UKRI Research England

REIMAGINING UNIVERSITY-LED CLIMATE EDUCATION

EVIDENCE-INFORMED RECOMMENDATIONS FOR POLICYMAKERS

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National Civic Impact Accelerator

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OVERVIEW

There has been a steady increase in universities developing and delivering climate education since 2019, when the UK passed legislation amending the Climate Change Act 2008 to set a new legally binding target of achieving net zero emissions by 2050. This has seen a steady evolution beyond scientific knowledge, building on research and evidence to communicate in education settings. However, it is widely agreed that progress towards effective climate education has been insufficient, as the curriculum struggles to keep up-to-date with the science, and the current offer being perceived as piecemeal, leading to growing calls for a more radical and action-orientated approach across England's higher education (HE) landscape (see Pearson, 2021, Thew et al, 2021, Geer et al, 2023).

The civic university agenda, which supports institutions to build mutually beneficial partnerships in their local place, is well-positioned to build on universities' climate education work to date, by supporting climate and sustainability education for people of all ages, anchored to their location. This is because the civic agenda aims to increase the connectivity, momentum, and effectiveness of HE sector activities for local societal, economic, and environmental benefit, while responding to policy priorities. In practice, this means bringing together universities, local government, business groups, and the community sector to drive policy and practice, innovation, and collaborations, delivering place-based transformations. If utilised effectively, this agenda offers universities new ways to approach climate education, by integrating a greater *place focus* into their work – which means understanding and collaboratively responding to the specific needs of local communities (CUN and NCIA, 2024). This is vital as the current UK government moves towards greater working in place, with accelerated devolution deals giving local areas (Strategic Authorities) wide-ranging legal power and powers to set funding priorities to deliver in defined areas of competence (see p.6).

There is synergy between the work being undertaken by universities and that of their regional partners, creating opportunities for strong partnerships, focused on delivering impactful climate education programmes and research. In practice, three of the government's 'areas of competence' speak to both the climate education and the civic university agenda. These areas of competence are:

- skills and employment support
- environment and climate change
- economic development and regeneration.

This creates opportunities for universities to work with both place-based and national policymakers to develop and hone ambitious climate education provision that has a civic focus at its core.

This paper draws on research into civic climate higher education, undertaken by the Institute for Community Studies at The Young Foundation, alongside analysis of current English climate education policy. It aims to outline new opportunities for evidence-informed civic approaches to climate education, building in the flexibility to enable each place and its communities to recognise and take advantage of their unique assets and resources, and match their economic and community requirements.

This paper comes at a crucial time, with the Curriculum and Assessment Review interim report completed, and the government now moving into the development stage of the new curriculum, in which they have agreed a greater focus on school-based climate change

education. It also builds on the evolution seen in HE and the civic university agendas. And it sits alongside the growing need to reskill, upskill and enable people of all ages to effectively move out of 'sunset sectors'.

This highlights the need for policymakers in mainstream education, adult education, and regional-level skills development and training, to consider the role that universities can play in developing, delivering and evaluating the impact of climate education, to prepare people and support them to take advantage of the regional opportunities that the energy transition will offer.

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RESEARCH FINDINGS

The Institute for Community Studies' research found that HE institutions are well-placed to deliver high-impact climate education to their local communities, as well as to their students, due to their specific skills, knowledge and experience. Case studies within the research point to three cross-cutting themes within current university best practice, which can be used to frame civic climate education and show how it can positively impact people, education and skills:

- **Place-based working** Education focused on the specific characteristics, challenges and resources of the place a project is located. This cvould demonstrate a place-based approach to sustainability in various ways, including a focus on local challenges, creating a local skills pipeline, and customising knowledge to local conditions and needs.

- **Collaborative working** Building collaborative relationships in their places with a range of actors, aligning priorities, sharing resources and learning from each to deliver coordinated learning aimed at making people aware of local needs and how they could be addressed.

- **Knowledge translation** Universities are particularly well-placed to conduct knowledge translation, communicating complex information in ways that are suitable to target audiences, and are place-specific, meaningful and action-orientated. The research found this is crucial to get community buy-in.

Alongside these themes, the Institute for Community Studies' research found common enablers and challenges across best practice case studies that could support policymakers to develop effective climate education policy. Regional and national policymakers can use these to inform a framework for effective and robust civic climate education. At a place-based level, this could help support locally-informed education programmes for those in 'sunset sectors', for job seekers, or for those looking to transition into new sectors. Working with regional policymakers, this approach would help ensure the greater flexibility offered through devolution leads to locally-relevant adult skills training and climate change education provision, that in turn delivers the skills communities require to take advantage of new climate-related jobs.

At a national level, universities can support policymakers to develop flexible climate education that meets Curriculum and Assessment Review calls. Flexibility should be built into the curriculum, enabling regions to develop climate change education that reflects their students work opportunities and challenges in their place.

A key finding from the research is that each institution and place has their own unique challenges and resources. The best practice found recognises and utilises these in their practice. This highlights that a 'one size fits all' approach to climate education would limit impact, making it crucial that policymakers focus on supporting place-specific good practice, rather than looking for a replicable model to use across England.

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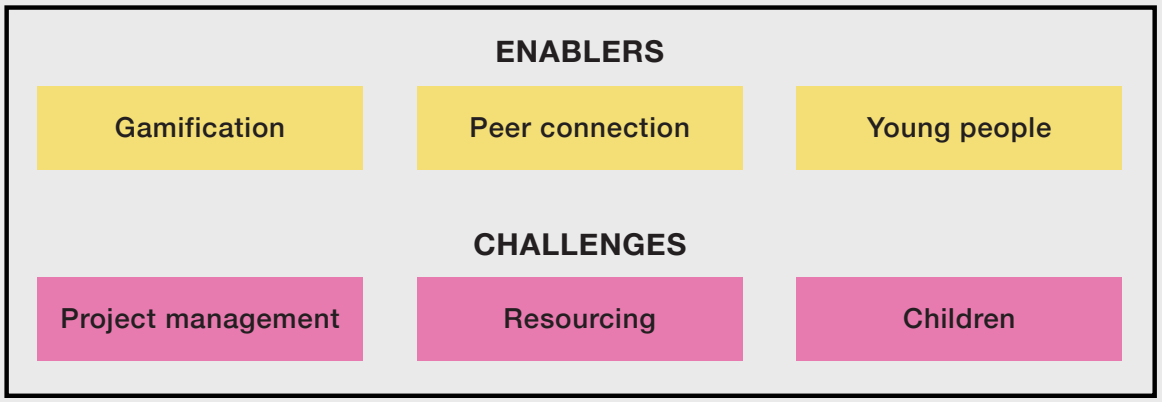
ENABLERS AND CHALLENGES

The case studies in the Institute for Community Studies research highlight factors that can contribute to or detract from the delivery of successful civic climate education. These were identified by project teams, or through comparative analysis of the case studies.



Enablers

- **Gamification** this refers to the application of game play in climate education. Several project teams reflected on the perceived importance of bringing lightness to a topic that can otherwise feel overwhelming and disengaging. Using gamification can break down barriers to engaging people of all ages in this and other complex subject areas.

- **Peer connection** nurturing connections between learners can drive collective action and generate solutions to tackle the climate crisis.

- **Engaging young people (aged 11-18)** this group is particularly important in climate education, given that climate change and environmental action is expected to transform their lives as adults. Additionally, young people have the potential to bring about transformative change by creating and enacting solutions.

Challenges

- **Project management** in the Institute for Community Studies research, several project teams reflected on the importance of project management capabilities to enable collaborative approaches to climate education, both within and between institutions.

- **Resourcing** civic climate education initiatives can be resource-intensive and may require both staff time and other resources. Several teams reflected on how their work was resourced, enabling them to take part in a successful initiative. However, there was recognition that resources often depend on the goodwill of leaders and institutions, or on piecemeal funding, which is not a sustainable model.

- **Engaging children (5-16)** children are currently underserved in this space, with the Curriculum and Assessment Review interim report finding that climate education is not delivered consistently across places and schools. However, climate education for children is crucial, equipping children to navigate climate change, environmental action and green careers.

CLIMATE EDUCATION POLICY

Overview

In 2019, the UK passed legislation amending the Climate Change Act 2008 to set a new legally binding target of achieving net zero emissions by 2050. A range of policy papers have since been published, which have either focused entirely or included a substantial focus on net zero skills. Each has recognised the key role for universities in delivering the seismic shift required to meet the skills gap the UK faces, pointing to universities having the staff capable of delivering on our climate ambitions.

Some examples of these papers and the wide-ranging roles they suggest universities could have in delivering net zero skills include:

- Green Jobs Taskforce report
  2021, suggests universities prioritise elements of Masters and doctoral-level studies that support green careers, underpin research and development for net zero, and enhance the capacity of college and university staff in mainstream tertiary climate education.

- Sustainability and climate change: a strategy for the education and children's services systems
  2023, suggests universities deliver an annual International Green Skills Conference.

- MISSION ZERO - Independent Review of Net Zero
  2023, suggests universities take a lead role in a place-based approach, aimed at delivering local support, better tailored to local needs, with the overarching aim of bringing economic and social benefits.

- A Net Zero workforce
  2023, suggests universities develop updated strategic plans to address net zero skills and lifelong learning provision; and build local skills plans that link businesses with universities and colleges and reflect local dynamics.

What is clear from these papers is that universities should play a crucial role in delivering climate education and skills at the pace required by energy transition and climate related sectors.

DEVOLUTION AND LIFELONG LEARNING

In December 2024, the UK government published the English Devolution White Paper - followed by the English Devolution and Community Empowerment Bill which sets out how devolution will provide places with the tools they need to deliver the government's Plan for Change.

The main policy levers the paper sets out are the proposed 'areas of competence', which will give combined authorities the mandate to act strategically to drive growth and help shape public services.

The list has scope to expand over time. However, currently, there are seven areas:
1. Transport and local infrastructure
2. Skills and employment support
3. Housing and strategic planning
4. Economic development and regeneration
5. Environment and climate change
6. Health, wellbeing and public service reform
7. Public safety

Of these seven areas, three (skills and employment support, economic development and regeneration, and environment and climate change) will require effective climate-related education, if regions are to successfully deliver on the government's ambitions.
Reviewing the breakdown of each of these areas, there are some clear climate-related skills roles where universities are well-placed to support development, delivery, and evaluation.

Skills and employment support

- **Local Skills Improvement Plan development**
  Universities are well-placed to develop, deliver and evaluate skills plans for climate-related jobs and sectors, including mapping climate skills requirements and priorities across sectors.

- **Adult Education Budget**
  Universities have experience in co-designing courses and could work with combined authorities and Further Education (FE) providers on climate-related employment support - including working together to draft policy objectives, and potential funding parameters of future programmes.

Economic development and regeneration

- **Small Business Strategy**
  Universities could play a valuable role working with combined authorities to map how climate-related skills can accelerate the development and implementation of the Small Business Strategy. That could include considering how climate-related skills can align to increase small business growth and productivity in their region, and how the new Business Growth Service could turbo-charge the delivery of these skills.

- **Growth Hubs**
  Universities could work with Growth Hubs to develop climate skills offers to businesses that work in tandem with the existing core suite of business growth products, to increase climate-related skills and support businesses to develop climate-related products.

Environment and climate change

- **Environmental and climate leadership**
  Universities could work with Combined Authorities to develop education on specific issues, such as water management, the circular economy, pollution, and flood resilience. Building on that case, the next step would be for universities and Combined Authorities to develop broader, region-specific climate leadership skills and knowledge training and support focused on what 'good' local environmental leadership should look like.

CIVIC CLIMATE EDUCATION IN SCHOOLS

In 2022, the Department for Education (DfE) launched its Sustainability and Climate Change strategy, aiming to ensure England becomes 'the world-leading education sector in sustainability and climate change by 2030'.

The strategy covers four action areas:International; Climate education and green skills; Education estate and digital infrastructure; Operations and supply chains.

To support this work, in December 2023[1] DfE published a progress update. However, to date there have not been any changes to England's secondary school curriculum, Ofsted, qualifications (GCSEs and A levels), or assessment to incorporate sustainability and climate change. Climate change was referenced in the school curriculum prior to the strategy in geography and science, and only covered:

- Science - potential effects and mitigation of human-generated greenhouse gases on the Earth's climate.
- Geography - the change in climate from the Ice Age to the present and how human and physical processes interact to influence, and change landscapes, environments and the climate, and how human activity relies on effective functioning of natural systems.

When the Labour government came into office in July 2024, they commissioned Professor Becky Francis CBE to convene and chair a panel of experts to conduct a review of England's school national curriculum. This led to the publication of the Curriculum and Assessment Review, Interim report in March 2025, which calls for school education to keep pace with environmental change, with a 'greater focus on sustainability and climate science'. The experts note in the review that 'society is rapidly changing, and bringing new opportunities and challenges', referencing climate change as one of the three areas requiring greater focus, to ensure that five- to 16-year-olds develop the knowledge and skills needed to 'harness future opportunities and fend off threats to our democracy and cohesion'.

1 Sustainability and climate change strategy: our progress so far, December 2023

In the government's response to the interim report, they set themselves the target of 'improving climate and sustainability education', which falls into their 'learning for a changing world' objective. They are now developing the new curriculum, to be published in Spring 2027, with the aim of schools teaching it from September 2028.

The scale of the problem this lack of mandatory climate skills education creates is highlighted by the findings of Skills England's Assessment of priority skills to 2030, which places clean energy industry skills in the 10 most important sector skills required, if the government is to meet its current growth mission. This suggests the vital importance of the government not just incorporating climate change more fully and deeply into the English school curriculum but also working with relevant experts to incorporate clean energy industry-specific skills, knowledge and careers advice into the curriculum, enabling schools to bring these opportunities to life in the regions where these jobs will be created.

Across England, universities have a role in supporting climate education in schools, this is not a large-scale piece of work, but about enabling and empowering schools to deliver climate education that is reflective of the region's challenges and opportunities, through working with local universities to develop a regional offer within relevant components of the curriculum, ensuring that each student:

- understands the skills that will be required to obtain well-paid green jobs in their region.
- has undertaken activities and lessons on the technical skills required within local green sectors
- has undertaken activities and lessons on the impact that climate change will have in their region, what this could mean for them, and the behaviour change and adaptations required to prevent these impacts.
- has had access to state-of-the-art university facilities, with the aim of exciting and motivating all students to want to work in an energy transition sector.

If universities were better integrated into regional mainstream education infrastructure, this would present a sustainable way for them to offer their skills and knowledge. This would require universities to work with local stakeholders, to develop and deliver climate education that supports stakeholders to meet their targets. It would enable students to have high-quality, up-to-date climate education from specialists, that reflects the place that they live in, so that they understand the challenges and opportunities in their place.

To give a concrete example of how this approach could work, every region will have a careers hub, tasked with ensuring that every school delivers high-quality careers advice and education, measured through the eight Gatsby Benchmarks, which define world-class careers guidance for young people in England, based on international evidence. Benchmarks 2 (Learning from career and labour market information), 4 (Linking curriculum learning to careers), 5 (Encounters with employers and employees), and 7 (Encounters with further and higher education) offer opportunities for universities to engage with students on green skills and employment opportunities in their place, which could be woven into the science or geography curriculum, where climate change is currently taught.

The new curriculum that is currently being designed for 2028 offers a chance for English education to consider to build in flexibility and funding, supporting regions to offer place focused education that teaches young people about the impact of climate change locally, and how they can be a part of the solution. This could powerfully empower young people to take part in the energy transition the country is currently undergoing.

CONCLUSIONS

Climate education in England has not, to date, met the UK government's ambition of being world-leading, and there are now just four years remaining to reach this target.
It is clear, from previous policy papers, research and government white papers, that there is a need for a regional approach to deliver climate skills, based on the increasing number of place-specific net zero-related roles expected.

It is also clear that universities' skills, knowledge, and experience will be crucial in helping build the sector-specific education and skills packages required to create a pipeline of skilled workers to deliver on both regional and national climate ambitions.

The research from the Institution for Community Studies shows that civic approaches to climate education have the potential to work alongside adult education and mainstream school education across England, unlocking value for learners and places, and contributing to a greener, fairer future. There are examples of best practice, successful outcomes, and impact across the country and around the world, including the five case study projects presented in the Institute for Community Studies' report, which point toward the huge value delivered by civic climate education initiatives.

English climate education, at all levels, is behind where it needs to be to create effective supply chains and to meet sector needs. Alongside the rapidly changing nature of the climate emergency and environmental action, as well as the inherent differences between places across England, it is difficult to define what should be included in climate education, which curriculums it should be a part of, and how much flexibility should be given to schools and regions, so they can reflect regional difference. It is therefore crucial that the government considers how to work with combined authorities to enable them to develop a range of education packages aimed at turbo-charging climate education in different contexts.

Civic climate education helps regional policymakers delineate the scope (regional specific guidance) of this emerging field. Alongside the identification of enablers and challenges, this can serve as broad guidance and inspiration for other institutions and practitioners wanting to deliver meaningful climate education in their places.

RECOMMENDATIONS

The following recommendations offer combined authorities and the DfE opportunities to use the skills, knowledge and experience of universities to design and test the impact that civic climate education can have on developing climate skills and education in place:

- **Combine civic and climate education capabilities for greatest impact**
  Initiatives that combine the skills and capabilities of civic teams with climate and education knowledge have the potential to deliver the greatest impact. The combined skills can generate routes to collaborative working and place focused impact, delivering greater value to learners, universities and places.

- **Invest resources in civic climate education**
  Civic climate education initiatives need appropriate resourcing to be successful. Greater investment is needed from universities, in partnership with national, research council, and charitable funders. This includes capabilities in civic engagement, climate action, and education, as well as funding to support the development and testing of materials. Additionally, the funding of project managers is crucial, particularly to collaborative initiatives. Long-term funding is crucial, as it supports the ongoing improvement of civic climate education initiatives, for greater impact.

- **Invest in impact evaluation**
  Robust evaluation is crucial to understand *what is working*, where when it comes to civic climate education. Long-term evaluation is required to understand the impact on learners and places. This needs to be supported by appropriate resourcing, which is currently lacking. Impact evaluation may support the proliferation of civic climate education approaches and encourage institutions to appropriately resource them.

- **Facilitate learning between institutions**
  To support the proliferation of civic climate education, impact evaluation and learning needs to be captured and shared between institutions. By sharing *what is working*, where, institutions can maximise the potential impact of civic climate education initiatives. Given that climate change is a shared challenge between places, proliferation and the acceleration of impact is in the best interest of everyone.

- **Fund and build civic infrastructure**
  University investment in civic infrastructure, such as civic teams and civic university agreements, can support the delivery of effective climate education in places. It can support collaborative relationships and unlock the flow of resources and capabilities between institutions. This can be particularly impactful in places where the institutions leading climate action, for instance local authorities, can be directly engaged in initiatives.

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