

Climate Action Hub: empowering youth engagement project report



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1 Executive Summary

This report summarises the knowledge exchange activities of the CAH-OOT project: Climate Action Hub - empOwering yOuth engagementT. This project, funded by a joint faculty award from the Higher Education Innovation Fund (HEIF), enabled representatives from the Faculty of Business and Law and the Faculty of Environment and Technology to work with young people over a five-month period. Together, they co-developed a Climate Action toolkit and delivered training, coaching and skills development to 16-24-year-olds interested in making a difference in their place of education or in their community. In total, the project **directly engaged 201 young people** and **337 adults** and **indirectly engaged at least 5,000 young people**. So far, the toolkit has been viewed **398** times and has been picked up by other youth empowerment organisations, including the Sustainability Committee at UWE-Bristol that plan on using the resource in their own work.

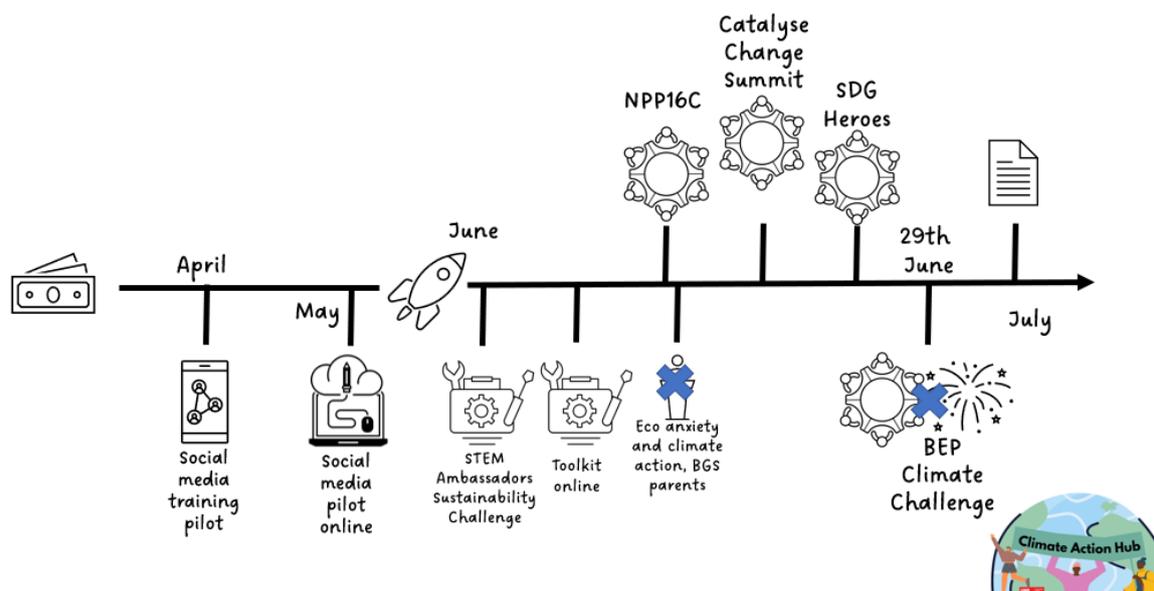
Over its five-month duration, the project delivered four training events, ranging from light-touch 30-minute sessions to deep engagements spread over several weeks. The team shared the projects resources and its umbrella initiative the Climate Action Hub at three relevant external events, reaching teachers, business, academics, and artists, and engaged with the media via blogs and radio. Together with sharing the toolkit on various educational platforms, it is estimated that the total reach of the project to all ages is over **35,000**. Thanks to this funding, the project was able to bid for additional funding from Enterprise Educators UK and has been successful in its pursuit, meaning that the initiative will be rolled out to at least five more educational settings, with the aim of reaching at least 300 young people, over the course of the next academic year.

For the first time, specialists in science communication, social psychology, community organising, entrepreneurship and education for sustainable development were brought together at UWE-Bristol, providing a unique opportunity for researchers to interact with colleagues from different disciplines. Similarly, the engagement with young people often brought together individuals that had not worked together before and with this brought new ideas and perspectives. Two Team Entrepreneurship coaches were also involved in the project and provided their first experience engaging younger audiences. It gave them the opportunity to inspire the younger generation to pursue a career in entrepreneurship and to use their coaching skills to support the student project teams. Lastly, through this project, researchers were able to develop relationships with new organisations and initiatives, ranging from [Avon Schools Eco Network](#), [The Centre for Sustainable Energy's Bright Green Future](#), [The Global Goals Centre's Groundbreakers](#), [Catalyse Change](#), [Climate Outreach](#), and [National Centre for Academic and Cultural Exchange](#). All are working towards the collective goal of youth empowerment for climate justice, and it is with each new relationship forged that we move one step closer towards fulfilling this ambition.

2 Timeline of events

The image below shows the timeline of events for the CAH-OOT project. It does not capture all the activities, but it does highlight the main ones. In April, Sophie and Louisa delivered social media training and shortly after it was uploaded to the newly created Climate Action Hub YouTube channel. In June, the draft toolkit was shared at an Avon Eco Schools meeting and at a youth-led Climate Café for additional feedback on the design and content of the toolkit. The toolkit was also shared with schools visiting UWE for a Sustainability Challenge showcase, organised by STEM Learning. The toolkit was finalised in early June, following a round of edits from the team, and at the end of the month the team began delivery. Unfortunately, two events were cancelled at short notice (due to low sign up or lack of capacity) and there was not enough time to find replacement activities, despite the team's efforts. As such, overall engagement numbers are lower than the team would like. However, three events did go ahead – training to young people at North Bristol Post 16 Centre, training to young people and teachers at The Global Goal Centres Groundbreaker's ceremony and a facilitated session for the Catalyse Change summit. Due to the cancellation of one event, it meant that the plan to bring the pilot cohort back onto campus did not materialise. However, the toolkit has been shared and they have been thanked for their contributions. As a token of gratitude, all pilot participants were also given a veg box voucher from the Community Farm. Throughout the project, the academic team met more-or-less monthly to hear about progress and be asked for their guidance on certain matters. In addition, two "monthly roundups" were held with interested members of the wider Climate Action Hub Teams site members to see what synergies and opportunities there were for collaboration and promotion.

The rest of this report has been ordered to reflect this timeline, starting with the social media pilot.



1 Methodology

The methodology of this project consisted of the following:

1. Co-design phase:
 - A youth pilot and young people engagements to co-design training materials and toolkit
 - A co-design survey to document feedback on the materials and before-after feelings about the climate and ecological crisis
2. Intervention:
 - Delivery of training and provision of competency-embedded toolkit
 - A baseline survey of learning related to entrepreneurship for sustainability competencies and self-efficacy
 - Post-engagement focus group
 - Post-engagement survey
 - Coaching

1.1 Conceptual and analytical framework

1.1.1 Learning

Learning was a key concept under investigation in this evaluation. Described by the Art Council (2019) in their Generic Learning Outcomes framework, learning may involve the development or deepening of skills, knowledge, understanding, values, ideas, and feelings. These impacts are measured across five core domains:

- Attitudes and Values
- Knowledge and Understanding
- Skills
- Enjoyment, Inspiration, and Creativity, and
- Behaviour and Progression

Each of domains was measured via before and after surveys and a focus group to assess learning outcomes of young people involved in the formal college setting (see North Bristol Post-16 Centre). Concerning skills, attitudes and values, and knowledge and understanding the focus was on entrepreneurship for sustainability – specifically, we shared knowledge with young people to empower them make a difference through social action. We then measured if this intervention shifted attitudes around responsibility, respect, trust, and feelings (Iniguez-Gallardo, Boero, and Tzanopoulos 2021); changed values; and developed skills in, for example, creative problem solving and goal setting (see 1.1.2).

For enjoyment, inspiration, and creativity, the young people were asked to rate their experiences of using the materials and taking part in the training.

Behaviour was assessed from before and after changes to self-efficacy, collective efficacy and means efficacy (Yakobi 2018) – the belief that they, their group and the people and resources available to them can make a difference, as well as through actual actions taken (e.g., prototyping of communication, speaking with someone in a position of power). Individual, social and material contexts all shape behaviour (see below), and as such all these dimensions were probed in this

project. For instance, during the focus group a question was asked on “Do you plan on doing anything differently as a result of this training?” followed by “if not, what is preventing you?” to understand those barriers.

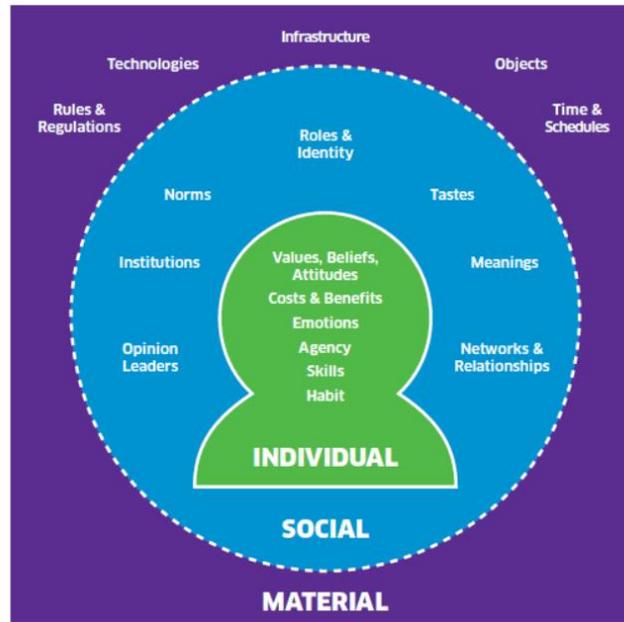


Figure 1 The ISM model. Taken from <https://www.gov.scot/publications/influencing-behaviours-moving-beyond-individual-user-guide-ism-tool/pages/2/>

Finally, progression was measured from reflecting upon the post-engagement survey compared to the baseline based on the progression model and expected learning outcomes/performance indicators.

1.1.2 Entrepreneurship for sustainable development

The competencies from the [EntreComp framework](#) and the [GreenComp framework](#) were combined and embedded into the training and toolkit as social entrepreneurship can help to improve effort and persistence, which are important indicators of self-efficacy (Smith and Woodworth 2012; Schwarzer, R., & Jerusalem, M. 1995) and directly tackles collective-efficacy. Entrecomp is a European Commission framework of competencies that they believe are relevant to all individuals in terms of personal and professional development. The EntreComp Framework is divided into 3 categories – Into Action, Ideas and Opportunities, and Resources. GreenComp, meanwhile, also from the EC, looks specifically at competencies relevant for sustainability. It is beyond the scope of this project to include all the dimensions of GreenComp – for this we would need for sustainability to be embedded within the curriculum or would need time to develop a long training programme that could teach competencies in, for example, systems thinking and futures literacy. As such, we have combined what we think are the essential elements of the latter (e.g., values of fairness, trust in science) to fuse with the former. For a full list of the dimensions included and excluded, see the appendix.

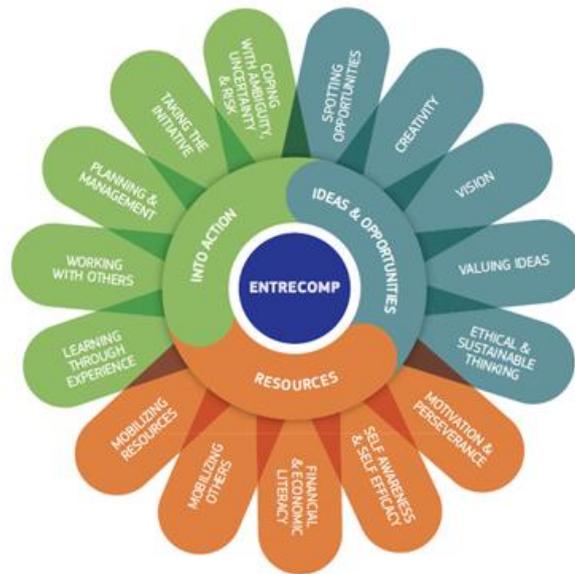


Figure 2 EntreComp framework of entrepreneurial competencies. Taken from https://iefp.eapn.pt/docs/AE1_Quadro_Europeu_competencias_digitaais.pdf

	Entrepreneurship for sustainability examples
Knowledge and understanding	e.g., of climate change, how it impacts them personally, who is responsible, the actions already being taken (inspiration), that they can make a difference, and how they can do it (communications campaigning, speaking with people in positions of power and influence)
Attitudes and values	e.g., commitment to respecting the interests of future generations, care about a harmonious relationship existing between, concern for the short- and long-term impacts of personal actions on others and the planet, trust in science, belief that their actions will make a difference, etc
Skills	e.g., creative problem solving, goal setting, taking into account local circumstances when dealing with issues and opportunities, applying the concepts of equity and justice for current and future generations as criteria for environmental preservation and the use of natural resources, integrating sustainability-related information and data from different perspectives and project management, active listening and empathy, etc.

Given the limitations of this project (time and resources) and based on our initial assumptions that the young people we were engaging had not yet been exposed to entrepreneurial activities within their schooling/personal life, we focused on whether survey responses show signs of developing the foundation level of competencies – the discover and explore phase which “relies on support from others” (see below). For instance, discover focuses on discovering your qualities, potential, interests and wishes. “It also focuses on recognising different types of problems and needs that can be solved creatively, and on developing individual skills and attitudes”. The latter was taught within a class setting, while the former was fostered with the support of Team Entrepreneurship coaches. Explore took place between the sessions when the pupils worked in teams. At the end of the project, we

expected to see some participants build their independence, having worked independently and with their peers and taking and sharing some responsibilities.

EntreComp progression model							
FOUNDATION RELYING ON SUPPORT FROM OTHERS		INTERMEDIATE BUILDING INDEPENDENCE		ADVANCED TAKING RESPONSIBILITY		EXPERT DRIVING TRANSFORMATION, INNOVATION AND GROWTH	
Under direct supervision. (Includes, for example, support by teachers, mentors, peers, advisors, or consultancy services)	With reduced support from others, some autonomy and together with my peers.	On my own and together with my peers.	Taking and sharing some responsibilities.	With some guidance and together with others.	Taking responsibility for making decisions and working with others.	Taking responsibility for contributing to complex developments in a specific field.	Contributing substantially to the development of a specific field.
1. Discover Level 1 focuses mainly on discovering your qualities, potential, interests and wishes. It also focuses on recognising different types of problems and needs that can be solved creatively, and on developing individual skills and attitudes.	2. Explore Level 2 focuses on exploring different approaches to problems, concentrating on diversity and developing social skills and attitudes.	3. Experiment Level 3 focuses on critical thinking and on experimenting with creating value, for instance through practical entrepreneurial experiences.	4. Dare Level 4 focuses on turning ideas into action in 'real life' and on taking responsibility for this.	5. Improve Level 5 focuses on improving your skills for turning ideas into action, taking increasing responsibility for creating value, and developing knowledge about entrepreneurship.	6. Reinforce Level 6 focuses on working with others, using the knowledge you have to generate value, dealing with increasingly complex challenges.	7. Expand Level 7 focuses on the competences needed to deal with complex challenges, handling a constantly changing environment where the degree of uncertainty is high.	8. Transform Level 8 focuses on emerging challenges by developing new knowledge, through research and development and innovation capabilities to achieve excellence and transform the ways things are done.

Figure 3 EntreComp Progression Model from https://iefp.eagn.pt/docs/AE1_Quadro_Europeu_competencias_digitais.pdf

The authors of EntreComp caution against using the learning outcomes as “normative statements to be directly transposed into actual learning activities or be used to measure student performance. They are a basis for the development of specific learning outcomes that are fit for the specific context and a basis for the development of performance indicators”. As such, we developed the following learning outcomes:

What we do	Who with	How they feel	What they learn and gain	Learning outcomes	
				What they do differently	What difference does this make
Training to inspire and empower young people to act on climate change	Young people	>50% feel inspired, enthusiastic, hopeful, and empowered. Most of them (>65%) enjoyed their time.	50% improvement in entrepreneurial skills and knowledge for sustainability (see above table)	Responses on “what will you do differently as a result of this training” will include – - I will be more conscious of my actions and how they impact people and the planet - I will seek out opportunities to make a difference at my place of work/in my community/at university - I will actively listen to people more	50% improvement in self-efficacy and sense of responsibility Long term, leading to young people live in greater harmony with people and nature – they are less anxious, less disconnected and become part of the solution as political subjects, entrepreneurs and environmental stewards. Given the focus on competencies, young people will also enhance their job prospects, having developed for instance project management skills.

Figure 4 Expected learning outcomes/performance indicators

These learning outcomes were assessed in the school delivery only (NBP16C) as it was the only engagement that was ‘deep’ enough to assess possible shifts in learning, entrepreneurial competencies and agency. Self-reflective logs from student coaches complemented these data and it was hoped that an interview with the teacher could also be obtained but this was not possible before the project end.

1.2 Co-design phase

The co-design phase consisted of a day's workshop with 12 progressive youth activists on climate change communications. In addition to being able to test out ideas for communicating their messages, training was provided in how to better understand, find common ground with and appeal to diverse audiences for behaviour and policy change.

A before and after pilot survey was included to understand their feelings about their crisis, level of activism, and views on the communication methods including how to improve them. Feelings of hope are pre-requisites to action (Geiger et al. 2021), so we wanted to assess if the training improved positive feelings. Questions on entrepreneurial competencies were not included as this project had not received funding by this point. See appendix for the before and after survey.

The toolkit was then drafted based on the young people's feedback and entrepreneurial competencies for sustainability embedded throughout. Based on their feedback, social media training was also trialled, and the method added to the toolkit.

A further iteration round allowed more young people to comment on the draft toolkit. They were engaged at events led by the partner projects Avon Schools Eco Network and CCC-Catapult and given a QR code to answer questions on Mentimeter.

1.3 Intervention

In addition to more light-touch events to engage young people and children on specific methods from the toolkit, a deeper engagement was set up with a college in Bristol to train them in how to develop a climate action plan and communications campaign and how to speak with people in positions of power. This solution-orientated approach to climate change communications is based on communications research that posits knowledge alone is not sufficient to move people to action (Moser 2016) and social psychology that states social norms play a big role in beliefs such as self- and external efficacy (Fogg-Rogers et al. 2021). Thus, to encourage more young people to have faith in their own and others' abilities they need to be shown how they can fix climate change (Hayhoe 2016) and be given the tools to engage with decision makers (Wang et al. 2020). According to Ojala and Li 2015 and Monroe 2019, self-efficacy and a trust in decision makers are considered pre-requisites for young people to feel hopeful and take action.

A before and after survey was created to see if the intervention had any influence on participants entrepreneurial for sustainability competencies and self-efficacy. As with the pilot survey, most questions were closed responses with a 1-5 Lickert scale with option for do not know/NA where appropriate. This decision was made to reduce the time needed to complete the survey (e.g., to avoid incomplete responses) and for statistical comparison. The baseline survey also gathered demographic data as well as information about participant's learning environment so we could assess if any of these factors influenced before-after worldviews, self-efficacy, knowledge in how to participate in systems change and trust in decision makers. As the sample size was small this could not be analysed in the end, however it will be in the next project.

Meanwhile, a focus group was held within the session to encourage reflexivity (a key entrepreneurial competency) around questions such as 'what if we don't succeed', 'how do we encourage accountability' and 'how do we build momentum' to increase the chances that they would follow

through and succeed with their plans. Focus groups provide rich and complementary data to surveys, which typically consist of closed responses.

Each team was also assigned a coach to further support collective efficacy (Cox and Flynn 2022).

2 Social media pilot



Figure 5 Some of the young people and project team involved in the climate communications pilot in February. Image courtesy of Avon Schools Eco Network.

Following feedback from the climate communication pilot in February (read about one of the participants reflections [here](#)), additional online training on social media was offered to the participants. The one-hour-forty-five-minute session covered principles of social media campaigning, examples of successful and not so successful campaigning, social media strategizing, tips on how to maximise success on Instagram and the art of content creation, as well as an interactive section on using the content-creation and graphic design tool Canva. Despite a low turnout of three people (although this equates to 25% of all pilot attendees), the event was an enriching experience. The participants liked being shown how to use Canva and being shown “How to create an engaging post and reach a wider audience”. They would have liked more time as it was “very interesting”, particularly how to engage other audiences. One participant said that they would use the learning straight away as in their role as manager of their school’s twitter account.

“Thank you so much I found it really engaging and useful” (Participant 1)

“...it was very engaging thank you for making the workshop!!” (Participant 2)

“I have gained so much confidence through this process. It has helped develop my communication skills with people who share similar interests” (Participant 3)

The recording of the session has since been uploaded to the Climate Action Hub’s [YouTube channel](#), which was set up because of this project.

Mainstreaming environmentalism



Social media 'halo'



Figure 6 A still from the social media pilot, now available on YouTube

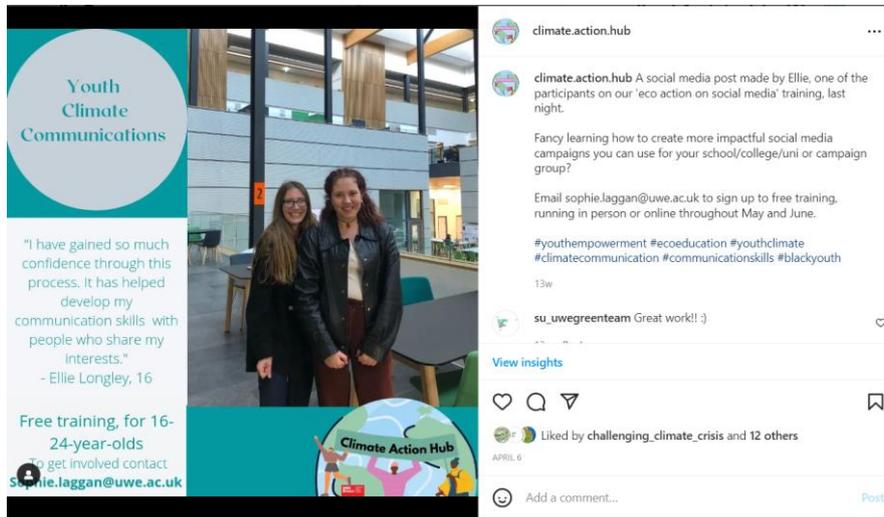


Figure 7 One of the social media posts created by the attendees of the social media pilot, shared on our Instagram channel with permission

3 Brand development

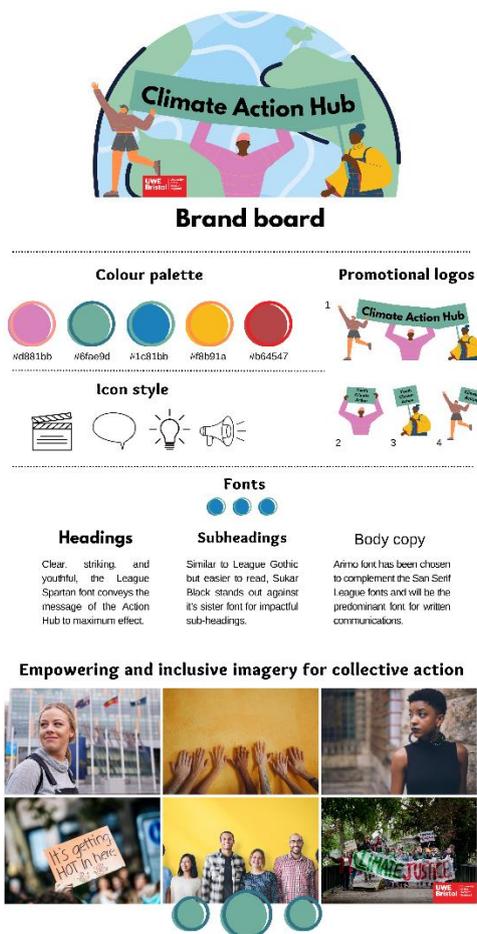


Figure 8 The brand board for UWE's Climate Action Hub

The project had an unexpected benefit of allowing the team to develop our Climate Action Hub brand. The CAH is the umbrella for climate action-related engagement activities between UWE-Bristol researchers, students, and local communities, and was set up by the Science Communication Unit earlier this year. The brand board, produced in Canva, was used during the social media training to highlight the importance of having a strong, recognisable image.

4 Toolkit co-development

To ensure the toolkit embedded both sustainability competencies and entrepreneurship competencies, Sophie (a sustainability and communications specialist) and Lauren (a Lecturer in Entrepreneurship) worked closely during the toolkit development phase. To allow any young person to use the materials independently of the training, the [toolkit](#) has been designed to stand-alone or complement the training. It consists of four sections:

- Section one: lays the foundations for effective team working, with a skills audit for young people to assess their baseline entrepreneurial skills for sustainability, and time set aside to define their action project based on need

- Section two: encourages readers to understand different worldviews – including those from different sides of the political spectrum, and people in positions of power and influence
- Section three: drills down into the communication methods, allowing readers to select the right method for their audience and to prototype and test their communications
- Section four: encourages readers to reflect on their learnings, re-assess their skills and evaluate the impact of their communications

Young people fed into the toolkit via the **CAH-OOT Youth Advisory Board** (N=3), established following the communications pilot, as well as at a youth-led Climate Café (N=25), at a Youth Action Partnership meeting of the CCC-Catapult project (N=4), and at an Avon Eco Schools Network meeting (N=12, plus one teacher). **In total, 14 responses were received via the online Mentimeter survey (13 from young people, one from a teacher). According to respondents, all the original sections of the toolkit were strong, with each scoring at least a 7 out 10.**

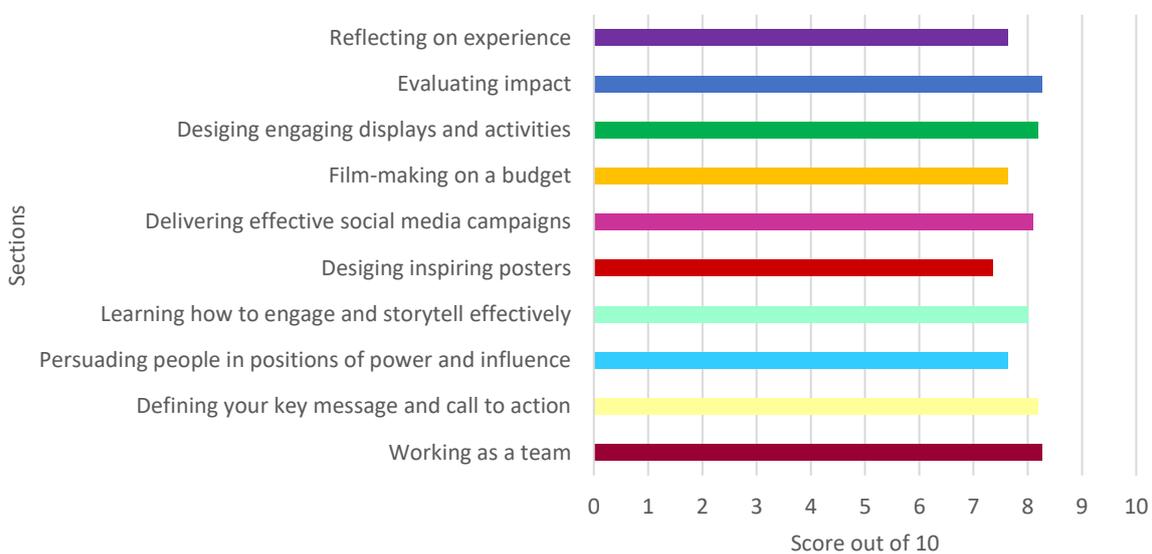


Figure 9 Young people (+1 teachers) rating of the draft toolkit (N=11)

The respondents liked the overall design and the attention to detail in making the booklet easy to follow and engaging. **The teacher even said they would “think about introducing this in our school”.**

“Very logically lay-out and easy to use, design is clear and concise, gives you a range of different ways to engage with the content” (Respondent 4)

“The layout of the booklet is good and follows an obvious narrative that is easy to understand” (Respondent 5)

“I liked how there was different forms of activities to keep people interested in what they are doing” (Respondent 7)

“I really liked the font that was used to describe the tasks. I liked that it was all easy to follow and to understand. I liked the images used” (Respondent 8)

“I enjoyed the questions instead of just information to make it more interactive” (Respondent 10)

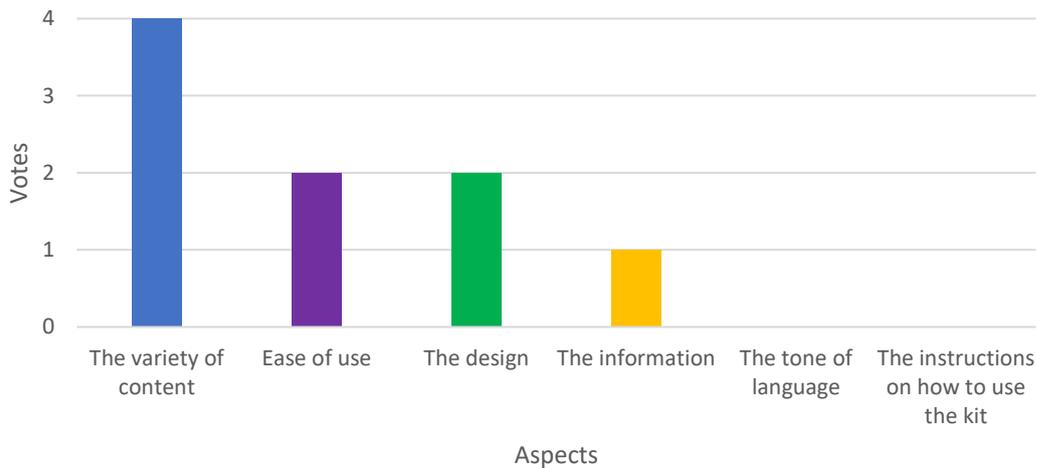


Figure 10 Aspects of the toolkit they liked the most

At the time, the design was monotone with minimal images, and this was picked up by the young people. One also commented that they would appreciate more detail about filming.

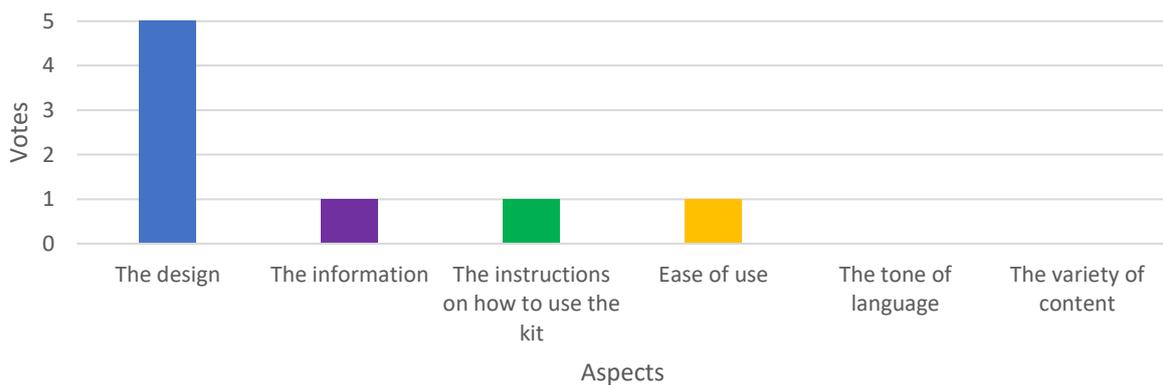


Figure 11 Aspects of the toolkit that could be improved

5 Delivery

Delivery took place in June 2022. Despite two events being cancelled – one of which would have engaged 90 children, the project was still able to exceed its target of 150 young people engaged. In total, 170 young people were engaged through the social media training, co-development phase and delivery phase. Delivery consisted of three training events, ranging from light-touch 30-minute sessions to deep engagements spread over several weeks, and two inspirational workshops. These events were: climate action planning and implementation with North Bristol Post-16 Centre; ‘appreciative enquiry’ with young women involved in the Catalyse Change summit; a lightening workshop on power dynamics with ‘Groundbreakers’ at their awards ceremony; and engaging young people about eco-housing for The Great Science Share and UWE’s School of Engineering Family Fun Day.

5.1 North Bristol Post-16 Centre

Note that none of the quotes in this session have unique identifiers attributed to them (e.g., Participant 1) as they often came from anonymous post-its.

5.1.1 What happened

The most involved part of the project took place at the NBP16C, over the course of two Thursdays in June. Having been approached by the college, the project lead (Sophie) worked closely with the college's Leadership Team to develop a training programme that could be of mutual benefit. After a few discussions it was agreed that we would offer two two-hour sessions, spread over two weeks, with the expectation that young people would work a little between the sessions on a challenge set on day one. **The overall goal was to help the young people to lay the foundations for a youth-led Climate Action Plan.**

In week one, following an inspirational talk about the hope to be found in climate action plans and implementation, the young people worked in teams to vote on their priorities for change (they chose waste), establish SMART objectives, determine who they needed to influence, and come up with an appropriate communication (e.g., persuasive letter, social media campaign, posters, film, etc) to deliver their message. To help the teams work together, they were also tasked with putting post-its on a "tree of expectation" with their ideas. The teams then went away to prototype their communication, research the costs required for their action (e.g., for new recycling bins), list the co-benefits for acting on their message, and produce a timeline for implementation. In the second session, following their presentations, they discussed things like what they would do if they did not succeed first time and how they could build momentum so that they could develop their youth-led climate action plan further. In between the sessions the project supported them via an online coaching session, led by Sophie and two students from Team Entrepreneurship, who both attended the live sessions. As one of the coaches described the training in their self-reflective log: **"[the training] was focused on introducing the students (aged 16+) to climate change issues, what's being done to solve it and what they can do on a smaller scale to help".**

By 2030, the young people hope to:

- Reduce food waste in the canteen by 80%
- Increase the number of students bringing in reusable cups by 50%
- Change all the bins on campus to improve messaging on what to recycle and to improve recycling rates by 80%

Each team took one of the objectives and developed an appropriate campaign. For canteen waste, the young people crafted a letter to the catering company, for the reusable cups the young people created posters to promote an existing reusable cup incentive that they were previously unaware of, and for the bins the young people also crafted a letter. The presentations were well researched, and everyone stood up to speak, although they could have done with more structure, e.g., like a 'pitch' as suggested by one of the coaches.

"All young people presented – these were to a fairly high standard. Was really impressed with some communication skills and group skills, considering this isn't taught at the school".

– Coach 1

“Audience were knowledgeable about the topics, even more so after their research. They knew who to get in touch with to take their concerns further” – Coach 1

The teacher was then able to connect them up with the relevant people in charge to broker those conversations. One team also now wants to set up a student-led social media campaign and they plan to implement this through the Student Council next year.

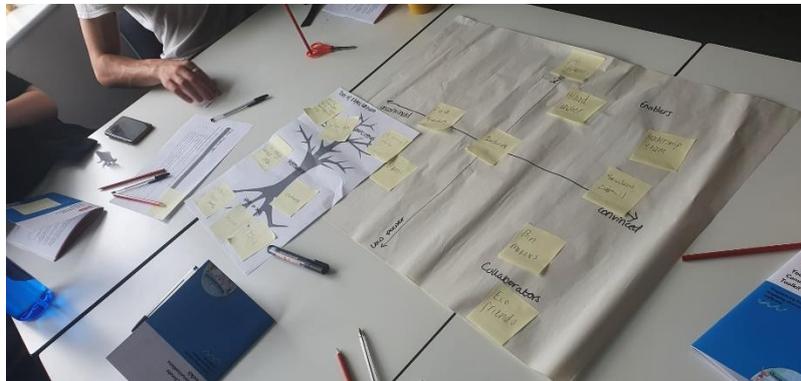


Figure 12 Power mapping and tree of expectation activities from the training

If they are not successful first time, the young people intend to fundraise (e.g., a bake sale, pub quiz or tap into the Student Council fund), contact other people, ask for more support, or target a different area. Meanwhile, to maintain/build momentum, they intend to pass on ideas to the new student council, use polls and surveys to increase social media engagement and link to local and national campaigns.

The engagements had been designed in such a way as to foster entrepreneurial competencies for sustainability, including teamwork, problem solving, and self-reflection, and in the process seek to enhance the young people’s agency and self-efficacy – the belief that they can make a difference.



Figure 13 Young people and coaches attending the training at NBP16C

During the reflection, the young people commented that they had not had lessons like this before, that allowed them to work in a team and to come up with something practical, and that they could see having an effect. ‘Everything we’re taught is theoretical’ commented one student. They also reflected upon the use of online tools for collaboration such as Google Drive, which they found

useful and would use again. For one student it made them realise “I would like to do more practical work like making a PowerPoint”. Overall, the group found lots of the activities to be useful for university and helped to develop both their organisational skills and in knowing how to implement a plan. Some of the other feedback included:

“There’s more everyone can do”

“I learnt that I enjoy group work”

“I can work under a time limit/deadlines are motivating; working with others is really helpful; there is more to learn in regards [sic] to campaigning”

The young people were also asked if their ideas on sustainability had been challenged and one wrote “My ideas haven’t been challenged”. This is not surprising as the baseline revealed a high level of interest and concern about climate change and sustainability, although this statement does not necessarily reflect the views of the rest of the group. From discussions with the young people however, they all had very little lived experience of climate action beyond protesting or personal actions (what is often called the value-action gap (Blake 2007), i.e., high interest or concern about a topic but low action on it). Furthermore, only one participant explained that they were familiar with Bristol’s climate action plans.

5.1.2 Findings from the pre- and post-engagement survey

11 participants filled out the initial survey, 5 males, 7 females, all White British (N=10) or White Irish (N=1). However, this did not reflect the diversity of ethnicities in the training sessions.

Of the 12 people that answered the final survey, 58% (N=7) thought the quality of the training was excellent and 42% (N=5) thought it was good. **Over 80% thought the training made them feel like they could make a difference (N=10, 84%) and more than 70% of participants felt the training gave them the tools they needed to make a difference (N=8, 72%).** More than 80% of participants thought the training was enjoyable (N=10) and over half thought it was inspirational (N=8, 67%). 50% (N=6) believed the training to be creative.

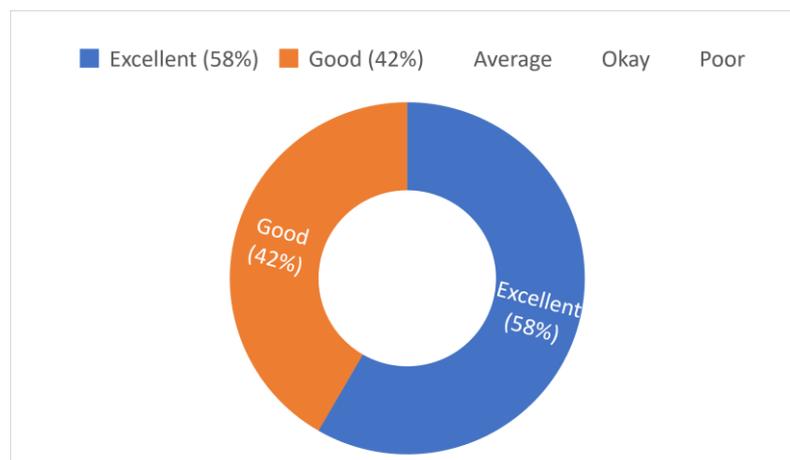


Figure 14 Quality of the training (N=12)

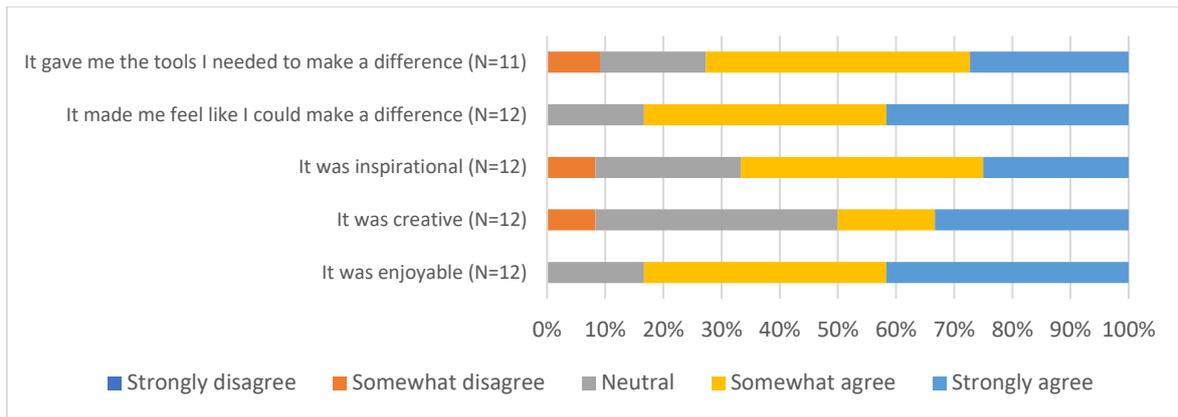


Figure 15 Participants thoughts on the training

Feelings about the climate and ecological emergency were more negative prior to the engagement, with confusion (N=3), scared (N=7), powerless (N=8) and anger (N=7) all mentioned the most frequently. After the engagement, these feelings all decreased (by 10%, 4%, 13% and 12%, respectively, while **feelings of hope and optimism increased** (by 30% and 38%, respectively) along with a feeling of being “empowered to act” (+29%). Concern was a constant feeling among all participants and remained unchanged after engagement. Note that for this question, participants could select more than one feeling and were also given space to add their own feelings.

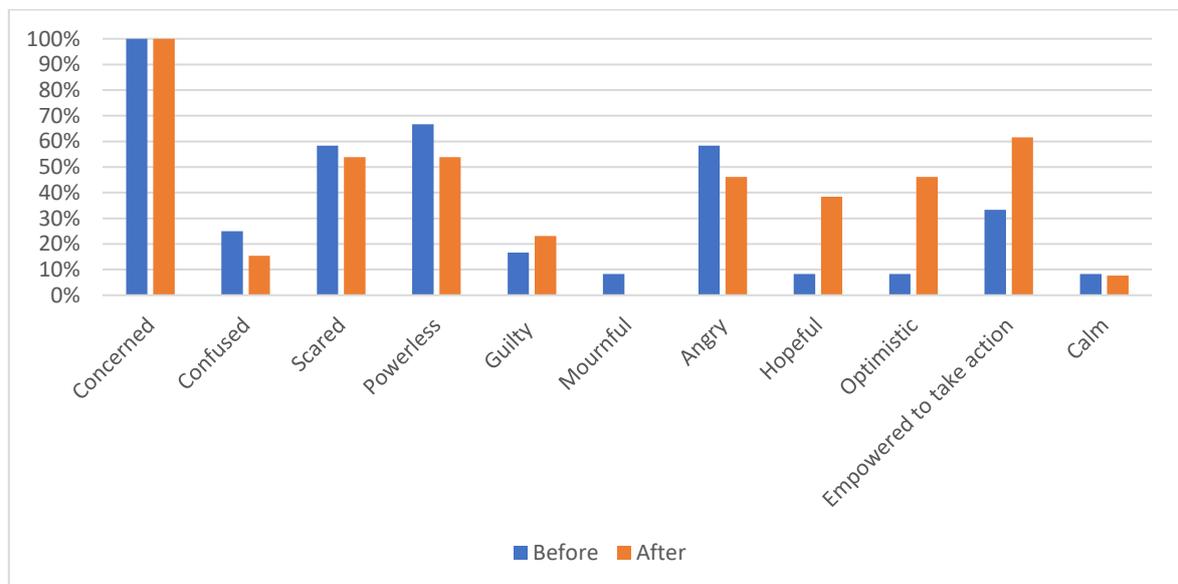


Figure 16 Before and after feelings about the climate and ecological emergency

Generational beliefs did not change much, however there was a **decrease in the responsibility assigned to older people (-33%) and a marginal increase in the trust of older generations and perceived responsibility of youth** (both +8%). This is great to see as trust and self-efficacy are prerequisites to action (Ojala and Li 2015; Monroe 2019) and may indicate they are more willing to take action themselves instead of assigning it to others.

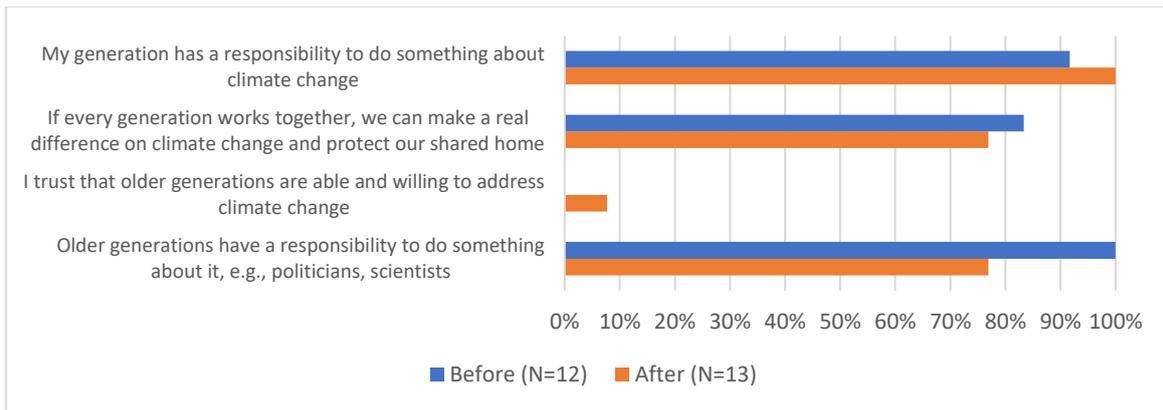


Figure 17 Participants before and after generational beliefs

Not a single participant thought climate change was not affecting them, and this aligns with existing research (Hickman et al. 2021). Similarly aligned with research, young people would like to do something about climate change but do not know how (Kenis and Mathijs 2012). Among all the before-after changes, the change to young people’s perceptions in **knowing how to make a difference** was the most significant (from 50% did not know how before, to 8% after), along with **concern society is not acting fast enough, decreasing by 38%**. Also, **more participants believed a better future is possible following the training (19% increase)**.

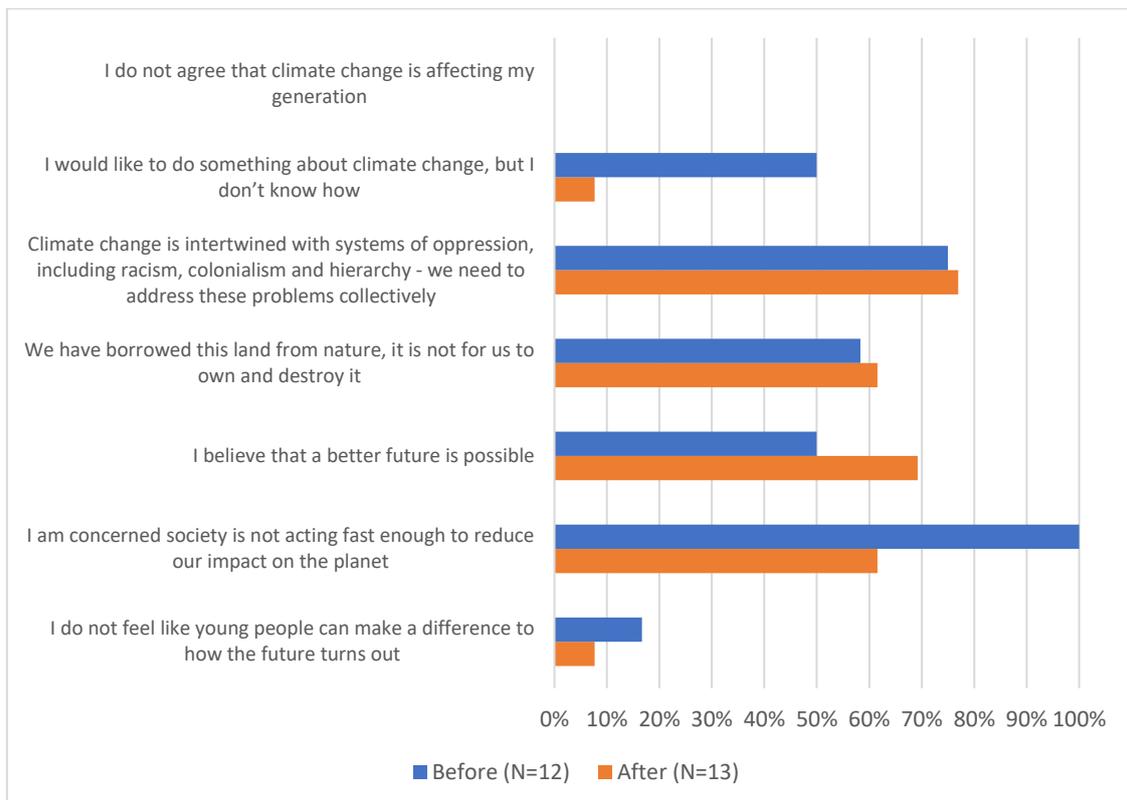


Figure 18 Participants before and after perceptions of climate change causes, concern, and agency

Regarding entrepreneurial competencies, there was a slight decrease in the average score for “I follow my passions and create values for others” (from 4 out of 5 to 3 out of 5) and a slight increase in being able to trust their own ability to generate value for nature, people, and the economy

(from 3 to 4) following the training. The Likert scale for this and the subsequent two questions was 1 disagree to 5 agree.

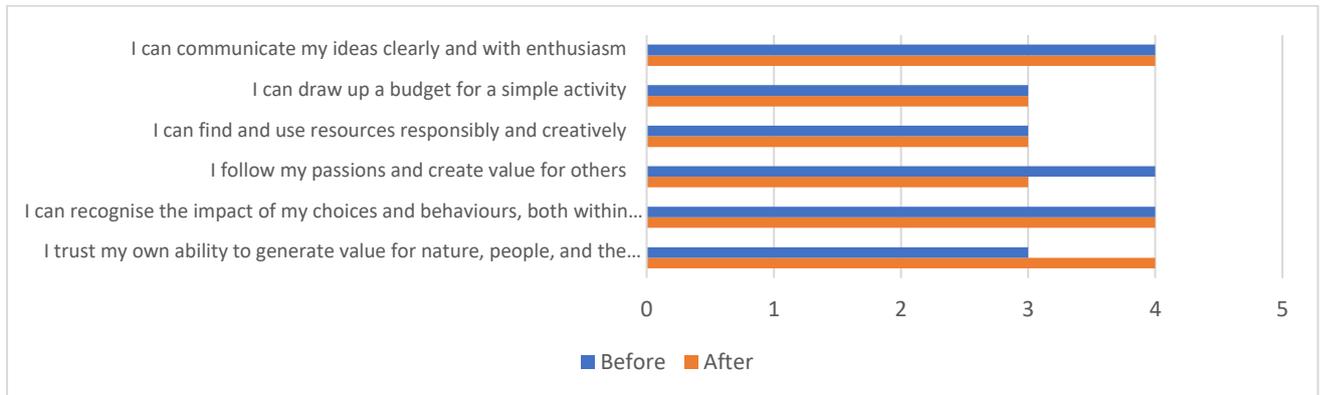


Figure 19 Before and after agreeableness related to Entrecomp: resources statements

Both participants ability to understand and appreciate the value of ideas for society, the environment, and the economy and to define the goals for a simple activity increase by one point (from 3 to 4).

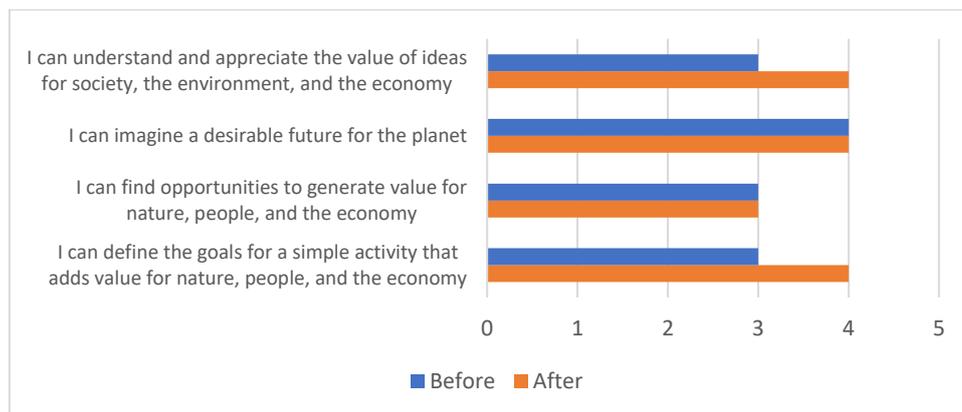


Figure 20 Before and after agreeableness related to Entrecomp: ideas and opportunities statements

There was no observed change in the entrepreneurial competencies related to “into action”. This is an interesting finding as the focus group (the reflection session at the end of week two) would suggest otherwise (see previous section).

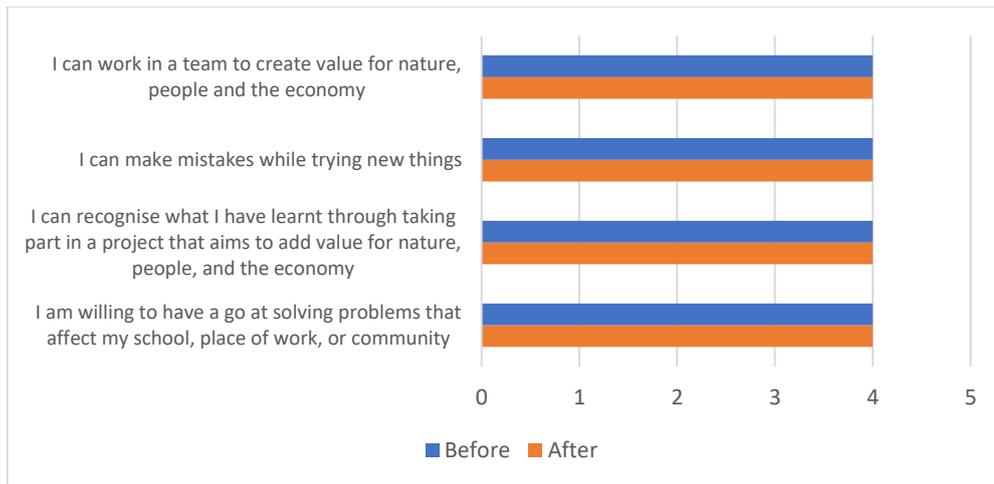


Figure 21 Before and after agreeableness related to *Entrecomp*: into action statements

Not everyone answered these last three sets of questions on entrepreneurial competencies, with responses rates ranging from 8-10 in the baseline survey and 10-12 in the post-engagement survey. This small sample size makes it difficult to draw any conclusions from these results, however it has made us question whether a) the wording was easy to understand, b) was specific enough and c) whether enough time was given to allow the young people to observe changes in their competencies. Most of the group were already quite active in the school (through the Student Council) and may have been exposed to these competencies prior to our engagements. There may also be a need to solidify learning around entrepreneurial competencies more within the workshop, e.g., listing them as learning objectives and highlighting how these competencies are transferable, possibly showing them how they are following a framework like Design Thinking (double diamond - divergent and convergent thinking etc.).

Sustainability competencies, meanwhile, saw a greater change compared with the baseline. **Slightly more participants than before are confident in their ability to explain how protecting nature and the use of natural resources relates to fairness for current and future generations** (54%, N=7 of 13 vs 36%, N= 4 of 11).

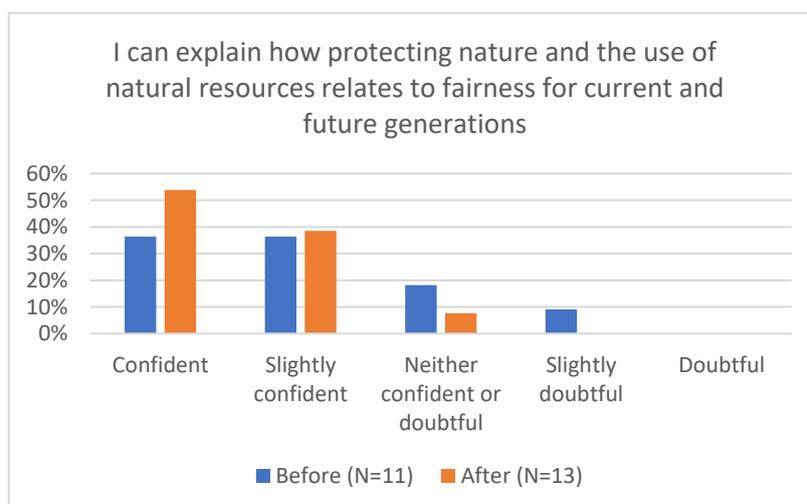


Figure 22 Before and after confidence in ability to explain how protecting nature and the use of natural resources relates to fairness for current and future generations

31% of participants (N=4 of 13) are confident that they can consider local circumstances when dealing with sustainability issues and opportunities, and 46% (N=6) are somewhat confident. No participants were fully confident before.

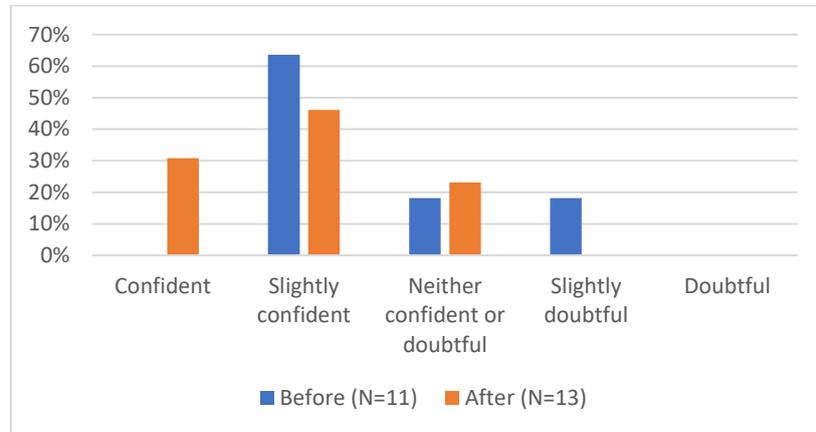


Figure 23 Before and after confidence in ability to take into account local circumstances when dealing with sustainability issues and opportunities

Over 50% (N=7 of 13) of participants are now confident in being able to understand diverse perspectives on sustainability and how best to address climate change, compared with less than 20% (N=2 of 11) before.

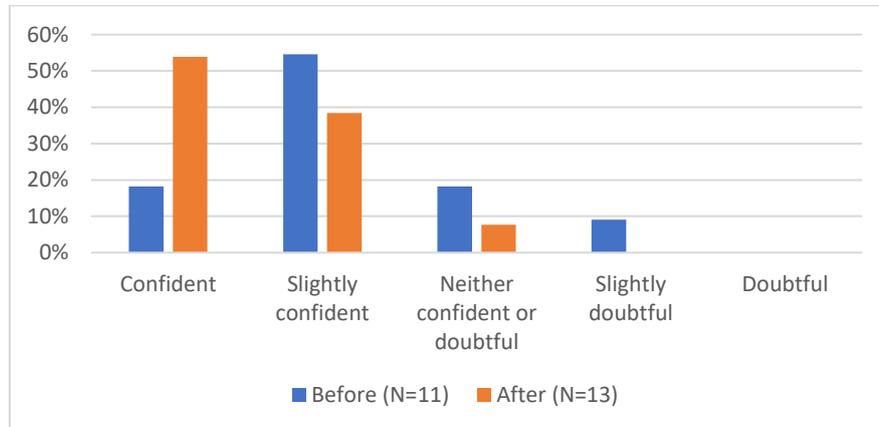


Figure 24 Before and after confidence in ability to understand diverse perspectives on sustainability and how best to address climate change

All participants would like more opportunities to take action for sustainability at their college (N=12, 100%) and they said they would participate in projects like this again. However, there is evidence from the survey and focus group that more support is needed.

Support ranged from educational:

“More lessons on climate”

“More workshops, communication between different groups (eg students and teachers), better access to resources and information on how to structure campaigns”

To practical:

“Help ...with the implementation of our projects”

“I would like more information on who we can contact to make a difference, and more workshops like these in order to design and implement realistic targets”

“[I would like] safeguarding guidance for using social media [and] ambassadors to run social media”

“[We need] more teachers/students that want to help”

To systemic:

“Our school needs to: better educate and inspire students, better recycle and negotiate for a more sustainable catering company. The school also needs to consider how race, gender and class will influence participation and how to link race, class and gender equality to climate change”.

“I hope that our campaigns are influenced [sic] and the environment is considered before more decisions made at school”.

Overall, this engagement was a resounding success and will be used as a model for future engagements with young people.

5.1.3 Reflections from the coaches

One of the coaches gave their feedback via a self-reflective log, provided before the engagements began. They explained how some activities could have had clearer instructions and more time could have been allowed for group activities and for explaining how the coaching session works. They also stated that at times the young people got distracted and started going off topic. Future engagements, they suggest, would benefit from mixing up the groups so they are not only with their friends, and to allow the teams to choose what theme to focus on. One table voted on energy but because this was dismissed in favour of the majority, they lost a bit of interest.

“The students were really engaged when they had an activity to work on in their teams. The passion really came out, showing that they wanted to make a difference. Even though some of them said they were only there because their teacher made them, lots of those members actually engaged the best, especially when feeding back to the whole group, which was lovely to see. Lots of ideas were made around different sustainability problems, lots of which created the atmosphere of actually being able to make a difference in the school, and a sense of power to make a change.

“Small groups worked well and gave them a chance to express themselves more confidently, especially those more introverted who I could see where a little anxious speaking in front of everyone. I thought Sophie did a good job at making the PowerPoint engaging, as well as educational”.

As a result of the training, the coach thinks that “the students are more likely to speak up around sustainability within their school, whether that’s with their friends or to those in positions of power”.

5.1.4 Learning outcomes

Effort, persistence, action tendency, hopefulness and ownership are all indicators of self-efficacy (see methodology) so taken together with perceived quality of the training, the results of this engagement suggest it was effective at increasing individual, collective, and means level efficacy. See table below.

Table 1 Expected and actual learning outcomes

	Learning outcomes			
	How they feel	What they learn and gain	What they do differently	What difference does this make
Expected	>50% feel inspired, enthusiastic, hopeful, and empowered. Most of them (>65%) enjoyed their time.	50% improvement in entrepreneurial skills and knowledge for sustainability.	<ul style="list-style-type: none"> - Responses on “what will you do differently as a result of this training” will include – - I will be more conscious of my actions and how they impact people and the planet - I will seek out opportunities to make a difference at my place of work/in my community/at university - I will actively listen to people more 	<p>50% improvement in self-efficacy and sense of responsibility</p> <p>Long term, leading to young people live in greater harmony with people and nature – they are less anxious, less disconnected and become part of the solution as political subjects, entrepreneurs and environmental stewards. Given the focus on competencies, young people will also enhance their job prospects, having developed for instance project management skills.</p>
Actual	Feelings of hope and optimism increased (by 30% and 38%, respectively) along with a feeling of being “empowered to act” (+29%).	<p>18% increase in ability to communicate sustainability concepts</p> <p>77% increase in ability to consider local circumstances for sustainability.</p> <p>They learnt that “there is more [that] everyone can do”, they like teamwork and that it is helpful, “can work under a time limit/deadlines are motivating” “there is more to learn in regards [sic] to campaigning”.</p>	<ul style="list-style-type: none"> - They will take forward actions in their Student Council - They had already arranged meetings to speak with people in positions of power. This shows signs that they are already seeking out opportunities. Meanwhile, their reflections on what they will do if they do not succeed shows persistence. The role playing is evident that they can listen to others’ views and is reflected by the 50% increase in ability to understand diverse perspectives. 	<p>42% reduction in “not knowing how to make a difference”.</p> <p>19% increase in belief that a better future is possible.</p> <p>8% increase in perceived responsibility of young people to act.</p>

5.2 The Global Goals Centres’ Groundbreakers awards ceremony

This [Award Ceremony](#) was hosted at the Bristol Beacon on 30th June 2022, with around **45 attendees**. The participants were young people who had made major contributions towards advancing the Sustainable Development Goals in Bristol. Laura Fogg-Rogers attended on behalf of the Climate Action Hub and delivered a 30 minute ‘Lightening Workshop’ to 15 secondary school attendees, based on the audiences section of the Climate Action Toolkit. All young people attendees received a copy of the toolkit to take away. Feedback from the young people and the responsible

adults was very positive, with connections made for further delivery with the Centre for Sustainable Energy and Bristol Green Capital Partnership.



Figure 25 A post by Laura while attending the Groundbreakers award ceremony

5.3 Catalyse Change summit

On 13th July, both Dr Laura Fogg-Rogers and Sophie Laggan took part in the Catalyse Change Summit, an annual event hosted by the social enterprise of the same name to launch its mentoring programme for young women interested in sustainability careers. On this day, the duo set a team of five young women a challenge that they had to try to solve using a process called Appreciative Enquiry. The challenge they set was the following:

*A key challenge is that **citizens are often not included in decision making processes for a fairer, greener world** and many do not want to be. However, there is great value in including them, and empowering them to be active citizens and political subjects. How do we get to a place where citizens identify as activists involved in the development decisions of their city/town and community? What would such a place look like? What mindset, relationships, skills, and training would we need to get there? How do we connect groups and/or what would appeal/help young people to join existing climate action/environmental groups?*

Over the course of two hours, the group worked their way through the “Innovators Compass” on Mural, to identify the issues, think through guiding principles, dream big about ideas and then solidify and narrow down ideas into actions.

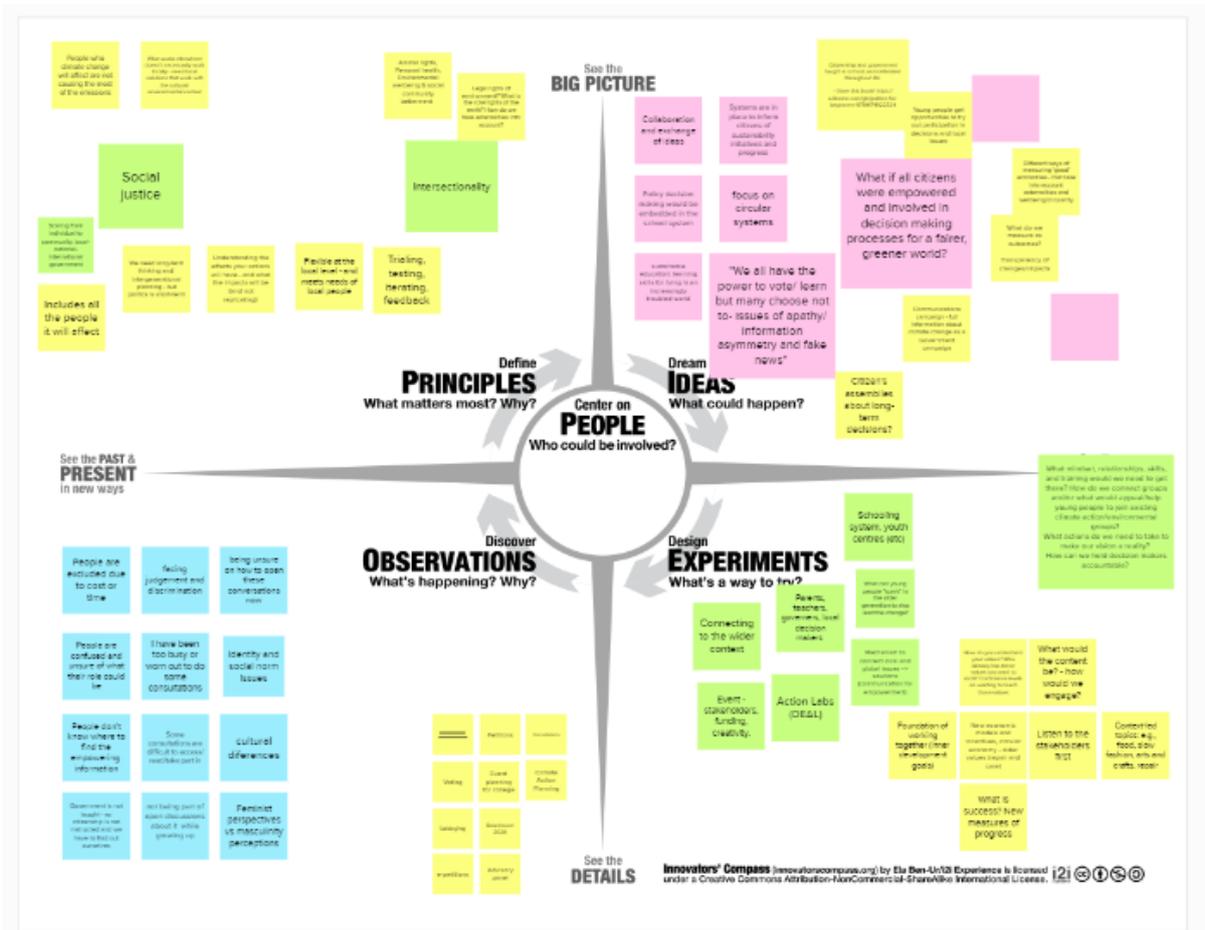


Figure 26 Mural board created during the session

The young women decided that this future would include school and community group workshops so that all citizens could be included in decision making processes. It would be scalable by design to ensure the citizens ideas were fed back to local, national, and international decision makers where relevant. And through the process young people and citizens would gain personal development skills (e.g., around universal values), practical skills (e.g., sustainable food sourcing, ways to reduce consumption, citizenship) and information on alternative social and economic models. At the end of the two hours, the group presented back to the 20 other young women in the room, as well as the host, the six facilitators and the five guest businesses.

5.4 Family Fun Day and Great Science Share

At the end of June, families from across the West of England, equating to 900 individuals, were invited to a [family fun day](#) at UWE’s School of Engineering to be amazed and inspired by different engineering solutions. During the day, Dr Deborah Adkins from the CAH-OOT team presented her

interactive session on eco-housing, highlighting the benefit of tangible objects for engagement on complex topics. And earlier in the month Deborah delivered her activity again during the [Great Science Share](#), to a more intimate audience of 30 children and young people. During these events, Deborah was supported by two UWE student ambassadors.



Figure 27 Deborah's eco-house activity in full swing during the Great Science Share

6 Project promotion

6.1.1.1 Social media

An Instagram page was set up for the project to act as its main communication channel. This is because more young people use Instagram than other platforms (e.g., Twitter or Facebook). **During the 90 days in which has been 'live', the account has gained 103 followers, reached 1,368 accounts and directly engaged 44**, i.e., through them commenting on or liking posts we've shared. The post with the most engagement has been the 'reel' to promote the launch of the toolkit.

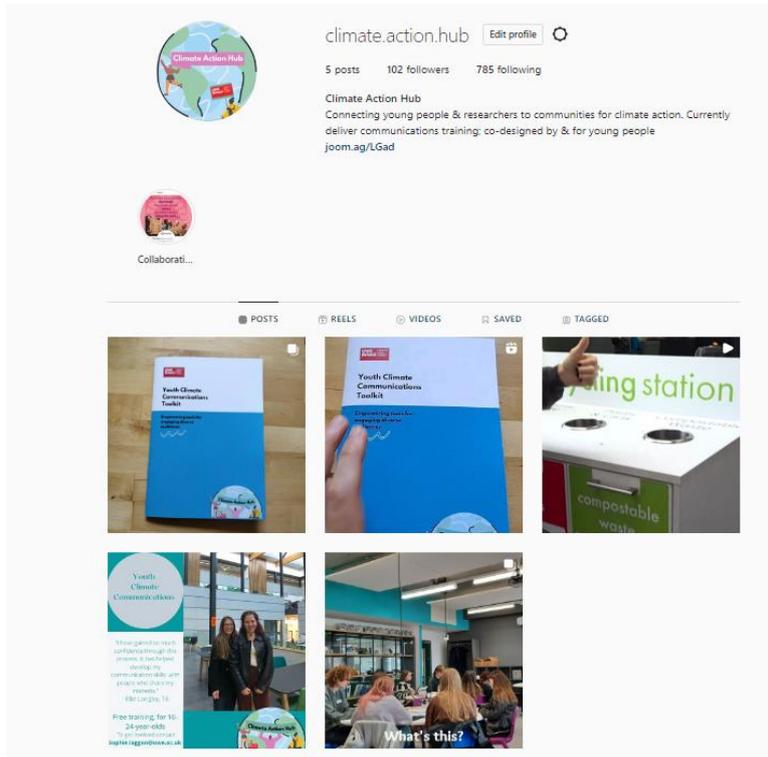


Figure 28 The Climate Action hub Instagram page

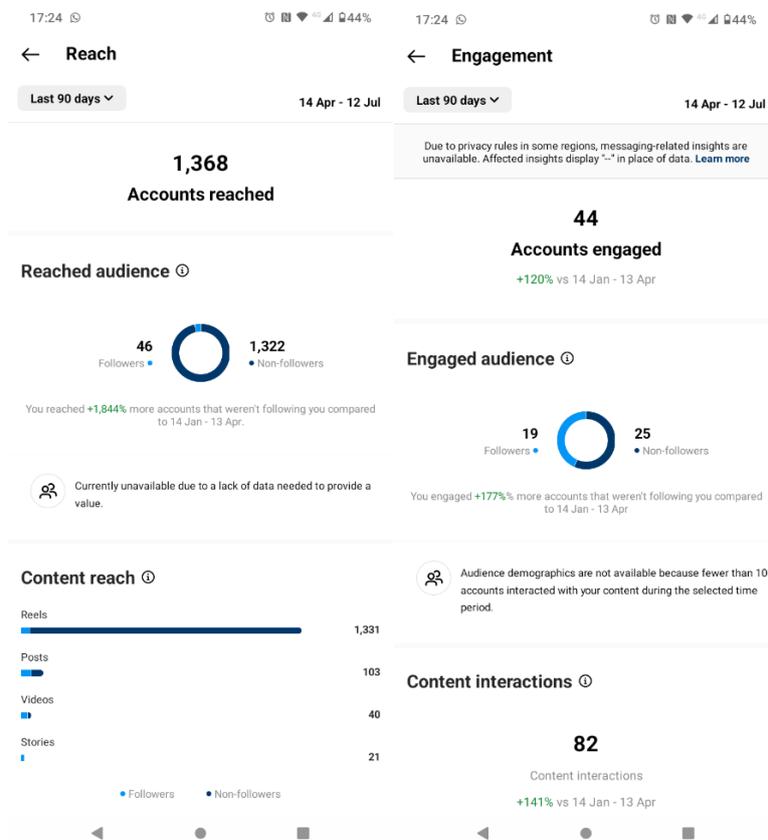


Figure 29 Total reach and direct account engagement for the Climate Action Hub's Instagram page

23% of all followers are 18-24-year-olds and 7% are 13-17-year-olds. However, the largest following comes from 25-34-year-olds (30%). Given the types of people we followed and the content of the posts we shared it is unsurprising that most of our followers – 65% - are from the UK. Indeed, as this is our target region this is reassuring to see.

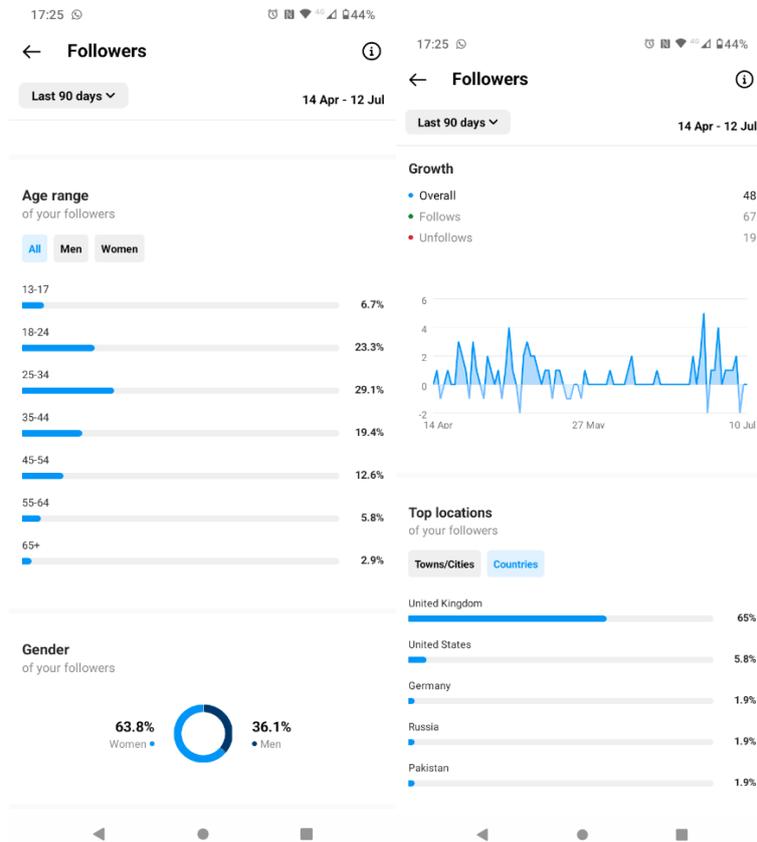


Figure 30 The profile of the followers of the Climate Action Hub on Instagram

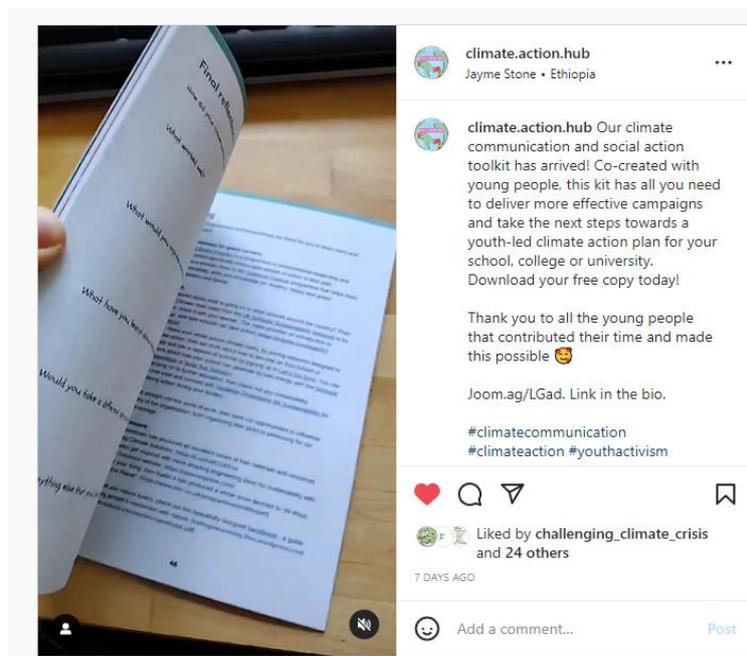


Figure 31 Instagram reel to launch the toolkit

Throughout late May, June and early July, the toolkit and training was promoted via various channels, including radio, educational platforms, blogs, environmental and education-based networks internally (e.g., via Teams) and externally on Twitter, films, and through online webinars. Below we summarise the promotional activities that took place.

Table 2 CAH-OOT promotional channels and details of what took place

Promotion channels	Details
Ujima morning radio show	Dr Laura Fogg-rogers introduced the work of the Climate Action Hub and the youth training (35 minutes in). In this illuminating talk , Laura explains the role of social norms, community engagement and collaboration for behaviour change, empowerment, and wellbeing, sharing inspiration from projects happening within Bristol and the West of England.
The Global Goals Centre resource hub	The toolkit was added to the Centre's online resource hub
Sustainable Hive twitter	Toolkit promoted on their account.
Climate Outreach	Arranging a call with Climate Outreach to discuss how we can support one another with our youth empowerment work (postponed till August)
Science Communication Unit blog	Two blogs posted – one about the first pilot, one blog about the toolkit . A third will be posted about the NBP16C engagements. We also re-posted Gracie's blog from the Avon Schools Eco Network. The blog about the pilot is the second most-read blog on the Science Communication Unit website, with 77 unique page views since its launch in March.
UWE Engineering Our Future blog	As above. See here
UWE Research Business and Innovation blog	A blog to promote the Climate Action Hub and the toolkit, and announce the new funding (in progress)
Climate Action Hub homepage	The project set up a homepage on the Science Communication Unit page to direct all traffic wanting to know more about the training and toolkit.
CAH Microsoft Teams site	A Climate Action Hub Microsoft Team's site was also set up that has expanded to include 17 other UWE members.
Personal twitter	Reposting and sharing any news about this project.
Instagram	Post and reel on the Climate Action Hub page to launch the toolkit.
Climate and Culture knowledge exchange event, 23 rd June, afternoon session	Presented at this event to promote our work more broadly and to share our toolkit. Organised by the National Centre for Academic and Cultural Exchange . 70 people attended the session and 9 people have since listened to the recording on their soundcloud channel .
UNESCO Webinar series on Climate Change Education for Social Transformation	Attended session 2: How climate change knowledge can become action (31 May 2022) to share the toolkit and our work more broadly.
STEM Learning	Toolkit will be shared to STEM Learning, a national charity connecting with 1,000s of STEM Ambassadors and teachers across the UK
CCC-Catapult	Shared to the 16 members of the team. So far, one member has requested hard copies of the toolkit
Avon Schools Eco Network filming	Sophie and Laura were filmed by ASEN for a film about climate solutions that they will use to recruit new students next year. They both mentioned the climate comms training as something that gives them hope and inspiration.



Figure 32 Sophie attending CCC-Catapult's youth Climate Cafe to ask for feedback on the draft toolkit



Figure 33 Promoting the toolkit through personal channels and networks (left); UWE Engineering tweet to launch the toolkit and training (right)



Figure 34 The toolkit being spread further afield thanks to Sustainable Hive's post (left); reaction to toolkit promotion on Twitter (right)

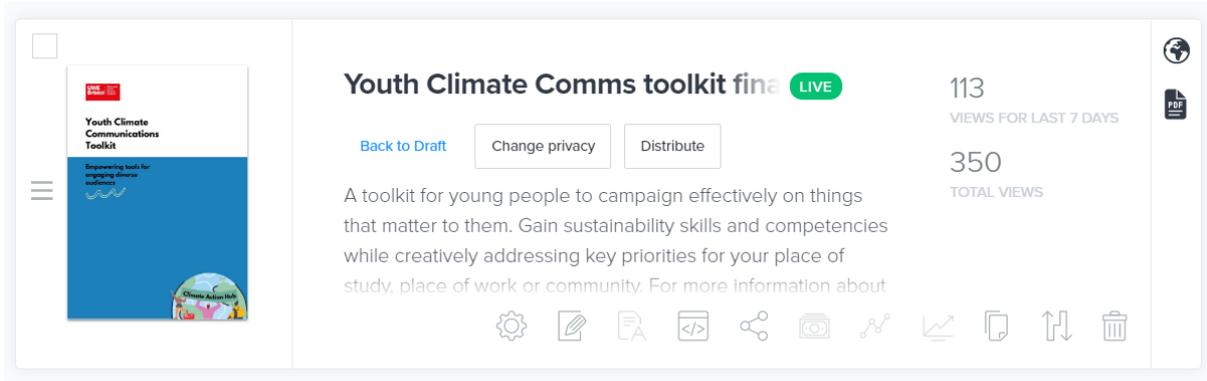


Figure 35 Analytics of toolkit views from Joomag (13/7/2022)

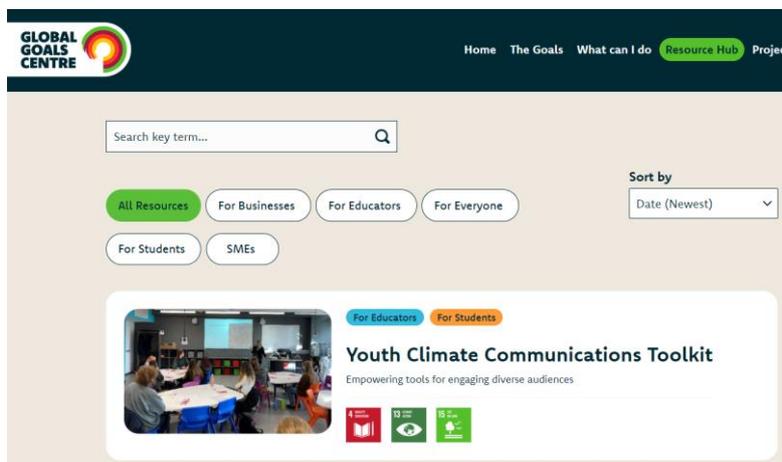


Figure 36 UWE's Youth Climate Communication Toolkit featured on the website of The Global Goals Centre

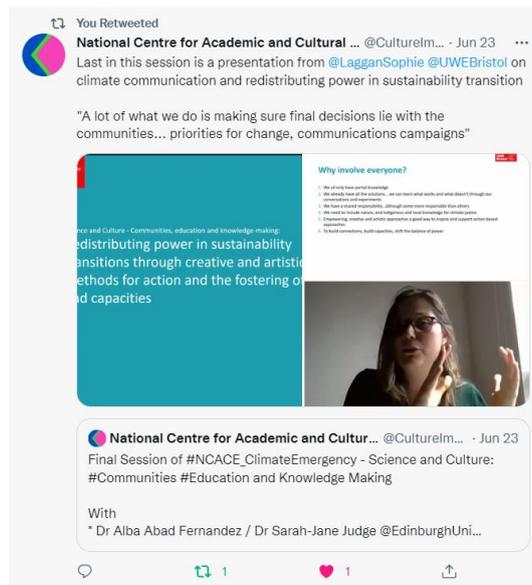


Figure 37 Sophie Laggan presenting at the National Centre for Academic and Cultural Exchange event in June

7 Engagement figures

Below summarises all the CAH-OOT activities and their subsequent engagement numbers. Cells with an em-dash indicate not applicable or missing data. In total, the project **directly engaged 201 young people** and **337 adults** and **indirectly engaged at least 5,000 young people**. So far, the toolkit has been viewed **398** times and has been picked up by other youth empowerment organisations, including the Sustainability Committee at UWE-Bristol that plan on using the resource in their own work.

Over its five-month duration, the project delivered four training events, ranging from light-touch 30-minute sessions to deep engagements spread over several weeks. The team shared the projects resources and its umbrella initiative the Climate Action Hub at three relevant external events, reaching teachers, business, academics, and artists, and engaged with the media via blogs and radio. Together with sharing the toolkit on various educational platforms, it is estimated that the total reach of the project to all ages was over **35,000**.

Table 3 Engagement numbers of the CAH-OOT project

Activities	Directly with training and toolkit	Indirect young people	Direct engagement with adults	Indirect all ages/age not known
CAH Instagram	6 (23% of 44)	24 (23% of 103)	38 (direct engagements – young people)	80 followers (not 16-24) 1,368 accounts reached
Youth Advisory Board (same as those on the Social media training pilot)	3	-	-	-
Co-design: Climate Café engagement	25	-	5	-
Co-design: Avon Schools eco network meeting	12	-	1	-
Co-design: CCC-Catapult meeting	4	-	1	-
CCC-Catapult project team	-	-	16	-
North Bristol Post-16 Centre	15 young people; 2 coaches	800	1	
The Global Goals Groundbreakers Awards	15	45	3	10
Toolkit views	-	-	-	398
Ujima radio show	-	-	-	10,000
Climate and Culture talk	-	-	79	1,603 (Twitter)
Blogs	-	-	-	77
Twitter	-	-	31 (Eng our Future) 42 (Sustainable Hive) 20 (Great Science Share) 18 (Groundbreakers) 12 (Catalyse Change) 35 (culture and collaborations) 14 (Climate Café) 19 (ASEN blog) 23 (CCC-Catapult)	Followers: Engineering our Future: 583 Laura Fogg-Rogers: 2,463 Sustainable Hive: 1,656 NCACE: 1,608 Dobby B: 3,345 CCC-Catapult: 249
Catalyse Change Summit	25	-	-	2,182 (Instagram) 3,970 (LinkedIn)
Sustainability Challenge	-	30	-	2
Great Science Share and Family Fun Day	32	900		
Climate Action Hub Teams site	-	-	17	-
Avon Schools Eco Network film	7	3,300	-	-
Centre for Sustainable Energy's Bright Green Future programme	55	-	-	2
TOTALS	201	5,099	337	29,596

8 Project outputs

The project produced an impressive number of outputs during its short duration. These include: four youth engagement events, a Youth Advisory Board, Toolkit, social media e-learning, blogs, Team's site and project page. Below you will find a full summary.

Table 4 CAH-OOT project outputs

Outputs	Number
Young people engagements	4
Youth Advisory Board	1
Presentations	1
Instagram page	1
Project page	1
Toolkit	1
Social media e-learning	1
Brand board	1
Logo	1
Climate Action Hub Microsoft Teams' site	1
Blogs	4

9 What's next?

9.1 Replicating the project

CAH-OOT was recently funded by Enterprise Educators UK to scale this work over the next academic year. The new project is titled: **Towards Climate Change Action: The Role of Entrepreneurial Design Thinking in Sustainability Education**

Building on our existing [sustainability education programme](#), we will develop and deliver 10 half-day climate action workshops to circa 300 16–24-year-olds across a range of educational settings through our extensive networks within and outside of UWE Bristol (including established links with local schools and colleges). During the workshops the young people will learn the latest in social psychology, design thinking and entrepreneurship, and apply this learning through community activities, such as filmmaking. The aim of the workshop is to empower them to engage the public on issues that matter to them and to use their creativity and initiative to think through design solutions. The participants will be supported in their idea development by Team Coaches. Students from UWE's Team Entrepreneurship programme will be recruited into these roles as many of them have developed strong team coaching skills through their degree studies, as well as knowledge of the entrepreneurial design thinking approach.

Through connected projects, e.g., [Inspire Sustainability](#), and the team's growing network, there are already several colleges and youth groups to work with. Before commencing this project, all feedback from this pilot will be incorporated to ensure the offering can be further refined.



Figure 38 A post from Sustainable Hive about the toolkit which attracted interest from teachers.

9.2 Embedding the training in other programmes and projects

The project team have been honoured by the feedback received so far from the toolkit. For instance, the Centre for Sustainable Energy said:

“The toolkit is a fantastic way to empower young people to take well-planned and effective action on issues they care about. The holistic and intersectional approach the toolkit takes makes it extremely relevant to the environmental and social justice issues young people want to communicate about. We will be sharing the toolkit with our Bright Green Future students as an invaluable tool they can use to plan the campaign projects undertaken as part of our programme.”

As there is a clear need for this work, in August, the project will be meeting with **UWE’s student-led Sustainability Committee and Green Team** to find out how they can embed this training into their work. The project team are also in discussion with national charities **Climate Outreach** and **The Centre for Sustainable Energy** to see how they can work together to offer this training through their programmes, and some of the team are meeting in to discuss other **funding opportunities** to take forward the Climate Action Hub together with communities in Bristol. Sophie will also continue to work closely with Catalyse Change over the coming year as a **mentor** for the programme.



Figure 39 Catalyse Change Instagram post advertising the summit and introducing Sophie as a mentor

9.3 Enhancing staff communications and opportunities for young people

Finally, all the project team will continue to work with one another, connecting through the Teams site, through existing projects and via bidding for projects in the future that seek to put young people at the heart of decision making for sustainable development. All the pilot participants will also be presented with paid opportunities to take part in future events and activities to honour the time, skills, and wisdom they can bring to the table.

9.4 Future funding

Going forward, this project requires more support in the form of paid members of staff and paid members of the community to replicate these activities further and begin to institutionalise these processes in schools and youth groups so that all young people are empowered and presented with opportunities to influence climate decision making processes. This process will require time, collaboration, and careful facilitation.

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11 Appendix: statements from Entrecomp and Greencomp

Statements relating to skills and attitudes, adapted from the Entrecomp framework

- I can find opportunities to generate value for others
- I can develop multiple ideas that create value for others
- I can imagine a desirable future
- I can understand and appreciate the value of ideas
- I can recognise the impact of my choices and behaviours, both within the community and the environment
- I can trust my own ability to generate value for others
- I want to follow my passion and create value for others
- I can find and use resources responsibly
- I can draw up the budget for a simple activity
- I can communicate my ideas clearly and with enthusiasm
- I am willing to have a go at solving problems that affect my community
- I can define the goals for a simple value-creating activity
- I am not afraid of making mistakes while trying new things
- I can work in a team to create value
- I can recognise what I have learnt through taking part in value-creating activities

Statements relating to skills and attitudes, adapted from the GreenComp framework

VALUING SUSTAINABILITY

- I am confident that I can explain the values, principles and objective of sustainability
- I can explain the differing viewpoints of sustainability
- I aim to act in line with the values and principles for sustainability

SUPPORTING FAIRNESS

- I can apply equity and justice for current and future generations as criteria for environmental preservation and the use of natural resources
- I am committed to respecting the interests of future generations.

PROMOTING NATURE

- I can assess my own impact on nature
- I consider the protection of nature an essential task for every individual
- I care about a harmonious relationship existing between nature and humans

SYSTEMS THINKING

I feel able to describe sustainability as a holistic concept that includes environmental, economic, social and cultural issues

I am concerned about the short- and long-term impacts of personal actions on others and the planet

CRITICAL THINKING

I can analyse and assess arguments, ideas, actions and scenarios to determine whether they are in line with evidence and values in terms of sustainability

I trust science even when some of the knowledge required to fully understand scientific claims is lacking

PROBLEM FRAMING

I can frame current and potential sustainability challenges based on their complexity and the main people involved

I actively listen and empathise when collaborating with others to frame sustainability challenges

FUTURES LITERACY

I can envision alternative futures for sustainability that are grounded in science, creativity and values for sustainability

I am aware that the projected consequences on my self and my community may influence preferences for certain scenarios above others

ADAPTABILITY

I can take into account local circumstances when dealing with sustainability issues and opportunities

I am willing to discontinue unsustainable practices and try alternative solutions

EXPLORATORY THINKING

I can synthesise sustainability-related information and data from different perspectives

I am committed to considering sustainability challenges and opportunities from different angles

12 Appendix: pilot survey

Baseline survey – Youth Climate Communication workshop

This survey will be used to understand your baseline knowledge and experiences of climate change communication and will be used for research purposes. Your participation is voluntary. Completing this questionnaire indicates that you give consent for this data to be used in a research study exploring engineering public engagement. Once submitted, your data cannot be withdrawn, as it is anonymous. All data will be treated in compliance with the General Data Protection Regulations.

1. Please let us know which community group, school or university you attend?

2. To link the surveys, we need you to provide a unique identifier. As such, what is your favourite plant or flower?

3. Why did you want to take part in this training?

- Meet others who care about climate action
- Learn how to share my message
- Encourage me to take climate action
- Enable me to help others take climate action
- Other please state

4. What words describe how you feel about the climate and ecological crisis (circle all that apply or add your own):

Concerned Confused Hopeful Scared Calm Empowered to take action
Mournful Guilty Angry Powerless Optimistic Indifferent

5. Have you communicated your message about the climate and ecological crisis to the public before (e.g., through blogs, social media, protest, events, etc.)?

- Yes
- No (go straight to Q 5)

Not sure

6. (If yes) What forms of communication have you tried:

- Blogging
- Social media campaigns
- Public events (e.g., a stall at a festival)
- Filming/TV
- Protest
- A petition
- Other.....

7. Did you feel your communication was successful? (explain your answer)

.....

.....

.....

8. How confident do you feel about the following (draw an X in the relevant cell):

	1 (not very confident)	2	3	4	5 (very confident)
Defining your key message					
Speaking with diverse audiences about your message					
Creative ways to engage your audiences					
Making your engagements interactive					
Filmmaking					

9. About you

Please let us know your gender:.....

Please let us know your age:.....

Thank you for taking the time to complete this questionnaire.

End of session survey – Youth Climate Communication workshop

This survey will be used to understand your baseline knowledge and experiences of climate change communication and will be used for research purposes. Your participation is voluntary. Completing this questionnaire indicates that you give consent for this data to be used in a research study exploring engineering public engagement. Once submitted, your data cannot be withdrawn, as it is anonymous. All data will be treated in compliance with the General Data Protection Regulations.

1. What is your favourite plant or flower?

2. Did the workshop meet your expectations of the day (e.g., learn, meet, take climate action, help other)? Please explain your answer.

3. Now, what words describe how you feel about the climate and ecological crisis (circle all that apply- or add your own):

Concerned Confused Hopeful Scared Calm Empowered to take action
 Mournful Guilty Angry Powerless Optimistic Indifferent

4. Now, how confident do you feel about the following (draw an X in the relevant cell):

	1 (not very confident)	2	3	4	5 (much more confident)
Defining your key message					
Speaking with diverse audiences about your message					
Creative ways to engage your audiences					
Making your engagements interactive					
Filmmaking					

5. How would you rate the following activities (draw a X in the relevant cell):

	1 (poor)	2	3	4	5 (brilliant)
Centring and grounding practice					
Code of conduct					
Start with Why!					
Audience segmentation					
Build an eco house					
Physical engagements					
Lunchtime tour					
Filmmaking on a budget					
Closing session					

6. What activities (from the list above) would you keep, and why?

7. What activities would you change, and why?

8. Was there anything missing that you would like to be included in future youth climate communications trainings? E.g., what other communication skills would you like to learn?

8. Is there anything else you would like to add?

We would like to invite students to be part of an Advisory Committee, to shape the direction of future workshops and training materials that we develop from this event. There may even be opportunity for you to share your skills and experiences with your peers. If you would be interested in this, please leave your email below.

Thank you for taking the time to complete this questionnaire. Completing this questionnaire indicates that you give consent for this data to be used in a research study exploring digital engineering public engagement. Once submitted, your data cannot be withdrawn.

13 Appendix: pre- and post-engagement survey

Pre-engagement

This survey is looking to establish a baseline in understanding about young people's views on climate change as well as an understanding about their relevant entrepreneurial skills and competencies. You will also be asked for your views and to assess your skills and competencies after you have taken part in the training.

Completing this questionnaire indicates that you give consent for this data to be used for research purposes. Once submitted, your data cannot be withdrawn, as it is anonymous. Data will be stored securely at the University in accordance with the General Data Protection Regulation Act 2018. Full details on our Privacy Policy are online.

To link your answers from this survey to those of the final survey, we will need you to provide a unique identifier. Therefore, please state the name of your school and your favourite plant or tree (e.g., Crofton Oak).

For any enquiries, please contact sophie.laggan@uwe.ac.uk

1. Which statements do you identify with (tick all that apply)

In response to hearing another young person say “climate change is affecting our generation”...

- Older generations have a responsibility to do something about it, e.g., politicians, scientists
- I trust that older generations are able and willing to address climate change
- If every generation works together, we can make a real difference on climate change and protect our shared home
- My generation has a responsibility to do something about climate change
- I intend to play my part in making the world a better place
- I do not feel like young people can make a difference to how the future turns out
- I do not agree that climate change is affecting my generation
- I would like to do something about climate change, but I don't know how
- I am concerned society is not acting fast enough to reduce our impact on the planet
- I believe that a better future is possible
- We have borrowed this land from nature, it is not for us to own and destroy it
- Climate change is intertwined with systems of oppression, including racism, colonialism and hierarchy - we need to address these problems collectively

2. (If they think cc is affecting them) In what way is climate change affecting your generation:

1. What words describe how you feel about the climate and ecological crisis (tick all that apply):

Concerned Confused Hopeful Scared Calm

Empowered to take action

Mournful Guilty Angry Powerless Optimistic Indifferent

Other...

2. Do you take any action to reduce our individual or collective impact on the climate (tick any that apply):

- I take personal action (e.g., I conserve water when brushing my teeth, switch of lights when not in the room, walk/cycle where possible, and/or recycle)
- I am part of a youth group that is taking action to address local issues
- I have organised awareness raising events about issues that matter to me
- I encourage others to make a change
- I have used art or storytelling to convey issues to an audience
- I have written to or spoken with my local MP or councillor
- I am vocal on social media
- I protest
- I boycott certain companies
- None
- Other....

4. (Only appear if they select non-individual actions) Relating to these actions, did you:

- Consider creating social, environmental and economic value when developing this activity
- I considered just one or two of these values (social, economic, environmental)
- Get creative with limited resources and use them responsibly
- Work in a team
- Set goals
- Draw up a budget
- Communicate your ideas clearly
- Persevere even if things do not go to plan
- Reflect on learnings

5. How would you rate your ability to perform the following skills and competencies:

- To trust my own ability to generate value for others
- To define the goals for a simple activity that adds value to people's lives
- To find opportunities to generate value for people, nature and the economy
- To imagine a desirable future for the planet
- To understand and appreciate the value of ideas for society, the environment, and the economy
- To be willing to have a go at solving problems that affect my community (a community can be a community of interest (e.g., football), demographic (e.g., Somalian) or place-based (e.g., your street))
- To recognise the impact of my choices and behaviours, both within the community and the environment
- To follow your passion and create value for others
- To find and use resources responsibly and creatively
- To draw up a budget for a simple activity

- To communicate my ideas clearly and with enthusiasm
- To recognise what I have learnt through taking part in value-creating activities
- To make mistakes while trying new things
- To work in a team to create value

6. Do you feel confident in your ability to do the following:

- I can explain how protecting nature and the use of natural resources relates to fairness for current and future generations
- I can take into account local circumstances when dealing with sustainability issues and opportunities
- I can understand diverse perspectives on sustainability and how best to address climate change

7. To what extent do you agree with the following statements:

- I aim to act in a way that promotes fairness and considers the impacts of my decisions on nature, people and the economy
- I am committed to respecting the interests of future generations.
- I consider the protection of nature an essential task for every individual
- I care about a harmonious relationship existing between nature and humans
- I am concerned about the short- and long-term impacts of personal actions on others and the planet
- I trust science even when the knowledge behind it may be incomplete or still emerging
- I actively listen and empathise when collaborating with others to frame sustainability challenges
- I am willing to discontinue unsustainable practices and try alternative solutions

8. What is your ethnicity:

Self-identify –

9. What is your gender:

Self-identify –

10. What is your age:

>16

16-18

19-21

22-24

25+

11. What subject (or module) do you enjoy the most at school/college/university:

12. Do you have anything else to add:

Post-engagement

This survey will ask you about your experiences of using the toolkit and/or taking part in the training. Completing this questionnaire indicates that you give consent for this data to be used for research purposes. Once submitted, your data cannot be withdrawn, as it is anonymous. Data will be stored securely at the University in accordance with the General Data Protection Regulation Act 2018. Full details on our Privacy Policy are online.

To link your answers from this survey to those of the final survey, we will need you to provide a unique identifier. Therefore, please state the name of your school and your favourite plant or tree (e.g., Crofton Oak).

1. What aspect of the project did you take part in (tick all that apply):

- The pilot phase (co-development)
- In-person training sessions
- E-learning materials (on YouTube)
- Using the toolkit

2. Overall, how would you rate the following?

- The pilot phase (co-development)
- In-person training sessions
- E-learning materials (on YouTube)
- Using the toolkit

3. How would you rate the training according to these aspects:

- Enjoyability
- Creativity
- Inspiration
- Made me feel like I could make a difference
- Gave me the tools I need to make a difference

4. Which statement do you identify with (tick all that apply)

5. In response to hearing a another young person say Climate change is affecting my generation...

- Older generations have a responsibility to do something about it, e.g., politicians, scientists

- If every generation works together, we can make a real difference on climate change and protect our shared home
- My generation has a responsibility to do something about climate change
- I intend to play my part in making the world a better place
- I do not feel like young people can make a difference to how the future turns out
- I do not agree that climate change is affecting my generation
- I would like to do something about climate change, but I don't know how
- I am concerned society is not acting fast enough to reduce our impact on the planet
- I believe that a better future is possible
- We have borrowed this land from nature, it is not for us to own and destroy it
- Climate change is intertwined with systems of oppression, including racism, colonialism and hierarchy - we need to address these problems collectively

6. (If they think cc is affecting them) **In what way is climate change affecting your generation:**

7. **What words describe how you feel about the climate and ecological crisis (tick all that apply):**

Concerned Confused Hopeful Scared Calm

Empowered to take action

Mournful Guilty Angry Powerless Optimistic Indifferent

8. **How would you rate your ability to perform the following skills now:**

- To trust my own ability to generate value for others
- To define the goals for a simple value-creating activity
- To find opportunities to generate value for people, nature and the economy
- To imagine a desirable future for the planet
- To understand and appreciate the value of ideas for society, the environment, and the economy
- To be willing to have a go at solving problems that affect my community
- To recognise the impact of my choices and behaviours, both within the community/ school/ work and the environment
- To follow my passion and create value for others
- To find and use resources responsibly and creatively
- To draw up a budget for a simple activity
- To communicate my ideas clearly and with enthusiasm
- To recognise what I have learnt through taking part in value-creating activities
- To make mistakes while trying new things
- To work in a team to create value

9. **Do you feel confident in your ability to perform the following:**

- I can explain how protecting nature and the use of natural resources relates to fairness for current and future generations
- I can take into account local circumstances when dealing with sustainability issues and opportunities

- I can integrate sustainability-related information and data from different perspectives

10. To what extent do you agree with the following statements:

- I aim to act in line with the values and principles for sustainability
- I am committed to respecting the interests of future generations.
- I consider the protection of nature an essential task for every individual
- I care about a harmonious relationship existing between nature and humans
- I am concerned about the short- and long-term impacts of personal actions on others and the planet
- I trust science even when the knowledge behind it may be incomplete or still emerging
- I actively listen and empathise when collaborating with others to frame sustainability challenges
- I am willing to stop my unsustainable practices and try alternative solutions

12. Before this training did you talk about sustainability with any of the following people:

- Your family
- Your friends
- Your teachers
- Other....

13. Do you plan on talking with them about sustainability now? (explain your answer)

Yes

No

Not sure

14. Do you have anything else to add:

14 Appendix: project costs

Budget	Details	
Lauren x20 bundles	£2,220	
Coaches	£173	£9.90x9.5 + £9.9x8
Bundles for Laura, Sara, Rozzy, Deborah and Sophie	£4,110	
	£6,503	
50 copies of climate comms toolkit	£216	
Transport (taxis)	£54	Coach & Sophie to & from NBP16C x2 (£25.76 + 28.17)
Transport (milage)	£72	
Certificates	£6	
250 copies of final toolkit	£560.37	
500 copies of toolkit	£2002.42	
Veg box e-vouchers to thank pilot participants	£234	(19.50x12)
Pull-up banner	£180	
Journal transfer for students time on outreach activities	£139	(£9.5x7) x2
	£9,966	