus.it/en/education/> [Accessed 25 Oct. 2025].

Sulitest (2022). *Sulitest - Mainstreaming sustainability education worldwide*. [online] Sulitest.org. Available at: <https://www.sulitest.org/> [Accessed 26 Oct. 2025].

Teach the Future (2022). *Curriculum for a Changing Climate: A Tracked Changes Review of the Curriculum*. [online] Available at: https://cdn.prod.website-files.com/5f8805cef8a604de754618bb/637d2a3fcc8ef172df70ceda_Curriculum%20for%20a%20Changing%20Climate_%20Executive%20summary.pdf [Accessed 6 Oct. 2025].

Teach the Future (2023). *Teach the Future – Written evidence (EDU0027)*. [online] UK Parliament. Available at: <https://committees.parliament.uk/writtenevidence/120741/pdf/> [Accessed 6 Oct. 2025].

Teach the Future (2025). *Learning for the Future*. [online] Teachthefuture.uk. Available at: <https://www.teachthefuture.uk/research> [Accessed 6 Oct. 2025].

Teach the Future and Brindle, J. (2021). New research shows nearly three quarters of teachers haven't received enough training on climate change. [online] Teachthefuture.uk. Available at: <https://www.teachthefuture.uk/blog/new-research-shows-nearly-three-quarters-of-teachers-have-nt-received-enough-training-on-climate-change> [Accessed 6 Oct. 2025].

Teach the Future and Perks, D. (2024). A Year of the DfE's Climate Strategy: Progress or No Progress? [online] Teachthefuture.uk. Available at: <https://www.teachthefuture.uk/blog/a-year-of-the-dfes-climate-strategy-progress-or-no-progress> [Accessed 6 Oct. 2025].

Teacher Tapp (2024). Education for the future: principles for curriculum and assessment. [online] Teachertapp.com. Available at: <https://teachertapp.com/app/uploads/2024/06/Curriculum-assessment-.pdf> [Accessed 6 Oct. 2025].

This is Finland (2019). Finnish schools emphasise climate change education - thisisFINLAND. [online] finland.fi. Available at: <https://finland.fi/life-society/finnish-schools-emphasise-climate-change-education/> [Accessed 26 Oct. 2025].

UNIPV.news (2025). Iniziativa di raccolta rifiuti: un passo verso la sostenibilità. [online] unipv.news | Il magazine dell'Università di Pavia. Available at: <https://www.unipv.news/eventi/iniziativa-di-raccolta-rifiuti-un-passo-verso-la-sostenibilita> [Accessed 25 Oct. 2025].

University of Genoa (2025). Sustainable Energy Building (SEB) | Campus universitario di Savona. [online] Unige.it. Available at: <https://campus-savona.unige.it/en/progetti/Energia2020/SEB> [Accessed 25 Oct. 2025].

WWF Italia , Greenpeace, Legambiente, Terra and Young Italy (2025). Manifesto per la trasformazione ecologica dell'università. [online] WWF Italia. Available at: <https://www.wwf.it/pandanews/societa/universita-pubblicato-manifesto-per-trasformazione-ecologica/> [Accessed 25 Oct. 2025].