Learning for a greener and more sustainable future

SUMMARY

In a challenging environment marked by, among other issues, climate change and environmental degradation, the European economy is undergoing significant transformations. The green transition and the move towards sustainability, including the objective of achieving climate neutrality, are affecting how people live and work and changing skills requirements. Against this background, action is needed in the education and training sector to support the green transition and develop the sustainability competences of learners.

Although there is increasing activity in education and training on the environment and sustainability, learning for sustainability is not yet a systematic feature of education policy and practice across Europe. The EU is seeking to support Member States in their efforts to integrate sustainability into curricula, educational practice and professional development of educators and to ensure that learners of all ages are equipped with the knowledge to live more sustainably, develop a sense of agency and acquire the skills increasingly needed in the labour market. Emphasis is also placed on greening the activities and operations of the education and training systems.

The European Parliament has highlighted the key role of education and training in delivering a more sustainable economy and society and providing people with the skills they need to participate in the green transition. Learning for environmental sustainability should be mainstreamed across educational curricula with a lifelong learning perspective, and the environmental impact of EU programmes such as Erasmus+ and the European Solidarity Corps should be reduced. Moreover, active support should be given to teachers and trainers to ensure they are prepared and upskilled for the digital and green transformation of schools and education institutions.

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Introduction

In the context of rising global challenges, such as climate change, environmental degradation and biodiversity loss, aggravated by geopolitical instability, the European Union (EU) seeks to build a robust economy prepared for the challenges of the future. The move towards a sustainable, resilient, and inclusive economic model, empowered by an increased uptake of digital and green technologies and skills, implies structural changes in the economy, not only at EU level but also at national and regional levels, with significant employment and social consequences. The impact of the green transition on employment is already visible in some areas, with job losses resulting from the closure of coal mines and job creation related to the renewable energy sector.

Education and training systems across Europe have a fundamental role to play in the transformational changes for a more sustainable future by delivering the knowledge and skills, including sustainable education that people need to shape and cope with profound change. Citizens of all ages need to be prepared to live and act more sustainably, change consumption and production models, adopt a healthier lifestyle and contribute to a more sustainable economy and society. In addition, education, training and, especially, adult learning are essential in delivering the skills and competences needed for green jobs, and for a just and inclusive green transition.

According to the 2023 Commission communication on the Green Deal Industrial Plan, the European economy counted 4.5 million green jobs in 2019 compared to 3.2 million in 2000. Moreover, the Commission communication on the 2023 European Spring Package states that the most significant labour shortages, in addition to areas such as healthcare and long-term care, construction, ICT and related occupations, are in sectors considered key for the green transition, including renewables and energy efficiency. The communication points out that, in particular, building and acquiring skills and competences relevant for the green transition is becoming more urgent, and it is essential that Member States support the anticipation, acquisition and provision of skills for the green economy to match labour market needs and offer equal opportunities for all.

The EU contributes to the efforts of the Member States to help education and training institutions embed sustainability into teaching and learning and apply it to all aspects of their operation. The EU also supports Member States in providing learners and educators with the knowledge, skills and attitudes needed for a greener and more sustainable economy and society. Furthermore, it assists Member States in developing a common understanding of the transformative changes needed in education and training for sustainability and the green transition.

Citizens' views

Based on data from a Special Eurobarometer survey carried out in the 28 EU Member States in 2019, 94% of respondents said that protecting the environment is important to them. Moreover, 91% of the citizens stated that climate change is a serious problem in the EU. The most effective ways of tackling environmental problems were considered to be 'changing the way we consume' (33%) and 'changing the way we produce and trade' (31%). Of the respondents, 24% thought that 'providing more information and education' was the most effective way to tackle environmental problems.

In a recent Special Eurobarometer survey conducted in the 27 EU Member States in 2023, 93% of the respondents stated that climate change is a serious problem at this moment. In a list of 11 problems, citizens ranked climate change as the world’s third most serious problem (17%), after ‘poverty, hunger and lack of drinking water’ (20%) and ‘armed conflicts’ (19%); 63% of people who participated in the survey said that they had been taking individual action to fight climate change over the past 6 months.
In a 2019 survey involving more than 10,000 young people aged between 15-30 across the EU, the most mentioned priority for the EU in the years to come, identified by 67% of the respondents, was protecting the environment and fighting climate change.

Climate change, environment and eco-friendly behaviours were not taught sufficiently in schools according to 41% of the respondents.

Figure 1 – Young people’s views on the main priorities for the EU (% of respondents across the EU), 2019

Figure 2 – Young people’s views on what is not taught sufficiently in schools (% of respondents across the EU), 2019
EU policy context

The European Green Deal (EGD) communication, presented by the Commission in 2019, outlines a strategy for the EU to achieve its objectives on sustainability and the transformational changes needed in the economy and society. Regarding education and training, the communication suggests creating a European competence framework to support the development and assessment of competences on climate change and sustainable development; providing new financial support to Member States to make school buildings and operations more sustainable; and updating the Skills Agenda and the Youth Guarantee to boost employability in the green economy.

In its 2020 communication on the EU’s biodiversity strategy for 2030, the Commission commits to presenting a proposal for a Council recommendation on education for environmental sustainability and to providing guidance on teaching biodiversity for schools and teachers.

Both the EGD and the EU biodiversity strategy for 2030 acknowledge that schools, higher education and other training institutions play an essential role in engaging with learners, parents and the wider community on the changes needed for a successful green transition.

A number of EU education and training initiatives also highlight the role that education and training systems play in empowering and engaging European citizens for sustainability and enhance the skills and competences needed for a just and inclusive green transition.

For instance, the twin transition towards a green and digital Europe is one of the six dimensions covered by the 2020 Commission communication on achieving the European Education Area (EEA) by 2025. The EEA aims to support the move towards resilient education and training systems to face the challenges of these transitions, through actions including the Education for Climate Coalition, the European Sustainability Competence Framework (GreenComp), and the greening of the Erasmus+ and European Solidarity Corps (ESC) programmes.

The European Skills Agenda, presented by the Commission in 2020, supports, for instance, the development of a core set of green skills for the labour market to educate environment-conscious professionals and green economic operators. The agenda also backs embedding environmental and climate considerations into education and training.

The 2020 Council recommendation on vocational education and training for sustainable competitiveness, social fairness, and resilience recognises the key role played by the vocational education and training (VET) sector in the digital and green transitions.

The aim of the 2020 digital education action plan is to develop high-quality, inclusive and accessible European digital education. It also underlines that digital technologies are powerful enablers for the green transition, while at the same time facilitating environmentally-friendly behavioural changes in both the development and use of digital products.

The March 2023 Council conclusions on skills and competences for the green transition state that initial and continuing VET, higher education and adult learning play an essential role in making the green transition a reality. Member States are invited, for instance, to support the development and

Employment and skills implications of the EGD

In 2021, the European Centre for the Development of Vocational Training (Cedefop) published a skills forecast on the likely employment and skills implications of the EGD. Implementing the policies supporting the EGD would potentially generate 2.5 million additional jobs in the EU by 2030, with employment gains for almost all occupational categories, and not only highly-skilled occupations such as scientists and researchers. It is predicted that the benefits for employment will mostly concentrate in sectors that directly benefit from EGD policies, such as waste management and construction. Indirect employment benefits are forecast in several service sectors, such as engineering. On the other hand, sectors such as mining and quarrying are expected to suffer a heavily negative impact.
delivery of learning opportunities for the green transition, and involve education and training providers, employers, social partners and other relevant stakeholders in identifying the reskilling and upskilling needs for the green transition. Educators and guidance professionals, among others, should be supported in acquiring and updating skills and competences needed to contribute to the green transition and sustainable development.

Examples of EU action on learning for the green transition and sustainable development

Across the EU, an increasing number of initiatives and actions on the climate and biodiversity crisis have been put in place in the education and training sector. Although this reflects growing interest and engagement, further efforts are needed to ensure that learning for sustainability becomes a systemic feature of policy and practice in the EU.

The Council adopted its recommendation on learning for the green transition and sustainable development in June 2022. The recommendation aims to support Member States in integrating sustainability into all aspects of education and training and to foster cooperation and exchange at EU level on learning for sustainability. It calls on Member States to, among other things, make learning for the green transition and sustainable development a priority area in education and training policies and programmes; provide learners of all ages with opportunities to learn about the environment and sustainability in formal, non-formal and informal settings; make national and EU funds available for investment in tools, training, infrastructure and resources; and support educators to take part in professional development programmes related to sustainability.

To supplement the Commission proposal for the above-mentioned Council recommendation, the Commission published a staff working document including feedback from the public consultation and good practice examples from across Europe. The Commission also requested three studies that fed into the proposal for the Council recommendation. The first study was a comparative analysis of Member States' national and institutional practices, processes, tools and strategies in the delivery of education for environmental sustainability. The second examined the outcomes of Erasmus+ projects focusing on education for environmental sustainability implemented between 2014 and 2020, and summarised the main findings of 15 case studies. Finally, the third study focused on education for sustainable development in the context of the COVID-19 pandemic and the twin transitions.

The Commission also put forward a European sustainability competence framework (GreenComp) in January 2022 to accompany its proposal. The framework outlines a set of competences to help people develop knowledge, skills and attitudes to live, work and act in a sustainable manner. It is intended to be used in education and training programmes for learners of any age and in any learning setting. Developed in close collaboration with a group of experts and

GreenComp

As a reference tool, GreenComp provides the following consensual definition: ‘A sustainability competence empowers learners to embody sustainability values, and embrace complex systems, in order to take or request action that restores and maintains eco-system health and enhances justice, generating visions for sustainable futures.’ GreenComp identifies four competence areas; sustainability as a competence encompasses all four areas together. Each area covers three competences that are sub-elements of the sustainability competence.

For instance, the ‘embracing complexity in sustainability’ competence area, which includes the ‘systems thinking’, ‘critical thinking’ and ‘problem framing’ competences, is about empowering learners to better see the connections between specific issues and environmental changes. This in turn can help to correctly map challenges as a sustainability problem and take action. As another competence area, ‘acting for sustainability’, which includes the ‘policy agency’, ‘collective action’ and ‘individual initiative’ competences, encourages learners to act individually and collectively to shape sustainable futures, and to demand action from those responsible to tackle sustainability problems.
stakeholders working in the field of sustainability education and lifelong learning, it was translated into all EU official languages. In March 2023, the GreenComp community, which connects people and organisations using GreenComp, was launched.

In a follow-up to the Council recommendation on learning for the green transition and sustainable development, the Commission’s Working Group on Schools: Learning for Sustainability, including policy makers, social partners and stakeholders, continues to provide a forum for peer learning and exchange of best practices. In addition to the input papers and key policy messages published so far, this year the working group is addressing topics such as sustainable infrastructure and learning environments and assessment of sustainability competences.

The Commission’s Working Group on VET and the Green Transition enables exchanges on how to adapt VET to the needs of the green transition. In 2023, the Working Group published a compendium setting out policies and practices that are being developed and implemented across the Member States, candidate countries, EFTA and beyond, to support VET in contributing to the green transition. As exchanges are ongoing, further editions will follow, with a broader geographical and thematic coverage.

The Education for Climate Coalition is a community of learners, teachers and education stakeholders who network, exchange and co-create solutions related to sustainability and the green transition. Launched in 2020, its design and mission statement was developed in a participatory way following a survey addressed to the education community across the EU. In November 2021, during the first Education for Climate Day, community members developed and agreed on the first community challenges. Earlier in 2023, country groups were established in the Member States. The third Education for Climate Day event, which will be held in November 2023, will focus on ‘Boosting green competences for a sustainable future’. Through the Education for Climate platform, the Coalition informs the public about its goals, pledges and achievements.

The Erasmus+ Teacher Academies support networking and cooperation between teacher education institutions and training providers to develop teacher education. Three of the academies, launched in 2022 with a duration of 3 years each, focus specifically on sustainability.

The Centres of Vocational Excellence (CoVEs) bring together a wide range of local stakeholders, such as VET providers, employers and employment services, providing quality vocational education to

### Taxonomy of skills for the green transition

In 2022, the Commission published a taxonomy (classification system) of skills for the green transition in the multilingual classification of European Skills, Competences, Qualifications and Occupations (ESCO). The classification, including 381 skills, 185 knowledge concepts, and five transversal skills, contributes to a common understanding of what skills are needed to meet the labour market requirements in the context of a successful and fair green transition. ESCO also specifies what skills and knowledge concepts are essential or optional for specific occupations. Examples of skills labelled as ‘green’ include how to conduct energy audits and measure the sustainability of tourism activities, while ‘green knowledge’ concepts include, for instance, emission standards and ecological principles. ‘Green transversal skills’ cover, among other things, the evaluation of how personal behaviour affects the environment.

The publication provides the following definitions:

- **Green skills and knowledge concepts**: the knowledge, abilities, values and attitudes needed to live in, develop and support a society which reduces the impact of human activity on the environment (European Centre for the Development of Vocational Training, Cedefop).

- **Transversal skills**: Learned and proven abilities which are commonly seen as necessary or valuable for effective action in virtually any kind of work, learning or life activity. They are “transversal” because they are not exclusively related to any particular context (job, occupation, academic discipline, occupational sector, group of occupational sectors, etc.) (European Skills/Competences, Qualifications and Occupations Classification, ESCO).
young people and adults. CoVEs allow VET institutions to quickly adapt skills provision to changing economic and social needs, including the digital and green transitions.

Launched in 2021, the European Innovative Teaching Award highlights innovative teaching and learning practices responding to the new challenges in education and training across Europe. In 2022, 50 outstanding projects which focused on sustainability were selected.

Another initiative, ‘Researchers at schools’, promotes direct interaction between researchers, teachers and pupils of all ages and creates unique occasions for researchers to present the role that research plays on topics such as combating climate change.

The EU Learning Corner is a source of teaching and learning materials for primary and secondary schools on sustainability and the climate and environmental crisis.

The Commission’s 2022 progress report on achieving the EEA by 2025 points out that the Commission is working on EU-level indicators to acknowledge the role of education and training for a successful green transition. The work is guided by the 2022 Council recommendation on learning for the green transition and sustainable development and inspired by GreenComp.

EU funding

Sustainability education is supported through several EU programmes and instruments.

For instance, the 2021-2027 Erasmus+ programme has a stronger focus on the green transition and sustainability in education and training. In addition, the ESC programme gives priority to environmental protection, sustainable development and climate action. Support for embedding sustainability in education and training is also provided by the cohesion policy funds, including the European Social Fund Plus (ESF+) and the European Regional Development Fund (ERDF). The Recovery and Resilience Facility (RRF), which is the centrepiece of the NextGenerationEU recovery instrument, supports, among other things, infrastructure development for education and training.

Funding for sustainable education infrastructure and skills development can also be accessed through the InvestEU programme, which supports sustainable investment, innovation and job creation in Europe. The Horizon Europe programme, the EU’s key funding programme for research and innovation, has a dedicated call on climate change and sustainability education. The Technical Support Instrument (TSI) provides technical support to Member States to design and implement reforms in a wide range of policy areas; it can facilitate the structural transformation of education and training systems in Member States.

Greening learning mobility and exchange

The Erasmus+ and ESC programmes encourage mobility activities using lower-carbon transport, especially the train. Since 2021, for instance, additional support has been introduced for Erasmus+ participants who choose environmentally friendly means of transport, and they might also have more days for travelling. Moreover, to make the management of mobility greener, higher education institutions participating in the Erasmus+ exchanges can benefit from the Erasmus Without Paper Network, a digital solution to manage their mobility students online. The Erasmus+ App provides access to the information and services students need throughout their mobility, and enables higher education institutions to share events or other useful information with their students on mobility. The SALTO Resource Centre on green transition and sustainable development, hosted by the French Erasmus+ National Agency, was launched in March 2023. Its aim is to support the implementation of the green dimension of Erasmus+ and ESC, by, for instance, gathering and sharing good practices and helping Erasmus+ national agencies to increase their capacity for green practices.
European Parliament

The European Parliament has addressed the role of education and training in promoting green transition and sustainability in a number of documents.

For instance, Parliament adopted its resolution on the EGD in January 2020. It welcomed the fact that the Commission intended to update the New Skills Agenda and the Youth Guarantee to boost employability in the green economy, and it encouraged Member States to invest in education and training systems. Parliament also mentioned the need to promote green mobility in the 2021-2027 Erasmus+ programme in order to be in line with the objectives of the Commission communication on the EGD.

In its September 2020 resolution on 'Effective measures to "green" Erasmus+, Creative Europe and the European Solidarity Corps', Parliament asked the Commission and the national agencies to establish criteria to ensure that the environmental aspects of the projects are considered in the project evaluation. It urged the Commission to enable participants to choose the least polluting transport modes. It also requested that extra costs and journey times associated with using more environmentally friendly means of transport can be fully reimbursed and extra journey times be taken into account when grants are allocated. Parliament noted that the smart use of, for instance, digital technologies could potentially reduce the carbon footprint of the above-mentioned programmes. However, it pointed out that the expansion of digitalisation could affect the environment. It stressed that effective greening measures for these programmes will come at a cost, underlining that new measures must not further reduce already extremely limited budgets. A 2020 in-depth analysis requested by the Parliament’s Committee on Culture and Education (CULT) looked at how these three programmes running at that time addressed environmental challenges.

In February 2021, Parliament adopted a resolution on the European Skills Agenda. It recalled that the modernisation of vocational, education and training systems is crucial not only in preparing young people and adults for the green and digital transitions, but also in ensuring that core age and older workers preserve and develop the skills needed to maintain employability and extend working life. Parliament highlighted that an effective policy package needs to be adopted to provide active support to teachers and trainers with the aim of ensuring they are prepared and possess the skills for the digital and green transformation of schools and education systems.

Parliament’s November 2021 resolution on the EEA stressed the importance of preparing education systems to address the climate crisis. Parliament requested that Member States promote education related to climate change and the ecological transition. In May 2022, Parliament adopted the resolution on 'Establishing the European Education Area by 2025 − micro credentials, individual learning accounts and learning for a sustainable environment'. Parliament believed that sustainability learning should be mainstreamed – also through education on European and global citizenship – across educational curricula in the EU with a lifelong learning perspective, thus enabling learners to actively participate in creating more inclusive and sustainable societies. It also underlined that increased participation in adult learning programmes is linked to, for example, improvements in environmental literacy and better relationship with the environment.
MAIN REFERENCES


Council conclusions on skills and competences for the green transition, 7089/23, Council of the European Union, 7 March 2023.

European Commission websites on Green education initiatives and Learning for the green transition and sustainable development.

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