

Taking Action for Climate Change

Teaching about, through, and for climate literacy in schools

Education must be part of how we address the challenges posed by climate change. Climate literacy is an important part of Ireland's climate actions, moving from a marginal issue to a key concern in education policy, curricular developments, and pedagogical approaches. Recent education policies in Ireland promote opportunities for Education for Sustainability and Global Citizenship, including climate literacy. Through student agency, climate literacy adopts a pedagogy of hope, whereby fully informed citizens can take informed actions which collectively will make a difference.



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Introduction

Climate change caused by global warming is already transforming life on Earth. It is the defining challenge of our time, the most significant issue facing all citizens today. Evidence of climate change is compelling. With heat waves in the US, wildfires in Europe, floods in Asia, and famine in the Horn of Africa, summer 2022 clearly illustrates the reality of climate change.

In 2015, 193 countries adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs), one of which is climate change (UN General Assembly, 2015). In December 2015, at the Paris Climate Conference – the 21st meeting of the Conference of the Parties, otherwise known as COP21 – 195 countries adopted the first-ever universal, global climate deal, officially agreeing to maintain global warming below 2 degrees Celsius. This commitment marks an unprecedented international consensus on the need to transition from fossil fuels within the next few decades. Indeed, the window of opportunity to secure a liveable and sustainable future for all is rapidly closing (IPCC, 2022).

To maintain hope and a sense of agency, climate literacy has to be part of the solution to the challenges posed by a warmer Earth. Situated in the fields of Education for Sustainability and Global Citizenship Education, climate literacy is recognised as a core action for addressing climate change. Climate literacy helps students understand and address the impacts of the climate crisis, empowering them with the knowledge, skills, values, and attitudes needed to act as agents of change.

Current context and policy developments

The Intergovernmental Panel on Climate Change (IPCC) is the authoritative voice of climate science. Established in 1988 by the

United Nations Environment Programme and the World Meteorological Organisation, the IPCC is a partnership between climate scientists and governments. It aims to supply an objective perspective on the current state of knowledge about climate change and its likely impacts.

In October 2018, four years ago, the IPCC reported that the world has 12 years left for global warming to be kept to a maximum of 1.5 degrees. Any increase beyond this will significantly increase the risks of drought, floods, extreme heat, and poverty for hundreds of millions of people. In 2021, the IPCC's sixth assessment report warned that human changes to the climate were becoming irreversible, with potentially catastrophic impacts. Climate action has been further jeopardised by soaring energy prices and the war in Ukraine.

On 25 September 2015, Transforming Our World: The 2030 Agenda for Sustainable Development was adopted at the UN. Ireland co-led the negotiations alongside Kenya. The Agenda is a universal plan of action for people, planet, prosperity, and peace. Through 17 integrated SDGs, Agenda 2030 addresses three dimensions of sustainable development – economic, social, and environment – to be achieved by 2030.

The SDGs are universal in application and aim to address poverty, hunger and food systems, health, education, gender equality, clean water and sanitation, energy, economic growth, decent jobs, industrialisation, inequalities, cities and human settlements, sustainable consumption and production, climate change, oceans, ecosystems, and peace and justice. While all goals address climate change implicitly, SDG 13 explicitly addresses climate change and climate action as an overarching development issue.

In Ireland, there are several national educational strategies and action plans which promote education for sustainability and global citizenship: the 2nd National Strategy on Education for Sustainable Development: ESD to 2030 (Government of Ireland, 2022), Climate Action Plan 2021 (Government of Ireland, 2021) and Irish Aid's Global Citizenship Education Strategy 2021–2025 (Irish Aid, 2021).

Education is a critical agent in addressing climate change. Without knowledge of the intricacies of the biodiversity crisis, climate science, and the interconnected social justice issues associated with environmental degradation, how can we as citizens deliver innovative solutions to address these complex problems?

SDG 4 aims 'to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all' (UN General Assembly, 2015). Within this goal, Target 4.7 calls for countries to 'ensure that all learners acquire the knowledge and skills needed to promote sustainable development'. Education for Sustainable Development (ESD) works to equip learners with the relevant knowledge, skills, values, and attitudes needed to create a sustainable and equitable world for all.

Ireland's 2nd National Strategy on Education for Sustainable Development: ESD to 2030 contains ambitious actions to further incorporate education for

sustainable development from early years to further and higher education. Its commitments include:

- Developing existing and new frameworks and tools to monitor and evaluate progress on ESD and enhance accountability.
- Promoting and supporting the use of ESD pedagogies among educators.
- Systematic and comprehensive ESD capacity development in pre-service and in-service training and assessment of educators at all levels of the education system.
- Further embedding ESD in curricula and programmes to ensure learners acquire knowledge, skills, values, and dispositions to promote and advance and take action for sustainable development.
- Ensuring that ESD competencies are core to learning outcomes.
- Developing leadership for ESD.
- Ensuring access to high-quality resources for ESD.
- Transforming Early Learning and Care settings, schools, and campus environments into places and educational spaces for sustainability.

Teacher education

Global Citizenship Education (GCE) initiatives, including climate literacy, in teacher education in Ireland are currently funded by Irish Aid at the Department of Foreign Affairs. At primary level, Irish Aid supports the Development Education and Intercultural Education (DICE) project, which was established in 2003, and supports the integration of GCE into initial teacher education (ITE) at primary level. All primary teachers educated in Ireland now receive some level of preparation on GCE. In partnership with the Ubuntu Network, Irish Aid supports the delivery of GCE to post-primary student teachers in 11 higher education institutions in Ireland (Irish Aid, 2021).

The Teaching Council, as the professional regulatory body, has statutory responsibility for accrediting ITE programmes and for registering post-primary teachers (Government of Ireland, 2018). Revised standards of accreditation, Céim – Standards for Initial Teacher Education, were published by the Teaching Council in 2020. Céim sets out the requirements that all ITE programmes in Ireland must meet to gain accreditation.

It is also a benchmark for anybody seeking to register as a teacher in Ireland. Under Céim, all ITE programmes shall include the core elements of GCE, which include Education for Sustainable Development, Wellbeing (personal and community), Social Justice, and Interculturalism. This development enhances the opportunities for teacher educators to incorporate climate change education into initial undergraduate and postgraduate teacher education programmes.

To support climate literacy in teacher education, lecturers from Mary Immaculate College are conducting extensive research in theoretical perspectives and pedagogical approaches. This work includes the publication of *Teaching Climate Change in Primary Schools: An Interdisciplinary Approach* (Dolan, 2022). This important and timely book

provides an overview of climate change and highlights the importance of climate literacy in primary schools and of cross-curricular pedagogical approaches with a focus on climate justice, providing in-depth assistance for teaching children aged 3–13 years.

Informed by the latest international research, the book helps teachers remain faithful to the science without overwhelming children. Accompanied by online resources, it includes practical ideas and lesson plans that will help teachers to include climate change literacy in their classrooms in a cross-curricular manner. It is written for student teachers and primary teachers and is designed to enhance climate change literacy in teacher education and primary schools. A book for post-primary teachers is currently being compiled.

Curricular developments with opportunities for climate literacy

There have been significant curricular developments in the formal education sector in Ireland, with many opportunities for promoting climate literacy. Recent initiatives include the development of a framework for early years (Aistear), a new Junior Cycle framework, and the start of a review of Senior Cycle education. The Primary Curriculum is currently under review.

Aistear: the Early Childhood Curriculum Framework describes learning and development using four interconnected themes: well-being, identity and belonging, communicating, and exploring and thinking. It can be used in a range of settings, including day care, playgroups, naíonraí preschools, and early-years classrooms in primary schools. For young children, climate literacy is about fostering a connection to nature, developing an understanding of how human choices shape our world, and conducting positive environmental actions such as planting seeds and harvesting vegetables.

In primary schools, climate literacy can be taught both within and beyond individual curricular areas. A strand on Environmental Awareness and Care currently features in both the geography and science curricula. For many schools, this is the traditional home for climate literacy. However, integrated teaching and cross-curricular perspectives reflect the multidimensional nature of climate change (Dolan, 2022).

A new programme for the primary education sector, Global Village, funded by Irish Aid, seeks to ensure that primary school children are supported to be active global citizens committed to building a fairer and more sustainable world. Global Village is managed by four partners: Dublin City University, the Irish National Teachers' Organisation, the Irish Primary Principals' Network, and Trócaire.

Education for sustainable development, with a focus on climate, biodiversity, and child agency, will feature prominently in the new primary curriculum. The Draft Primary Curriculum Framework includes the competency of active citizenship with the following attributes (NCCA, 2020, p.10):

Developing an understanding and acting on the rights and responsibilities of myself and others.

Experiencing learning through democratic practices.

Recognising injustice and inequality and ways to take action.

Developing capacity to make choices in favour of a sustainable future.

According to the NCCA, 'this competency develops children's capacity and motivation for active and meaningful participation in society at local, national and global levels, and fosters their ability to contribute positively and compassionately towards the creation of a more sustainable and just world' (ibid., p.8).

In many post-primary schools in Ireland, climate change has become a common discussion point not just in Geography, Science, Politics and Society, and Agricultural Science, but also in Maths, Art, Business, CSPE (Civics, Social and Political Education), Home Economics, SPHE (Social, Personal and Health Education), Music, PE (Physical Education), and all the language subjects. Many schools are showcasing excellent research and innovation in climate action, supported by organisations and initiatives such as Worldwise Global Schools, Green Schools, Heritage Ireland, Sustainable Energy Authority of Ireland (SEAI), Science Foundation Ireland, and Young Scientist of the Year.

As part of the broader redevelopment of Senior Cycle, it is envisaged that a new specification for Leaving Certificate Climate Action and Sustainable Development will be introduced in network schools from September 2024, with a national rollout from September 2025. This commitment represents official recognition of the importance of climate literacy for students, schools, and society.

Many universities and higher education institutions are currently reviewing their provision of courses and structures to address the challenges posed by climate change. Dublin City University, for instance, recently opened its Centre for Climate and Society. Mary Immaculate College has just launched a Master of Education programme in Education for Sustainability and Global Citizenship Education (MIC, 2022), designed to equip educators with the pedagogies and theoretical frameworks to consider issues relating to climate, biodiversity, and citizenship.

The programme at MIC is aimed at those working in education, including preschool practitioners, primary and secondary teachers, and those working in non-formal education. It aims to focus on agency through GCE, empowering students of all ages to assume active roles, both locally and globally, in building more peaceful, tolerant, inclusive, and secure societies. It is a blended programme that can be done part-time over two years or full-time in one year, with the on-campus parts taking place in Limerick. It also includes field trips to sites including the Burren, Cloughjordan Ecovillage, and Galway Atlantaquaria.

Conclusion

Transition to a low-carbon, climate-resilient economy must be part of the solution to the challenges posed by climate change. This makes economic, social, and environmental sense. Education has to be part of this agenda. Climate literacy is an important part of Ireland's climate actions, moving from a marginal issue to a key concern in Irish education policy, curricular developments, and pedagogical approaches.

Recent education policies in Ireland promote opportunities for Education for Sustainability and Global Citizenship, including climate literacy. Climate and environmental literacy will ultimately create jobs, generate more informed consumers, and allow citizens to engage meaningfully with their local and national governments to address the climate crisis. Climate literacy recognises student agency, where student voice and student-led learning are core components. Through student agency, climate literacy adopts a pedagogy of hope whereby fully informed citizens can take informed actions which collectively will make a difference.

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