



EMPOWERING YOUNG PEOPLE TO TEACH THEIR TEACHERS: DISCOVERING QUALITY CLIMATE EDUCATION THROUGH DIGITAL STORYTELLING

Case Study Final Report
United Kingdom

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Empowering Young People to Teach their Teachers | Discovering Quality Climate Education Through Digital Storytelling¹

EXECUTIVE SUMMARY

The *Teach the Teacher* programme of SOS-UK builds the capacity of young people to provide training to their teachers in climate education. The programme sees roles reversed, with students running lessons for their teachers to explore climate change, climate justice, and what it is like to be a young person during the climate emergency. Over 100 students have delivered *Teach the Teacher* sessions to over 1,000 teachers, with young people actively advancing the UK Department for Education's sustainability and climate change strategy.

This case study on the *Teach the Teacher* programme has provided a unique opportunity to explore with young people the purposes, practices, and outcomes of quality climate education. The research methods used in this case study included interviews, focus group conversations, questionnaires, and digital storytelling. Through facilitated digital storytelling workshops, young people involved in *Teach the Teacher* created short videos that were both reflective (their moment of environmental awakening) and speculative (a letter from their future self in 2050). In total, 29 students and 7 teachers were involved in this case study research.

The key findings of this study are:

- Students identified the purpose of climate education as providing inspiration and hope, especially as a means of countering climate anxiety.
- Students agreed that an important learning outcome from climate education was a basic understanding of the causes, impacts, and solutions to climate change.
- Students called for teacher practices that are cross-curricular, balance problems and solutions, and include more dialogical approaches to learning.

Through the digital storytelling workshops, students shared their reflections on the experiences that shaped them and their *environmental awakening*. Informal forms of education such as television programmes, social media, participation in activism featured much more prominently in the reflections than did formal education experiences. Formal education experiences mentioned in these videos included extra-curricular activities, such as eco-clubs and school trips, and inspiring teachers.

The young people involved in this case study also created multimedia *letters from the future*. Most of the letters reflected narratives of collapse and dystopia, which were framed as warnings to the viewer, with an underlying message of contingency based on individual and collective action in the present. The digital stories also presented futures of growing inequality, in which green technology benefited a privileged few, with increased suffering and vulnerability experienced by the majority.

¹ The views in the report are not necessarily endorsed by the MECCE Project, which funded the research.

One video starkly presented a narrative of discontinuity, with a great tragedy leading the way to a new enlightened period characterised by the restoration of nature and transformation of education.

Educators interested in quality climate education should ensure their practices support learner outcomes desired by young people. Young people want to understand the basics of climate change, but they also need hope and inspiration. Teachers should also recognise the value of informal learning opportunities outside the classroom. Most importantly, educators must help young people build the resilience and adaptation required to navigate their uncertain futures.

CCE PROGRAM OVERVIEW

Teach the Teacher is a programme designed to enable young people to take climate education into their own hands. Young people are growing up in a world shaped by the climate emergency and ecological crisis. In the UK, climate change is not a mandatory part of the curriculum for students. Young people are frustrated at the lack of effective climate education that would teach solutions to mitigating or adapting to our changing climate, or prepare them to face the effects of climate change. Whilst there is evidence of increasing mental health issues related to climate change and its potential impacts, there has also been an increase in campaigning and advocacy work driven by students to demand an improvement in the climate education they receive.

Teach the Teacher was created by secondary school students who were part of the *Teach the Future* campaign. Hosted by SOS-UK, the *Teach the Future* campaign sees students leading the call for improved integration of climate change through all subjects and stages of education in the UK. The campaign has carried out research with teachers on their views and experiences of climate education and found that 70% of primary and secondary teachers in England said they hadn't received any training on climate change either through their qualifications or since.

Teach the Teacher is designed to progress climate education through providing training for teachers. The programme sees roles reversed, with students running lessons for their teachers which explore climate change, climate justice, what it is like to be a young person during the climate emergency, and the emotions this creates. *Teach the Teacher* trains groups of young people in schools to give climate education lessons. The experience provides students with the skills to talk about climate and advocate for themselves. At the same time, it shows teachers how they can take action in their teaching too. After the lessons, teachers gain access to a range of resources to support them in making a positive change to their teaching practices on climate change. *Teach the Teacher* is a novel model of student-led teacher continuing professional development on climate education, and is contributing to the UK Department for Education's (DfE) sustainability and climate change strategy by improving the confidence of teachers and showing how climate is relevant to all subjects across the curriculum.

The SOS-UK *Teach the Teacher* programme delivers free training, support, and resources to secondary school students. The programme empowers students to deliver a one-hour climate education workshop with their teachers, who are then further supported through access to an online resource library which contains lesson plans, activities, and videos. The student training is focused on building confidence and communication skills, while creating space for them to explore themes such as climate anxiety and climate justice. To date, over 250 schools, colleges and universities have signed up to take part in *Teach the Teacher*, with over 100 students teaching their teachers about climate change, and over 1,000 teachers and trainee teachers receiving youth-led training on climate education.

METHODS

This case study on the *Teach the Teacher* programme has provided a unique opportunity to explore with young people the purposes, practices, and outcomes of quality climate education. The case study research was driven by three questions (a primary research question, and two additional questions related to operationalising the first question and capturing the impact of the *Teach the Teacher* experience on participating students):

- What do young people identify as the most important outcomes of climate education, as well as the teacher practices that would lead to these outcomes?
- How can these practices and outcomes be measured in the *Teach the Teacher* programme, and inform programme development year-on-year?
- What is the impact on young people who take a leadership role in climate education in terms of action competence?

The research methods used in this case study included teacher interviews, focus group conversations, student questionnaires, and digital storytelling workshops. The questions used for the teacher interviews, student focus groups, and student questionnaires are included as annex to this report. For the teacher interviews and student questionnaires, existing programme evaluation tools were adapted to include additional questions related to quality climate change education, in terms of purpose, teacher practices, and learner outcomes. The focus groups were conducted with the digital storytelling workshop participants at the end of the workshop. Focus group participants reflected on the workshop content and process, the themes of the videos they produced, and the broader questions of quality climate change education (purposes, practices, outcomes).

The digital storytelling methodology is an innovative aspect of this case study and resulted in rich qualitative data for narrative and reflexive thematic analysis. Through a facilitated workshop – offered both in-person and through a video conferencing service – two groups of young people explored climate scenarios and developed communication skills. The primary outputs of the digital storytelling workshops were short, first-person essays that were used as narration for student-produced videos. For more information about digital storytelling in climate education research, see <https://doi.org/10.1080/14733285.2022.2153329>.

In this case study, the student essays and videos responded to two prompts:

- Reflect back to your moment of environmental awakening and tell the story of this moment.
- Project to the year 2050 and write a letter from your future self to your current self.

The first prompt was developed for this research project to explore the formative learning experiences for young climate activists, especially in terms of formal versus informal learning. The combination of digital storytelling and focus group conversations on this theme explored the climate education that shaped the research participants, versus the climate education they advocated for through *Teach the Teacher*. The second prompt is based on earlier research on speculative digital storytelling (see link above) which investigated the competencies – as identified by young people – required to navigate an uncertain future shaped by climate change and our collective response to the climate crisis. This research also found that creative engagement with future scenarios in an emotionally supportive environment resulted in positive reappraisal – a form of emotional resilience in which negative situations are reframed in more constructive and positive ways – which is an aspect of Maria Ojala's model of climate hope.

There were four distinct groups of research participants involved in the case study. Secondary school students involved in *Teach the Teacher* ranged in age from 11 to 18, and 19 students from England and

Scotland completed an anonymous questionnaire after delivering their *Teach the Teacher* session. A digital storytelling workshop delivered in partnership with South Lanarkshire Council in Scotland included 10 students, with 7 completing the digital stories and participating in a focus group conversation. This case study research also involved SOS-UK student staff, aged between 17 and 21, who train and support the *Teach the Teacher* participants. Four student staff joined a virtual digital storytelling workshop, with three of them completing the digital stories and participating in the focus group. Interviews were also conducted with seven teachers in England who participated in a student-led training session to further explore the *Teach the Teacher* programme and teacher perceptions of the purposes, practices, and outcomes of climate education. Demographic information, including about gender, was not collected from the 36 participants who contributed data to this case study.

FINDINGS

Most Important and Interesting Findings

In the focus group conversations, students identified the purpose of climate education as providing inspiration and hope, especially as a means of countering climate anxiety. “To actually teach people about climate change,” one student commented, “I think the most basic part is building hope and encouraging people to be inspired.” Another student agreed, and reflected on the balance between talking about the problem of climate change while also sharing positive stories of climate action. “You can't teach climate education without having that balance of: this is what's happening, this is what we can do. Because, otherwise, you're just showing devastation, with no way to solve it, and that's obviously when you get climate anxiety and paralysis and actually not doing anything.”

Reflecting on the outcomes we might be able to observe if climate education were successful, one student was frustrated that other young people do not stop to ask questions about things like plastic pollution or think more deeply about the consequences of their actions. This was echoed by a teacher, who called for deeper thinking and questioning, especially in terms of concepts like life-cycle assessments and planetary boundaries: “I think from a science perspective, at least, everyone should understand that we have this one finite system. We don't have an infinite supply of resources.”

Students also agreed that an important learning outcome from climate education was a basic understanding of the causes, impacts, and solutions to climate change. Students argued that this needed to happen in various subjects to raise environmental awareness and also to tackle misinformation. “Sometimes misinformation might be spread, but if you're given information in the classroom, then you're not alone, and you'll be able to talk to other people about it and ask questions.” When asked about the teacher practices that might result in their desired learning outcomes, students called for integrating climate across the curriculum through case studies. Students also felt teachers should strike a better balance in terms of presenting both problems and solutions, and use more dialogical approaches to learning.

One of the SOS-UK student staff identified interactive, conversational approaches to teaching about climate change as a means of recognising both the self-directed learning of young people and the limited confidence of teachers, with student-teacher dialogue supporting a process of learning together. “Frame it as a conversation between you and the students, because, in most cases, due to the lack of teacher training around climate education, there are bound to be two or three students in that class that know even a tad bit more than the teacher. Framing it as a discussion can be more impactful and more inspiring as well for the teacher.”

The videos produced by students through the digital storytelling workshops complement the above findings, while also providing more nuance in terms of both the origins of their environmental awareness and their hopes and fears about the future. In the videos where students reflect on their *moment of environmental awakening*, informal forms of education featured much more prominently than formal education. For example, the stories referred to television documentaries by David Attenborough, social media content featuring climate activists like Greta Thunberg, and their own participation in climate activism as being formative for the students.

One of the videos began with a reference to the final phase of secondary school – A-level examinations – before declaring, “today that was not the priority.” The video continued with a series of smartphone photos and footage of school climate strikes in Northern Ireland, while the narrator described how climate activism helped them cope with eco-anxiety and hopelessness, and that giving a speech at the protest was life-changing.

The environmental awakening videos where formal education was mentioned featured extra-curricular activities, such as eco-clubs and school trips, and inspiring teachers. One of the students in Scotland recounted a day when a teacher started their mathematics class by telling a story about how they discovered a gull caught in plastic fishing nets on the beach. The teacher rescued the bird and took it to a veterinarian, where the vet performed surgery and removed plastic from the bird’s stomach. This honest, surprising moment from a teacher – completely unrelated to the lesson – had left a powerful impression on the student.

The videos in which students created a multimedia *letter from the future* reflect a range of probable, possible, and preferable futures. The majority of videos presented very negative visions of the future, often concluding with a warning to the present and sense of contingency – the future being unwritten and depending on the actions taken by the viewer. At the same time, these narratives of collapse and dystopia implied a need for people to be equipped with practical skills related to the gathering and growing of food, and more general skills related to adaptation and resilience, both at a personal and collective level.

The most positive video had a narrative of discontinuity rather than utopia, with a striking reference in the beginning to “the Great Tragedy of 2030.” This video then goes on to paint a picture of a future Britain in which nature had been restored and education transformed:

Children in school – they don't feel overwhelmed about the effects of climate change anymore. Instead, they get to learn about the close miss of the climate crisis, which would have wiped out the whole entire civilisation. They learn about the brave and courageous young people who came before them and fought for the world and their futures. And, more importantly, they get to spend their time learning in and about nature, developing a true connection to the environment from a really young age, which most of us in 2024 could have only dreamed of.

There were also a small number of videos about mixed futures, in which people with wealth and privilege continued to adopt green technologies and were protected from the worst of the climate crisis, while a growing number of vulnerable people faced natural disasters, mass migration, and suffering. These multimedia letters expressed a climate justice-informed critique of false climate solutions that will only exacerbate inequality, with an implied advocacy for more intersectional approaches to climate education.

While the digital storytelling process used for this case study research is not a standard aspect of the *Teach the Teacher* programme, there are parallels with some of the programme’s key principles, including:

- Capacity building of young people, with a focus on climate literacy and communication skills.
- Supporting student voice and student-led climate action in schools.
- Integrating individual climate action with institutional/systems change.

The student-produced videos also illustrate the many forms of quality climate change education advocated for by students participating in the *Teach the Teacher* programme, including cross-curricular integration, outdoor learning, extra-curricular opportunities, and multimedia/social media content.

As noted above, this research also set out to investigate two secondary research questions related to incorporating the purposes, practices, and outcomes of climate education identified by young people into the *Teach the Teacher* model. The focus group conversation with the SOS-UK student staff highlighted observed increased confidence and communication skills in the secondary school students who received training from SOS-UK and delivered a training session to their teachers. The student survey included high ratings for a number of questions related to action competence, with 44% agreeing and 44% strongly agreeing with the statement, “I believe I can take more action on climate change, at school or in other areas of my life, in the future.” However, the small number of respondents limits the power of this survey, and further research is required to fully capture the impact of the programme on the participants.

One recommendation from this case study is that future evaluations attempt to capture the ripples of impact beyond the core *Teach the Teacher* experience to investigate how teachers go on to deliver climate education as well as the cumulative impacts on their students and the families of these students. At the same time, the focus group participants commented that there are “unmeasurable” benefits to the programme in terms of traditional evaluation, with one participant reflecting, “I think – through doing these videos – that people’s lived experience and people’s stories can’t really be narrowed down to like a number or a questionnaire or a scale. You can’t get people’s emotions through that; you can’t get people’s feelings.” See more in the ‘Impacts’ section below with respect to programme evaluation and development.

Psychosocial Aspects

The *Teach the Teacher* programme addresses the social-emotional aspects of climate change in the training that students provide their teachers, with students being given the opportunity to speak about their first-hand experiences. Through the digital storytelling workshop, case study participants reflected on how different forms of climate activism have helped them cope with eco-anxiety and hopelessness. One of the teachers reflected on the power of students sharing their climate in the *Teach the Teacher* training session:

“I think any additional time spent talking about climate anxiety is really valuable to any teacher because it’s definitely something that we see in the classroom. Students are very interested [in climate change], but they do feel quite a lot of anxiety and worry about it, and I think it’s important for teachers that the first time [climate anxiety] comes up is not in a classroom with students. So that part [of the training session] was definitely valuable to spend some time talking to other teachers and talking to the [student] presenters.”

Collaboration and Communication

A key aspect of *Teach the Teacher* is the development of the confidence and skills in young people to actively support improvements in quality climate education in their schools. In particular, the teacher training sessions delivered by students are an opportunity for them to develop their communication

skills and figure out the best ways to constructively navigate the hierarchies and power structures of British secondary schools. In the focus group with the student staff at SOS-UK, one participant reflected on the positive feedback they get from the teachers who have participated in the student-led training sessions: “They really love when it is their own student up there. And I think that makes them more inclined to listen to them. Also, there is a sense of invisible accountability – you can hardly ignore what a student just said they want and then go and teach them the same old thing.”

Action-learning Aspects

Through the role-reversal of *Teach the Teacher*, young people are empowered to take action, providing their teachers with professional development while advocating for quality climate education in their schools. The case study videos in which students reflect on their moment of environmental awakening emphasised the importance of extra-curricular action-learning opportunities, for example school trips and eco-clubs. This was also echoed in the student focus group, when one student commented, “I think [teachers] should do [climate education] in more of an interactive way. Rather than just telling us things, we should actually do activities based on it.”

Justice

As a youth-led organisation, SOS-UK is very focused on centering equity and justice in all sustainability education programmes. This is reflected in the training to students, and the training students deliver to their teachers. As noted above, a number of the letters from the future created in the digital storytelling workshops directly critiqued so-called climate solutions that fail to address underlying inequalities and vulnerabilities. In the teacher interviews, a number of the teachers reflected on the climate justice aspects of the training, and the intersectional approach taken by the students: “I remember they did a lot about interconnectedness and gender and religion, and all those different intersectionalities. Which a lot of people hadn't really thought of before.” The same teacher, when reflecting on the teacher practices of quality climate education, commented on how understanding the impacts of climate change could be approached in a critical manner:

“That's when I'm bringing intersectionalities in – why does the same hurricane affect Cuba worse than the United States? – and that's when they start thinking about money and development and things like that and then you use that to spearhead you into the solutions.”

Cultural and Regional Contexts

The context of the *Teach the Teacher* programme is a devolved education system, with distinct curricula and education policies – as well as distinct cultures – in England, Scotland, Wales, and Northern Ireland. As the programme focuses on building the capacity among young people to advocate for climate education, the programme is highly adaptable, with students being in the best position to understand the challenges and opportunities in their region. Students in the focus groups mentioned changing the national curriculum of Scotland and the national curriculum of England to include more climate education, but they also discussed how teachers can flexibly approach climate education within the current curriculum across multiple subjects. For example, one of the students in Scotland talked about case studies and examples used in lessons: “I think like when you're in maths, [teachers could] refer to more types of things. So instead of just saying something [non-environmental] you can put plastic in [a question] so that everyone actually knows more.”

Geography and Places

The *Teach the Teacher* programme thrives in places where student voice and student leadership are actively supported in formal education. For example, the existence of a Youth Forum for schools in South Lanarkshire facilitated the recruitment of participants and delivery of the programme. The programme might face more hurdles in school systems that approach teaching and learning in a more hierarchical way, for example, if teachers are uninterested in or feel threatened by training provided by students.

Indigenous knowledges

While this case study research and the *Teach the Teacher* programme do not directly incorporate Indigenous knowledges, the youth-led model of climate education and the storytelling aspect of the research methodology may both be relevant to climate education research and practice with Indigenous communities.

CASE STUDY IMPACTS

Influence of the Case Study on Conceptualizations of Quality CCE

This case study has had three direct impacts on the *Teach the Teacher* programme of SOS-UK. The research project incorporated a reflective process into engagement with different programme stakeholders, especially teachers, to explore more deeply the purpose, desired outcomes, and teacher practices of quality climate change education. The digital storytelling workshops also resulted in a series of video assets which will be used for engaging programme participants and other audiences (e.g., partners and funders) in personal reflections on environmental leadership and in “time-travel” exercises to explore probable, possible, and preferable futures. Finally, the case study collaboration has strengthened the relationship between the programme staff and the university-based researcher, with future projects being developed to explore the longer-term impact of early career teachers being exposed to *Teach the Teacher* training during their teacher education.

Over the course of this case study research, an expanding area of the *Teach the Teacher* programme was through cohorts of early career teachers in the Postgraduate Certificate in Education (PGCE) programme, which combines part-time studies with a work placement in a secondary school. As these trainee teachers were actively engaged in a reflective learning process based on their practical experiences in the classroom, they have been receptive to the reflective learning process of both the *Teach the Teacher* student-led training sessions and the case study research. The majority of the teacher interviewees were PGCE student-teachers, and some of the final reflections in the teacher interviews included thoughts on interconnectedness, adaptability, and non-Western worldviews.

In the focus group with the SOS-UK student staff that supports the *Teach the Teacher* programme, participants reflected on the impact of the *moment of environmental awakening* activity. The staff, who are generally university students, said the activity reminded them what it felt like to be in secondary school when they first discovered environmental activism, and that this changed how they related with the secondary school students they were supporting in the *Teach the Teacher* programme. In a reflection on how this creative exercise built more empathy with the secondary students they were training and supporting, and with whom they are close in age, an SOS-UK student staff said:

I think reflecting on the moment of environmental awakening for me brought me back to where I was when I, obviously, was younger. And so I feel like that's now still in the back of

my mind, so when I'm now interacting with young people I feel like maybe I can relate to them or interact with them better. Because it's sort of closer to the front of my mind of like, 'Oh yeah, that's where I was, that's what I was thinking.' So it's sort of brought me closer in some way.

The SOS-UK student staff also appreciated the opportunity to step back and reflect on their personal journey and development, and the ripples of impact of the programme on the students and teachers that have participated. They also recommended incorporating storytelling methods into future impact evaluation of the programme.

This case study project has also had a positive impact on the research group at the Education and Training for the Climate interdisciplinary research hub (ETC hub) at the Department of Education at the University of Oxford. The ETC hub is incorporating the learnings from this project into public engagement activities planned for the 2024-2025 academic year, as well as new research proposals. Of particular relevance to the case study are two projects in development that will pick up the themes of informal, learner-directed climate change education. In collaboration with a European Research Council project on the Impacts of Digitalised Daily Life on Climate Change at Oxford's Environmental Change Institute, researcher Bill Finnegan is developing a small methodological study as a Living Lab 'Mission' to explore informal sources of climate change education and the resulting emotions and actions. Another project under development with an online climate education and job placement platform will investigate self-directed learning and climate literacies with mid-career professionals undergoing a career change to more sustainability-focused jobs.

Beyond the programme and researchers, this case study aims to contribute to conversations about climate change education in both academic and education policy circles. The case study findings were shared at the World Symposium on Climate Literacy hosted by the Hamburg University of Applied Sciences in Germany and Manchester Metropolitan University in the UK. As an academic output of the case study, the symposium paper is being developed into a chapter which will be submitted to the book *Combining the Theory and Practice of Climate Change Literacy* which is being produced as part of the *Climate Change Management Series* published by Springer Nature. The case study was also shared through a webinar during New York Climate Week organised by the MECCE Project and the National Wildlife Federation.

In the UK, the case study findings and multimedia assets will be shared with a number of sustainability education networks in the 2024-2025 school year. This will build on the work of SOS-UK's *Teach the Future* campaign, which holds parliamentary briefings, and the UK Department for Education's (DfE) Youth Focal Points, also based at SOS-UK, who advise the government on the implementation of the DfE's sustainability and climate change strategy. The current political climate provides a unique opportunity for charities and academics to influence government policy, with a new UK government (as of July 2024) committed to both education reform and increasing the UK's ambition in terms of climate solutions.

However, in the absence of reforms to the national curriculum of England or increased funding for school sustainability, the context of *Teach the Teacher* remains challenging. While the programme directly addresses calls for teacher training to improve teacher confidence with climate change education, while also delivering benefits to participating students, the programme does not address the deeper issues in terms of the time-pressures on teachers, and the siloed approach to school subjects, which is reinforced by assessment and examinations. This is further complicated by the devolution of education policy to the four nations of the UK – England, Scotland, Wales, and Northern Ireland – requiring *Teach the Teacher* to adapt to very different educational contexts. The

teacher training provided by the programme also takes place within the complicated physical and social landscapes of schools, where school cultures and power hierarchies may resist student-led programmes (for a social practice informed investigation of whole-school sustainability in the UK, see <https://doi.org/10.1016/j.jerss.2023.103186>).

Scalability

This case study took place during a period of expansion of the *Teach the Teacher* programme, and the basic model – training and supporting secondary school students to provide continued professional development on climate to their teachers – has proved scalable. When exploring different active communities within the programme, it became clear that one bottleneck for this expansion is the development of relationships with the gatekeepers to networks of schools, whether that be the local authority (government) or a multi-academy trust. However, once these relationships were developed and the programme was seen as mutually beneficial, these gatekeepers facilitated rapid expansion, for example through the South Lanarkshire Council's Youth Forum in Scotland.

The climate and sustainability education landscape in the UK is also experiencing a period of rapid growth, which will benefit teachers and learners, but also will require coordination between different charities and businesses offering somewhat related services. For example, through the DfE's sustainability and climate change strategy, there have been a proliferation of new programmes: the University of Reading led the development of a climate ambassadors programme, Ashden's Let's Go Zero campaign is providing schools with climate action advisors, Keep Britain Tidy's Eco-Schools programme developed the Count Your Carbon tool for schools, the Ministry of Eco Education charity created new materials and training building on the national curriculum, Global Action Plan hosts an online resource library and network of sustainable schools, Natural History Museum led a consortium to develop the National Education Nature Park and Climate Leaders Award, ThoughtBox Education is providing teachers with training combining self-care and Earth-care, etc. Within this context, *Teach the Teacher* remains a unique model, but coordination with other programmes, which currently happens in formal and informal ways, will be essential for continued growth in the UK.

Teach the Teacher is also an excellent candidate for expansion outside of the UK. SOS-UK has a number of internationally-facing programmes, for example MockCOP and *Responsible Futures*, and hopefully being part of this MECCE Project case study will lead to the development of new relationships and partnerships around the world.

In terms of the research undertaken for this case study, the digital storytelling methodology has also proven to be an effective tool for both data collection and delivering a creative, empowering environmental education experience to young people. While the format of digital storytelling workshops limits the potential scaling up of similar efforts – for example, the Scotland workshop involving ten students and taking place over two days – the model is easily replicable and could be facilitated by both educators and researchers in formal and informal settings. This case study also supported the development of both reflective and speculative digital storytelling prompts, with the *moment of environmental awakening* being particularly impactful for the participants, and the underlying themes engaging with emerging questions in the field of environmental education related to environmental epiphanies.

APPENDIX A. TEACHER SEMI-STRUCTURED INTERVIEW QUESTIONS

- Could you tell me a bit about your role as a teacher (subjects, levels, background)?
- What were your motivations to take part in the Teach the Teacher session?
- Can you describe the Teach the Teacher session to me?
- Has your understanding of climate change (or specific issues like climate justice or climate anxiety) improved as a result of the Teach the Teacher session?
- Have you developed any skills, or improved your confidence related to teaching about climate change as a result of the Teach the Teacher session?
- Have you made any changes in your teaching as a result of the Teach the Teacher session (pledge)?
- What kind of resources would you need to make changes in how you teach about climate change based on the Teach the Teacher session?
- What do you think is the purpose of climate education?
- What specific learning outcomes or learning objectives should result from climate education?
- How do you think climate education can achieve these goals – what do teachers need to do? How should they do it?
- Is there anything else that you'd like to say that we haven't covered so far?

APPENDIX B. FOCUS GROUP TEMPLATE AND QUESTIONS

At the end of the digital storytelling workshops, after we've watched (and celebrated) the videos produced by the participants, we will shift gears to a more formal focus group conversation. The format is adaptable to the group with the questions below approached in a similar manner to a semi-structured interview.

INTRODUCTION

0. [Check-in] Before starting, any questions about the purpose of this research, use of the research data, or your consent to participate in this research project?

STORYTELLING

1. [Reflective] While making the digital stories that reflected back on your moment of climate awakening – and watching the stories of others – how much did you think about 'education', either formal school education, or learning outside of school?
2. [Speculative] Thinking about your letters from the future, how was 'education' represented in these possible futures, or as a means of achieving these futures?
3. [Impact] What are your reactions to the storytelling project? Was it different looking backwards versus forwards? What about making stories versus watching other stories? How was this different from other types of climate education and communication experiences?

CLIMATE ED *[Incorporate these three questions into teacher interviews]*

4. [Purpose] What do you think is the purpose of climate education?
5. [Outcomes] What specific learning outcomes or learning objectives should result from climate education?
6. [Practices] How do you think climate education can achieve these goals – what do teachers need to do? How should they do it?
7. [TtT] Did this experience make you think differently about Teach the Teacher? What messages would you share with other people involved in the project?
8. [VIDEOS] How do you think the videos created in this workshop could be shared outside this research? How would you like to share your video? [Go around and revisit their choice: don't share outside the research/workshop, share anonymously, share with credit/attribution.]

At the end of the focus group, share contact details for the purposes of withdrawing consent to participate in the research or have data/personal information withdrawn from the research project.

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APPENDIX C. STUDENT QUESTIONNAIRE

Anonymous evaluation for students after participation in the programme, with the multiple choice action competence questions highlighted below.

How much, if at all, do these statements describe you?

Likert scale:

- Quite a bit like me
- A lot like me
- Not much like me
- Not at all like me
- Don't know
- Rather not say

As a result of taking part in Teach the Teacher...

1. I understand more about climate change
2. I understand more about climate anxiety
3. I understand more about climate justice
4. I understand more about the perspectives of teachers at my school on issues related to climate
5. I feel more confident talking about climate change to my friends/peers at my school
6. I feel more confident talking to leaders within my school about climate change
7. I feel more confident talking to my teachers about climate change
8. I believe I can have a role in taking action on climate change in my school
9. I believe I can take more action on climate change, at school or in other areas of my life, in the future
10. I believe I can have a role in shaping how and what I learn at my school
11. It prompted me to speak to my family about taking action on climate change
12. I feel more comfortable communicating ideas and information clearly
13. I feel more comfortable working with other people in a group
14. I feel more comfortable trying new things