



Addressing

CLIMATE EMOTIONS

In Higher Education

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1. Executive summary

The climate is rapidly changing, and this inevitably comes with negative emotions such as despair, hopelessness, anger or anxiety. These feelings are summarised with the term climate distress or climate emotions. Climate distress is especially prevalent among young people and students. Students who gain more in-depth knowledge about climate change are at a higher risk of experiencing climate distress. Feeling concerned about the climate crisis may lead to pro-environmental behaviour and engagement with climate activism however, experiencing too much distress can lead to serious mental health problems.

Together with the Climate Majority Project, a UK based climate organization we worked on a campaign called 'Climate Courage', in which the aim is to address climate emotions in education. The underlying questions that we got from them were related to 'creating spaces' that helps students to turn difficult emotions into climate action. We also looked in what challenges are there that prevent these spaces from existing. The driving force behind creating these spaces is the CMP's Theory of Change in which the importance of providing people with inner resources to face the facts of climate change is vital.

Learning institutions such as universities, are mostly focussed on teaching the facts about climate change and less, or not at all, on the emotions that arise from learning about these facts. Teachers indicated, based on our interviews, that they do not know how to talk about climate emotions or feel like they do not have enough time within the current curriculum. Some think they will depress their students or that discussing climate emotions may indicate a political stance.

Therefore, we interviewed teachers, researchers and other experts to find out why it is difficult to include emotions in education and what teachers might need. Additionally, to get an overview of what methods of including emotions are already there we delved into the literature. Finally, we surveyed students to see if there is a desire for discussions about emotions in education and tested two different types of workshops on students to see what works and what does not.

Outcomes

As mentioned above, we found that teachers experienced different levels of resistance regarding discussing climate emotions with students. Some have indicated that they do not know how to start the conversation and would like to gain knowledge on what type of skills they would need to do this and what approaches work best. Additionally, we found that it is difficult to include emotions on a program or curriculum level due to time constraints and the belief some people have within academia about emotions not having a place in education. Considering all of this, rather than trying to convince the curriculum designers, making implementations on an individual teacher level might meet the least resistance. This approach necessarily dictates starting from people who are already interested in creating a space for climate emotions within education.

When looking at the approaches that are already there, we found that there are many different types of approaches that focus on different age groups and take different lengths of time. Therefore, it was difficult to thoroughly compare approaches and decide which is the best. We have found some existing initiatives, such as Force of Nature (Force of Nature, n.d.) and Transition Makers Toolbox (Transition Makers Toolbox, 2024), that offer toolkits to support teachers. These initiatives often focus on student engagement and sparking discussions. Due to the difficulty of comparing different initiatives, we decided to evaluate them based on what we found important within each approach. To make it as reproducible as possible, the general criteria we looked out for was the detailed explanation of the activities.

Student experience

We found that most students are interested in the topic. We performed three workshops and noted what worked and what did not work. Based on our own experiences and recommendations from experts, we found that it was most important to establish trust during a workshop. This can be done by clearly stating that students are not obligated to share any sensitive information and that sharing personal experiences helps. We have found that students are most comfortable with discussing their climate emotions if they are in small groups with people that they are familiar with. Additionally, the discussions become much more engaging if the students are used to discussing personal matters with each other.

Website

To make sure the information that was gathered during this project reaches interested people, we created a website. On this website we provide information for teachers about what skills they need, what kind of topics to discuss, how to approach a discussion about emotions and inspirational resources. With the website, we hope to create a baseline of activities for teachers, universities and other educational institutions that do not require a lot of time and informs teachers about under what circumstances what kind of activities work well. We hope that once teachers have some activities to rely on, they can further adjust them and come up with new activities depending on the need of the students, context and setting.

Conclusions

With this project our overarching goal is to create a space for students to discuss their climate emotions and learn more about how they can use their climate emotions to feel more empowered to take meaningful action. Our project acts as a baseline for creating more spaces within education to approach climate emotions in a meaningful way. The long-term vision of this project is to critically assess the existing structures within education and overtime change these existing structures

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2.1. The Collective Futures team

The collective futures team consists of three students currently enrolled in the Collective Futures minor.

Carmen Heemsbergen

Carmen graduated from the interdisciplinary Bachelor Future Planet Studies, with the Future Earth track, at the University of Amsterdam. She then went on to study for the Master Biological Sciences with a specialisation in Ecology and Evolution at the University of Amsterdam.



Ilke Asal

Ilke completed Psychology Bachelors at the University of Amsterdam. She specialized in Brain and Cognition and Methods. Currently she is a second year Brain and Cognitive Sciences research master student at the University of Amsterdam.

Vonne Smit

Vonne has a Bachelor's degree in Interdisciplinary Social Science at the University of Amsterdam with a minor in Evolutionary Psychobiology. At the moment she is a first year Master student in the direction Biological Sciences with the track Evolution of Behavior and Mind at the University of Amsterdam.





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2.2. UvA supervisors

Our project was guided by two supervisors connected to the University of Amsterdam. Colin Hickey fulfilled the role of our academic supervisor and Jelger Kroese fulfilled the role of our daily supervisor.



Colin Hickey

Colin is an assistant professor in ecological and environmental ethics at the Institute for Biodiversity and Ecosystem Dynamics at the University of Amsterdam. He provided guidance on the scientific background and methodology of the project.

Jelger Kroese

Jelger was our daily supervisor. He is co-leader of the minor Collective Futures as well as a social designer, facilitator and applied researcher. He works on guiding teams working towards societal transitions.





2.3. The partner- Climate Majority Project

This project was conducted in close collaboration with the Climate Majority Project. Climate Majority Project (CMP) is a UK-based organization supporting the climate-concerned majority of the citizens to act in meaningful ways to the climate emergency (Climate Majority Project, 2023). The CMP has recognized that there is currently a growing majority that realizes the climate problem and wants to help but does not know how. However, a mass public mobilization is required to tackle the climate crisis. The Climate Majority Project started out in the UK but encourages citizens of all levels of society to recognize their own power and to take meaningful climate action together. The majority of people can make the biggest difference.

Together with them we work on the campaign 'Climate Courage', focussed on addressing climate emotions in education. This campaign is focussed on highlighting the need for resources and supportive spaces to help young people cope with climate emotions. CMP emphasis that there is a need for teachers to tell the truth about the climate crisis while acknowledging the impact this has on students. Taboos around climate distress should be addressed to create a more complete educational structure around the climate crisis.

To empower citizens to take action, the CMP has created its own version of the theory of change. The CMP's Theory of Change consists of four interwoven strands that provide principles and processes for change, but not a complete strategy or blueprint for change. CMP aims to mobilize a broad, concerned majority of people. The theory of change focuses on creating more awareness and knowledge about climate change. Secondly, practical tools and resources are provided for individuals to take meaningful action. To promote collective climate action, strong communities should be built. Lastly, the Climate Majority Project works together with other organizations to increase impact. The strands by themselves are not considered sufficient, but together they may make big changes. By raising awareness, empowering individuals, building communities and collaboration, CMP aims to make systematic changes to create sustainability and resilience to climate change.



The first strand “Narrative Shift” is about truthfulness in climate discussions that embraces the depth of challenges and responses to them with full honesty. However, embracing this challenge with full honesty requires the inner resources to cope with difficult emotions and experience arising from the complexity of the challenge. The second strand “Communities of Awareness and Resilience” focusses on the importance of the development of these inner resources. The development of inner resources will help the climate majority of people to transition from despair to determination. When we have the required inner resources to have sense of agency and empowerment, we can focus on taking actions. The third strand “Tangible Actions” is about creating ways for people to take meaningful and coordinated climate action where they have the most agency, e.g. workplace, local communities or extended families. Well-coordinated, mass activation of the citizens is expected to build a momentum for policy change at the highest scale. Well-coordinated action by the majority of the climate concerned citizens requires a shared understanding of the problem and needed actions to fight against the problem. The fourth strand “Building Shared Understanding” is about creating this shared understanding among the concerned individuals and making them feel they are part of a much broader movement while helping them find their work to do in this broader effort (Climate Majority Project, 2023).

Within our project we aim to focus mostly on the “Communities of Awareness and Resilience” strand. We think that our project may help students feel like the difficult truth becomes more bearable, help students make more sense of the climate problem and create a sense of collective agency, see highlighted circles in Figure 1. The broader view of our project relates to the broader vision of CMP and their theory of change, to create more climate awareness and providing tools for emotional resilience.

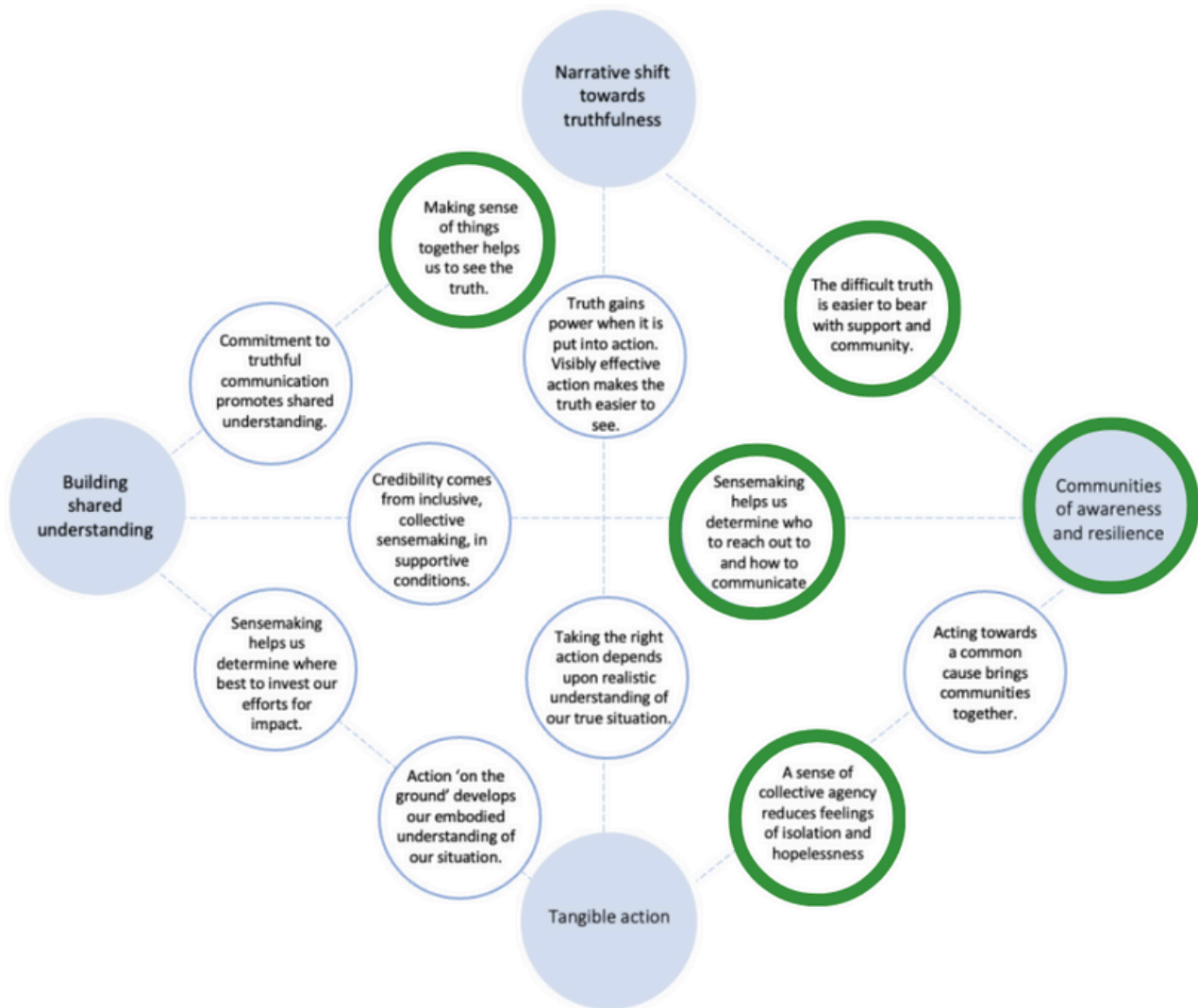


Figure 1: the CMPs theory of change with the four strand in the filled blue circles. The green borders around the circles indicate focus areas of our project.

Within the CMP our main contact person was Jadzia Tedeschi. Additionally, we were in contact with Liam Kavanagh and Rupert Read, the directors of CMP.



Jadzia Tedeschi

Jadzia is a Bachelor Psychology student from Italy. Within CMP she takes care of outreach and performs administrative tasks.

Rupert Read

Rupert is an Emeritus Professor of Philosophy at the University of East Anglia in Norwich, UK. He is the co-director of the CMP. He joined some of our online meetings with Jadzia to learn about the updates of the project. During the meetings he joined, he provided us with new insights and gave feedback on our progress.



Liam Kavanagh

Liam is a Cognitive and Social Scientist, determined to use his knowledge about human motivation to help the creation of more effective responses to climate change. He is the co-director of the CMP. He, too, joined some of our meetings with Jadzia to help us with our project.

3. Background

In this section the theoretical background of this project is provided stated existing theories and strategies of climate change, climate distress and climate emotions.

3.1. Climate Change

- Human actions are causing the rapid change of the climate, with the 1.5°C warming threshold expected by 2033 to not be made (IPCC, 2023; Copernicus, 2024; Jewell & Cherp, 2020).
- Effects of climate change are expected to increase, affecting previously less impacted regions like Europe (IPCC, 2023).
- Education is a key predictor of climate awareness (Lee et al., 2015). High awareness can lead to climate anxiety (Ediz & Yanik, 2023).

The climate is rapidly changing as a result of human actions (Lynas, Houlton & Perry, 2021; IPCC, 2023). It is currently estimated that we will reach the 1.5 °C warming threshold in 2033 (Copernicus, 2024; Figure 2). Research has found that interventions, such as renewables, nuclear and pledges to phase-out fossil fuels, will not happen fast enough to still prevent the 1.5 °C warming (Jewell & Cherp, 2020). IPCC AR6 concluded that it is more likely than not that the global warming will exceed 1.5 °C even under the lowest GHG emission scenario (IPCC, 2023). The continued emissions are expected to further influence the global water cycle, global sea level rise, heatwaves, droughts, tropical storms, fires and the weather (IPCC, 2023; Dupuy et al., 2020). Therefore, effects of climate change are expected to increase and will also start affecting countries in Europe that have previously been relatively unaffected.

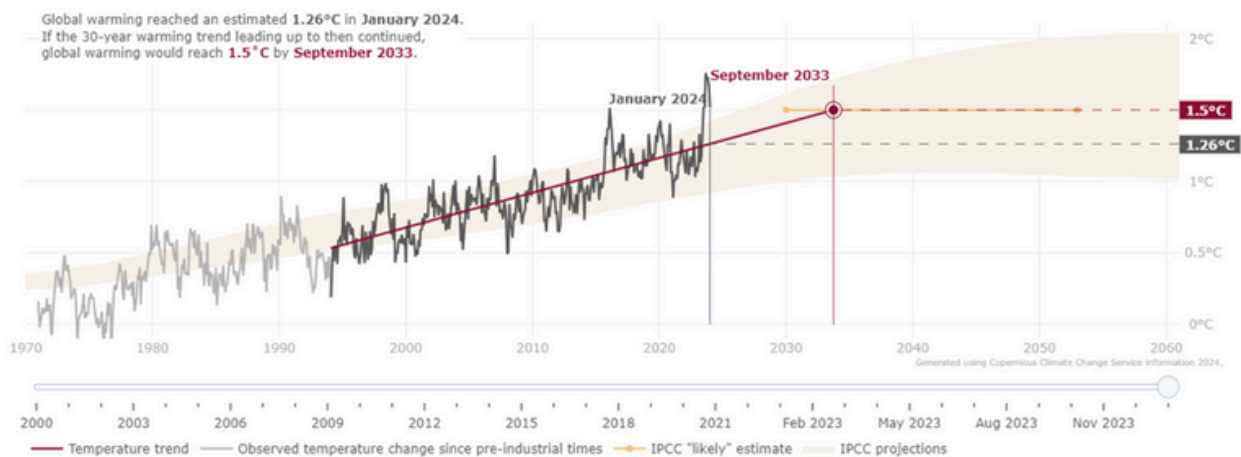


Figure 2: Temperature change since pre-industrial times including estimation of the year the global warming of 1.5 °C will be reached (Copernicus, 2024).

The severity of the consequences of climate change will be determined by our own behavior and the changes we decide to make. To assess what would happen under different scenarios, the Intergovernmental Panel for Climate Change (IPCC) sixth Assessment Report (AR6) introduced the Shared Socio-Economic Pathways (SSPs; IPCC, 2023). These SSPs predict future emissions, climate change and the related impacts, see Figure 3. The scenarios SSP3-7.0 and SSP5-8.5 represent high and very high greenhouse gas (GHG) emissions in which the current CO₂ emissions will roughly be doubled in respectively 2100 and 2050. For scenario SSP2-4.5, the intermediate scenario, the GHG emissions will remain roughly the same as the current emissions. The lowest scenarios, SSP1-1.9 (very low) and SSP1-2.6 (low), have CO₂ emissions that will reach net zero in respectively 2050 and 2070 and may reach negative emissions.

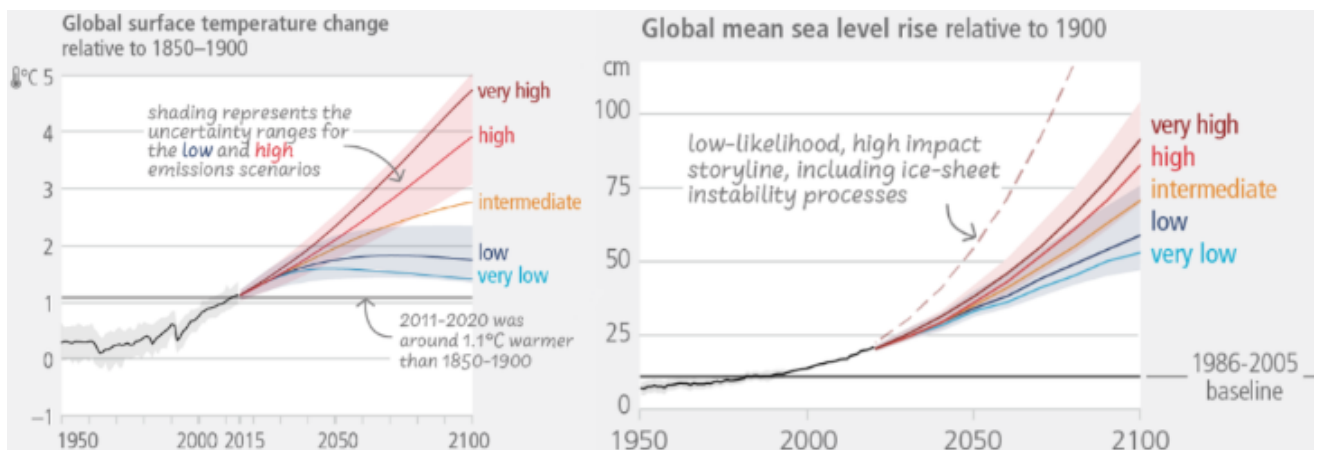


Figure 3: predicted future temperature and sea level changes under the five SSP scenarios (IPCC, 2023).

It is more likely than not that the global warming will exceed 1.5 °C even under the lowest GHG emission scenario. The continued emissions are expected to further influence the global water cycle, global sea level rise, heatwaves, droughts, tropical storms, fires and the weather (IPCC, 2023).

Learning about these consequences can be emotionally challenging. A high awareness and knowledge of climate change may lead to an increased risk of experiencing distressing climate emotions, such as anxiety or hopelessness (Ediz & Yanik, 2023). Not everyone is equally aware of climate change. For example, people in developed countries are generally more aware of climate change than those in developing countries. This awareness of climate change was found to be mostly predicted by education (Lee et al., 2015). This is why this project is highly relevant in the context of climate education and students that deal with climate distress.

3.2. What is Climate Distress?

- Climate change affects both the environment and the emotional well-being, causing eco-anxiety, guilt, and grief, especially among young people (Morganstein & Ursano. 2020, Brophy, 2022; Aruta, 2022).
- In the Netherlands 4 out of 10 people are very concerned about climate change.
- Climate emotions can motivate action, however inadequate coping strategies with these emotions may lead to denial and inaction.
- For mental health of people, and effective climate actions, proper coping strategies are essential.

Climate change does not only affect the climate and nature but also humans. Worrying about climate change can have an impact on the emotional well-being of people (Morganstein & Ursano, 2020). Research shows that young people and adolescents are likely to experience increased levels of eco-anxiety, eco-guilt and eco-grief (Brophy, 2022; Aruta, 2022). In the Netherlands, 7 out of 10 people are found to be concerned about climate change and 4 out of 10 are very concerned about it (Benda & Früchtel, 2022).

In the original project description, the project was focused on climate anxiety. However, we, together with the partner, have decided that climate anxiety alone would not encompass the entire scope of the problem. Therefore, we will use the term climate distress, but this also includes eco-distress. This encompasses worry, denial, anger, grief, anxiety, numbness, depression and despair related to ecological and climate change, see Figure 4. The campaign from CMP changed its name recently to 'Climate Courage', they think that this framing will be viewed as more positive. In this report we will mostly use the terms 'climate distress' or 'climate emotions' to refer to the above-mentioned emotions.



Figure 4: examples of climate related emotions (Coffey et al., 2021).

People can experience climate distress after experiencing the effects of climate change, but also by witnessing the (lack of) efforts that are being taken to combat climate change. For example, participants in a study from Weij (2022) said the following:



“I feel anxious and hopeless since things are happening too slowly”

and

“I feel really sad, sometimes I even cry when I think about it. I think about what is happening, and I feel powerless.”



These feelings of powerlessness and frustration were also found in other studies (i.e. Benda & Früchtl, 2022). In a study from van Valkengoed (2023), one participant said:



“I often think the whole world is going to hell, and we are doing nothing to stop it”.



Climate change and the experience of extreme weather, other than being associated with anxiety, are also associated with mental health disorders such as PTSD and depression (Morganstein & Ursano, 2020). While emotions, such as anxiety, can help motivate humans to take climate action for example, it is important to note that the lack of an adequate emotional response may lead to unhealthy coping strategies such as repression or denial which may lead to inaction.

There is an increasing trend of people who stop believing that their actions make a difference in combatting climate change. A study from Avinash (2023) found that 58% of survey participants believed that their actions made a difference in 2020, whereas this percentage declined to 53% in 2023. A participant in a study from Benda and Früchtl (2022) exemplified this point, he said:



“We are all going to die from climate change sooner or later, so what's the point of worrying about it anymore”



This decline shows the urgency required in helping people effectively deal with their climate emotions to create a feeling of agency and empowerment.

Additionally, if people lack the (right) coping strategies, the intensity of the experienced emotions can be detrimental to their mental health. In fact, the distress created by climate change might become chronic. In cases of changes in the environment people can experience distressing emotions. For example, the term 'solastalgia' describes the chronic distress people experience in relation to negative environmental changes (Albrecht, 2005).

3.3. Climate Distress in Education

- Students studying climate-related subjects are at a higher risk to experience distressing emotions (Ramírez-López et al., 2023).
- Climate education prioritizes facts, neglecting emotional resilience (Filho et al., 2021).
- Many teachers feel not trained enough to address students' climate emotions (Global Action Plan, n.d.).
- Not properly addressing the climate emotions of the students can hinder good climate education.

It is important to focus on the places where information about climate change is given, such as the news or classrooms. Students doing their studies on climate-related subjects receive new in-depth knowledge about the climate and are more vulnerable to distressing emotions. In a study with Mexican students, it was found that students who had more climate change knowledge, had courses about climate change or spent more time reading news experienced more climate anxiety than those who did not (Ramírez-López et al., 2023). Another study looked at the motivation behind Dutch young adults' participation in climate activism. Most people that participated in climate activism were either studying or finished studying a climate-related subject. Moreover, when they were asked about their feelings about climate change, they expressed a lot of negative emotions, among which anxiety was the most common one (Weij, 2022).

However, regardless of the distress experienced by students the standard way of teaching about climate change mainly focuses on sharing the facts. A study by Filho et al. (2021) showed this point by investigating topics addressed in climate change education. They have shown that although universities worldwide are expanding their climate change education, accompanying students with inner resilience and acknowledging the mentally distressing part of climate change is not yet prioritized in education. Additionally, teachers are not well-equipped to include climate emotions in classes. Research conducted by Global Action Plan showed that half of the teachers do not feel trained enough to help students with their negative climate emotions (Global Action Plan, n.d.).

This was exemplified by the statement of Luke Wynne, Head of Youth and Schools at Global Action in which he said: "Teachers are worried and unsure of how to respond to climate anxiety." (Global Action Plan, n.d.). One teacher expressed their struggle with the statement "I could feel the students' frustration and hopelessness, but I struggled to find a way to channel their feelings in anything constructive without sounding naive (Verlie, Clark, Jarrett, & Supriyono, 2021).

Clearly, there is an emerging problem of climate distress among students, especially the ones gaining in-depth knowledge about the climate crisis. Teachers struggle in helping students with their negative emotions. This can lead to both teachers/institutions avoiding the emotional aspects of climate change during education, or they may choose to avoid properly informing their students about the urgency and the complexity of the problem. In both cases, not properly addressing climate emotions can get in the way of good climate education.

3.4. What are Emotions and Coping Mechanisms?

- Paul Ekman initially identified six basic emotions, later this list is expanded to include other emotions like guilt and anxiety, indicating the lack of consensus about what is and is not an emotion.
- People develop different coping strategies to deal with their emotions.
- Coping strategies for negative emotions include emotion-focused coping, which alleviates emotions without changing the situation, and problem-focused coping, which involves taking actions to change the situation (Magai & McFadden, 1996).

The concept of emotions is a widely studied and a rather controversial topic. In 1972, Paul Ekman published a list of basic emotions (anger, disgust, happiness, sadness, fear, and surprise) that were claimed to be experienced universally. However, later, Paul Ekman and other researchers kept expanding the basic emotions lists by including guilt, depression, anxiety, anger, etc. (Handel, n.d.; Lazarus & Lazarus, 1994).

The definition of emotions keeps changing, which highlights the lack of consensus about what is and is not an (basic) emotion. For example, although some people consider anxiety as an emotion (American Psychological Association, n.d.) others argue that anxiety is a state of being in which primary emotions lie at the root (Smith, n.d.). Research that supports the latter argument has found that anxiety is comprised of three basic emotions: fear, anger and sadness (Rammohan et al., 2020).

When we think about emotions, it is important to distinguish emotions from responses to those emotions. People develop different responses, also known as coping strategies, to deal with their negative emotions. Two main coping strategies have been identified, namely, emotion-focused coping and problem-focused coping (Magai & McFadden, 1996).

Emotion-focused coping focusses on alleviating the emotions and not changing the situation that has caused those negative emotions. There are two different approaches in this: changing the situation appraisal and emotional expression (Magai & McFadden, 1996). Problem-focused coping strategies are based on trying to change the situation by taking necessary actions (Magai & McFadden, 1996).

3.5. Why are Emotions Useful?

- Emotions have evolved to help us survive by quickly assessing situations as harmful, or beneficial (Zhu & Thegard, 2002).
- The Appraisal Theory of Emotion explains this process with two components: Primary Appraisal, which describes evaluation of a situations' relevance to our wellbeing, and Secondary Appraisal, describes the assessment of our ability to cope with it.
- These quick assessments prepare us for adaptive actions, with different emotions leading to different behaviours.

Emotions have an evolutionary purpose in our lives, they have emerged throughout evolution to help us survive by providing appraisals about the situation we are in (Zhu & Thagard, 2002). Emotions are a fast way of sending feedback about whether the situation we are in is harmful, threatening or beneficial.

The Appraisal Theory of Emotion was developed in order to conceptualize these mental assessments (Zhu & Thagard, 2002). The theory consists of two main components, namely, the Primary Appraisal and the Secondary Appraisal. Primary Appraisal is about describing the assessment of the relevance of the situation to someone's wellbeing and secondary appraisal is about describing the assessment of the possibility of coping with the situation. These assessments provide fast feedback and prepare the person for adaptive actions. Different emotions might lead to different actions. For example, anger usually leads to aggression such as starting a heated argument, whereas fear usually leads to escape behaviours.

The fact that emotions can have an influence on the type of actions we take, indicates that emotions influence our decision making. When we connect with our emotions, and listen to them, we make faster choices simply because we eliminate most of the alternatives based on how we feel about them. Actions caused by strong negative emotions are much less likely to be taken than actions caused by positive emotions. Additionally, when we tune into our emotions, we recognize what is significant and meaningful for us and which actions make us feel energized, happy and excited (Zhu & Thagard, 2002).

Considering the importance of emotions in helping us make appraisals and realise what is important and meaningful for us, we can see the importance of acknowledging our climate emotions. By being worried, sad or scared about the climate crisis we realise that some things need to be changed and we choose actions that are meaningful for us to change things. Therefore, we can conclude that emotions are at the heart of any individual and collective action when discussing the climate crisis (Davidson & Kecinski, 2022).

3.6. Climate Actions

- Collective climate actions can have a bigger impact than individual actions
- Being part of the collective increases climate action

Emotions are an important driver of collective climate action (Fritsche & Masson, 2021). Collective climate action can be defined as the combined efforts of individuals acting as representatives of the whole group and to improve the conditions of this group (Tosun & Schoenefeld, 2016). Both individual and collective climate action can be used to by the individual to get a better grip on the climate crisis, but collective action is generally considered more meaningful. The behaviour of the individual is not what is causing the climate crisis, it is the collective of people that is harming the planet (Tosun & Schoenefeld, 2016). Climate change is a problem caused by the collective and can be best solved by the collective acting together. In other words, both the problem and the solution are seen on the same level (Tosun & Schoenefeld, 2016). Therefore, collective climate action is the only way to stop climate change from further developing (Fritsche & Masson, 2021).

People that only consider themselves as individual actors, and not part of the collective, are more likely to experience helplessness often leading to inaction (Fritsche & Masson, 2021). When addressing climate change within in classroom it is important to mention the meaning of collective climate action in relation to the individual.

3.7. Research Questions

In this project, we have looked at three main parts: we focused on student needs, teacher needs and the implementation into the curriculum. For this we created three main research questions:

Students: An important part of this research was to find out if students would be open to discuss climate emotions in the classroom and if so, in what kind of format so that we could answer the following research question: *Do students from the University of Amsterdam want to include climate emotions in their educational programs?*

Teachers: Teachers play an important role in education and therefore we have looked into kind of skills teachers need, what topics to address and other topics to answer the research question: *What do university teachers need to effectively address climate emotions in university education?*

Implementation: The goal is to start implementing climate emotions into education. For this we looked into the barriers and resistance that inform the research question: *How can climate emotions be implemented in university education, and what are challenges?*

3.8. Aim

With this project, we aimed to make students more aware of their climate emotions, teach them how to cope with these emotions and show them how they can transform this into meaningful climate action. Additionally, we aimed to make climate emotions more normalized in education and help teachers feel more comfortable in discussing this with their students.

4. Existing interventions

- To explore how teachers could discuss climate emotions in the classroom, we reviewed various existing interventions.
- These interventions varied widely in activities (e.g., discussions, art, outdoor activities), duration (from 1.5 hours to several days) and target groups (children, high school students, and adults).
- We decided to focus on what elements we found important in each intervention.

In order to get a well-informed understanding of the current initiatives of including climate emotions in education, we performed a literature study into the existing interventions. This helped us to inform what elements were important to include when designing our workshop.

4.1. Methods

We have looked at 73 interventions, of which 61 were non-academic resources and 12 academic resources, see Appendix 1 for an overview of all of the interventions we looked at. Most non-academic sources were given to us by the CMP. Academic sources were found by using the keywords “climate change emotions”, “climate anxiety”, “eco anxiety”, “case study”, “pilot study”, “intervention”, “trial”, “initiative”, “students”, “university”, “school” and “education”. We have decided to report the interventions based on what they have in common.

4.2. Results

When looking at the approaches that are already there, we found that there are many differences. The interventions included different types of activities, such as discussions (e.g. Marks et al., 2023; ThoughtBox Education, n.d.; Climate café, n.d.), art (e.g. Ivanaj et al., 2014; CODAworx, 2019), outdoor activities (e.g. Woodland Trust, n.d.; Univeristy of Utrecht & Stichting Technotred, n.d.) or lesson plans (e.g. Hunt, 2021; Bellochi et al., 2014; ThoughtBox Education, n.d.). Additionally, there were some differences in the time that an intervention took: some were shorter than two hours (e.g. Rodriguez-Tedejo & Etayo, 2024; Kwok, 2019), others took a day (e.g. Ivanaj et al., 2014, Humanistisch Verbond, n.d.) and some several days (e.g. Manni et al., 2017; Sarrasin et al., 2022). Additionally, the initiatives all focused on different groups: some focused on children (i.e. Manni et al., 2017; Dorion, 2009; Hunt, 2021), others on students (i.e. Rodriguez-Tejedo & Etayo, 2024; Pfausch & Gray, 2017) and others on adults unrelated to education (i.e. Ryan, 2016; Haddaway & Duggan, 2023). These differences made it hard to compare and decide which initiative would be the best.

4.3. Common themes of interventions

Instead of trying to decide which intervention was the best, we decided to focus on what elements we found important instead. While there are a wide range of possible interventions, teachers that have experience with addressing climate emotions of the students distilled these interventions into 4 key themes: Engage, validate, support, and empower (Verlie et al., 2021). These themes are also supported by a clinical psychologist (Taylor & Murray, 2021).

Engage refers to the idea of engaging students with the facts of climate crisis and their emotional responses to it. Teachers recommended encouraging students to express their emotional responses. They also recommended having meditation sessions so that students can attune to their bodies and emotional responses (Verlie et al., 2021).

Validate is about validating the students' emotions when they express them. Teachers can validate the emotions of the students by actively listening. It is recommended that teachers also share their emotions about the climate crisis to normalize having climate emotions (Verlie et al., 2021).

Support refers to ensuring that students feel cared for. To this end, teachers recommend helping students by building caring communities with their peers. This can be done through creating a team activity that includes taking collective actions (Verlie et al., 2021). Patrick Kennedy-Williams, a clinical psychologist thinks that fostering connections between people will help them realise they do not bear the full responsibility of the climate crisis, and they cannot solve this problem on their own (Taylor & Murray, 2021).

Empower refers to helping students to counteract the feelings of hopelessness. Teachers recommend connecting students with activists, showcasing role models, and mentioning a range of actions that students can implement into their lives. Another idea comes from Patrick Kennedy-Williams, where he recommends setting practical, individual goals and celebrating achievement of the goals (Taylor & Murray, 2021). However, teachers argue that empowerment is best achieved through creating a community, connecting with others, and engaging in collective environmental action. They think institution-wide activities would enable students to participate collectively (Verlie et al., 2021).

4.4. Example: Force of Nature

One particular intervention that stood out was the one of Force of Nature, as recommended by the CMP. This is because their module provided very concrete step by step activities which made it easy for us to get inspired by and implement into our workshop. Due to the structure of their module, it was easy to shorten their intervention based on our needs and the time limitation. Additionally, their module focused on key points that we wanted to highlight in our workshop such as creating a space for discussing climate emotions, normalising climate emotions, providing coping mechanisms and turning climate emotions into meaningful climate actions.

The mission of Force of Nature is to mobilise people for climate action. They create Climate Action Workshops for students to channel their climate emotions into something constructive, but also guidelines for educators. For example, the Force of Natures' Discussion Guide for Educators consists of four modules. These modules include: "what is climate anxiety", "how to cope with climate anxiety", "turning anxiety into action" and "envisioning a better future" (Force of Nature, n.d.).

Overall, this intervention gives a very complete and detailed overview of what possibilities could be related to addressing climate emotions in a classroom setting. Based on this, and the other discussed interventions we based our own workshop.

5. Interviews and Experiences

- During our project, we interviewed various stakeholders to gather insights on addressing climate emotions in education.
- Among our conversations, the themes that came up regularly were the importance of addressing climate emotions in education, and the possible resistances to this by various stakeholders.
- For our workshop, we were given recommendations by many different stakeholders such as building a trust within the group, making the discussion groups small, involving students in the process of workshop design and starting with teachers and students who are already interested in participating in such a workshop.

5.1 Overview

During this project we had meetings with several stakeholders. In the following discussion we aim to summarize the core findings from each of these interviews and events. We talked to teachers and researchers in the fields of climate change, communication, emotions and climate psychology. We selected relevant experts based on the target group, knowledge about designing a workshop, general information on the topic of climate distress or based on a recommendation from the CMP. An overview of the people we spoke to can be found in table 1.

Table 1: overview of the interviews that were performed during this project.

Date	Person	Role/Organisation
15-3-2024	Anne-Pien van Wees	MA Humanistic Studies student
20-3-2024	Jasper ter Schegget	Transition Makers Toolbox
26-3-2024	Max van der Linden	Coordinator Climate Anxiety honours course
5-4-2024	Emiel van Loon	Coordinator BSc Future Planet Studies
9-4-2024	Christel van Eck	Teacher Climate Change Communication
18-4-2024	Nina Leestemaker	Teacher Water Governance course
14-5-2024	Eric Lanigan	Coach of Enjoy Existing
15-5-2024	Marian Zandbergen	Researcher HvA
25-5-2024	Anka Susicka	Green Office UvA
6-6-2024	David Tyfield	Professor in Sustainable Transitions and Political Economy
19-6-2024	Lena Hartog	Climate Activist

Across all meetings, a recurring theme was the importance of addressing emotions in climate education. The interviewees discussed some challenges with including climate emotions in education. First of all, the curriculum is usually already set, making it hard to find time to include additional activities. Secondly, discussing emotions might be uncomfortable for teachers and students. Lastly, implementing emotions into the university can cause resistance because there is a dominant view that universities should only focus on facts and not provide emotional support.

Besides information on the challenges, we got some tips for designing our workshop. First of all, it is important to make sure there is enough trust among the students. This can be achieved by teachers sharing their own experiences. For building trust, it helps if the students already are familiar with each other. Related to this is that discussions in smaller groups makes it easier for students to open up and share their experiences. To help students deal with climate-related emotions, teachers can give students strategies to manage their climate-related emotions. This is for example, normalizing emotions and talking about taking (collective) climate actions.

On a higher university level, it is important to balance academic skills with soft skills, such as emotional resilience. In order to introduce this in the university it is easier to start with teachers and students that are already interested in the topic of climate emotions. These people can inspire other groups that are unfamiliar with the topic. It can also help to explain that discussing emotions would help student well-being and their involvement in climate action.

5.2 Interviews with experts

Anne-Pien van Wees, MA student Humanistic studies

- We have been in contact with Anna-Pien van Wees, due to the emphasis in her studies on values and emotions rather than factual knowledge.
- She indicated the importance of having smaller groups to help students open up more about their emotions.
- She also explained the importance of practicing discussions to help students learn how to open up.

Anne-Pien van Wees is a student in the MA Humanistic Studies. We had an online meeting with her to discuss how emotions were discussed in her studies and how we could learn from that.

According to Anne-Pien, the focus of Humanism is on human values. It has a big focus on the human view on the earth and climate change. An important aspect of humanism is to make meaning (zingeving in Dutch) and to assist people in dealing with all of the world's issues. In this Master study, students are trained to become humanistic counsellors.

Anne-Pien indicated that, contrary to other university studies, there is not a lot of focus on the facts (for example, she said she did not know much about the theory of climate change) but instead the focus lies on how people feel about the issues. In all subjects that are taught, including climate change, people talk about how it makes them feel. There is a lot of space within the classroom and during lectures to discuss feelings with other students. She indicated that during tutorials students often are often asked to talk about their emotions, studies, mental health and view of life in small groups. This is included in the program, because the more you talk about feelings the more you open up.

This meeting with Anne-Pien helped us gain more understanding about the importance of having a small group size to talk about emotions in a classroom setting. It also highlighted that although talking about emotions might not be easy for some, practicing it helps people to open up.

Jasper ter Schegget, Transition Makers Toolbox & director of BSc beta-gamma

- Jasper ter Schegget, director of the BSc beta-gamma, also involved in the TMT emphasized the need for the balance between activity, learning goal, and assessment in implementation of a new teaching method.
- He talked about the resistance faced by the teachers and the curriculum designers in including TMT activities in existing study programs.
- Jasper recommended us to approach teachers to give a workshop about climate emotions by stating the benefits of addressing emotions.

Jasper ter Schegget is the director of the BSc beta-gamma and is also working on the Transition Makers Toolbox (TMT). The goal of the TMT is to help teachers in empowering their students to drive societal change. To this end, they developed activities targeting the Inner Development Goals (IDG). The purpose of this meeting was mostly to get an idea of what the TMT is, what possible challenges there could be in addressing the soft skills of students and including new elements to existing curriculum.

Jasper mentioned that in order to implement a new teaching method, it is important that the activity, learning goal and assessment are in balance. If one of them is out of balance, the teaching method will not be very good.

The TMT was first aiming to change entire study programs by including activities that focus on the development of soft skills, but they found that there was a lot of resistance from teachers and curriculum designers. Not all teachers could get behind the idea of including soft skills in their teaching. Additionally, soft skills are more difficult to measure which makes assessment more difficult. Moreover, some teachers believe it is not the university's job to educate students on their soft skills and coping mechanisms. Therefore, the TMT now focusses on making changes on a smaller scale, such as in courses.

During this meeting, we were recommended to emphasize the benefits of addressing emotions on students' learning when we would approach teachers and program coordinators about our idea of creating a workshop about climate emotions.

Max van der Linden, coordinator honours course 'How to deal with climate anxiety? An existentialist approach'

- Max van der Linden, the coordinator of the How to Deal with Climate Anxiety course, stated that students open up more during written assignments.
- For our workshop, Max recommended us to highlight that participation in discussions is voluntary, and what we are doing is a workshop and not a therapy.
- Max stated that teachers might be afraid of depressing their students if they focus on the emotional aspect of climate change.

Max van der Linden is the coordinator of the UvA honours course *How to Deal with Climate Anxiety? An Existentialist Approach*. The effects of this course will be studied for a period of 3 years. In his course, he uses an existentialist approach to discuss climate anxiety. In the course, discussions about emotions are facilitated. Additionally, students have to make assignments in which they write about their emotions. Max found that students talk more deeply about their emotions in the individual, written assignments compared to the discussions.

In the course, students are encouraged to think about what they value and live according to those values. They are also encouraged to change something in their lives based on these values. There are individual differences in finding meaning and what is important to you. Max said that it is important to take action based on what is important to you personally rather than doing what you think might have the most impact or trying to reach a certain expectation.

Max said that we should highlight that students do not have to say more than they want. Additionally, it is important to say that we are not psychologists, and our workshop is not meant as a therapy session. If students require psychological help, we can refer them to the student psychologist or their GP.

He said that teachers might be afraid to depress their students too much by talking about the emotional aspect of climate change. Max shared the canvas page of the course with us. On this he also used surveys, of which we took inspiration from for our own survey.

Emiel van Loon, coordinator BSc Future Planet Studies

- In a meeting with Emiel van Loon, we pitched our project idea for workshop.
- He connected us with Elisabeth Krueger from the Water Governance Course.
- She approved our workshop to be given in a Water Governance Course tutorial.

During the meeting with Emiel van Loon, the coordinator of Future Planet Studies, we pitched our project. He indicated that he would not be able to help a lot content-wise but that he could help us to contact some relevant people. In this meeting, Emiel connected us to the coordinator of the Water Governance of Aquatic Resources and Environments course, Elisabeth Krueger. We pitched our workshop idea to her, and she was open to do it in her course. She said that the tutorial setting would have approximately 40 students, but we could split that up in 20 students. She gave us an hour for the workshop.

Emiel said that teachers would be most resistant to our workshop as a result of time constraints. Their schedules are usually already very full, and this would be an extra activity.

Christel van Eck, teacher course Climate Change Communication

- Christel van Eck, teacher of the course Climate Change communication, does not shy away from discussing climate emotions in her course.
- She noticed that discussion of climate emotions causes tension in the classroom, making some students uncomfortable.
- For our workshop, Christel van Eck recommended us to establish trust before asking students to open up.
- She recommended us to show students how they can deal with these emotions and help them gain self-efficacy.
- She indicated the need for a practical manual for teachers to use when addressing climate emotions of the students.

Christel van Eck is an assistant professor at the UvA who now teaches the course Climate Change Communication. Her course has 25 students who all chose the course as an elective. Within this course, Christel uses a lot of discussions, and she is also one of the teachers who does not shy away from discussing climate anxiety. She noticed that as soon as she opened the conversation about climate change anxiety, a lot of tension came up in the classroom. Most students experienced some form of climate distress. Students who did not feel these emotions, or students who were not used to discussing emotions, found this experience uncomfortable. Christel said that this uncomfortable feeling and tension is normal, and we should not shy away from this. Many teachers would avoid discussing emotions because of this tension and because teachers do not know how to navigate the tension. Christel said that it would be really nice if we could create a practical manual for teachers to use on how to address climate emotions.

Christel gave us some recommendations for our workshop. She said that even though it might create tension, it is good to ask students directly about their climate emotions and acknowledge that these emotions are normal. However, it is important to establish trust before asking the students personal questions. This can be done by sharing own experiences and emotions. Additionally, she recommended to also show students how they can deal with the emotions. Finally, she said to give students a sense of self-efficacy by discussing what actions students can take on an individual and societal level. We need to be aware of the balance between a teacher and a therapist, which might also be what deters most teachers. Additionally, teachers might not know how to react to difficult emotions. They need to have these skills, be involved and should be able to discuss their own feelings.

Christel dealt with climate distress by realising that she didn't have to fight it on her own. Additionally, she let herself live non-sustainably as well to reduce that pressure because becoming overwhelmed does not help. Finally, she made a list of 5 strategies she could use to personally tackle climate change (e.g. teaching in climate education).

Nina Leestemaker, teacher course Water Governance of Aquatic Resources and Environments

- Nina Leestemaker, is the tutorial teacher of the course Water Governance of Aquatic Resources and Environments.
- During this meeting, we discussed the practical details for giving our workshop in her tutorial group.

Nina Leestemaker is a teacher of the course Water Governance of Aquatic Resources and Environments. She agreed to let us give our workshop in one of her tutorial groups. The meeting we had with her was to discuss what we were going to do during our workshop and some practical things like the time limit, the number of students and the set-up of the classroom.

Eric Lanigan, coach of Enjoy Existing

- Eric Lanigan, a coach specialized in emotions aims to help people transform distress into eustress.
- Eric agreed to collaborate with us and proposed to give an online workshop.
- We decided to make the workshop voluntary and invite teachers, students, anyone that might be interested in the topic.

Eric Lanigan is a coach focusing on making people aware of the importance of emotions. His work 'enjoy existing' relates to the importance of the acknowledgement of emotion. The goal of his work is to help people listen to their emotions and signals and to turn distress into eustress. Eric said that stress, or distress, is often considered a negative state, but in certain contexts it can become a good thing. If your survival is threatened by a dangerous situation, the distress response to run away might be very important. However, in our society, people are often perpetually in a distress response while there is not an acute dangerous situation. In that situation, distress is indeed not a positive state and should, according to Eric, be transformed into eustress: a state of inspiration or excitement.

Eric proposed to give an online workshop for people to work on and to become more aware of their own emotions. He made the suggestion to do this with a group that was already aware of their climate emotions. However, we thought it would be more interesting and meaningful to also include people that are not yet aware of this. We decided then to focus on students, teachers, and any party that is interested in the topic whether they are already aware of their own climate emotions or not.

Marian Zandbergen, HvA researcher

- Marian Zandbergen, a researcher at HvA, investigates how climate change impacts youth perspective through interviews.
- Through her interviews she witnessed the worries of young people first hand, especially the people between the ages of 15 to 16.
- She said that it is easier for people to talk about someone else's emotions than their own emotions.
- She mentioned the importance of acknowledging climate change is not the only worry of the young people.
- She introduced the concept of adultism and the difference between the ways different generations express their emotions.

Marian Zandbergen is a researcher at the HvA. She is currently working on a project on the impact of climate change on youth' perspective of the future. Within this project she is interviewing young people (age 16-23), teachers, psychologists and other stakeholders. She had not yet performed an analysis on these interviews, but she already found that a lot of young people have worries and doubts about climate change. It is a subject that is on the minds of students.

She interviewed young people in a small focus group setting in which she asked the people to first talk to their neighbour about their emotions. Then she would ask every couple to share what the other person shared about their emotions. She reasoned that it was easier for people to talk about the emotions of someone else than their own. Additionally, she mentioned that we could also ask people about future generations. That way people would be able to think about situations that do not directly affect them.

In her research, Marian mostly targets students who are not directly taught about climate change. But she mentioned that the more knowledge someone has, the more emotions they will feel about the topic. Marian also mentioned that young people between the age of 15 or 16 are most vulnerable.

When we mentioned that we have had a meeting about teacher resistance, she said that she has also heard about the teacher resistance in her interviews. Besides the things that we had already learned from Jasper ter Schegget, she said that some teachers feel like climate change is a political subject and therefore do not want to express their feelings or opinions about it. Additionally, if teachers do not experience climate emotions themselves, it might be uncomfortable or difficult to teach about this.

Additionally, Marian said that there is a big gap between the climate distress of young people and the attention of mental health professionals. She said that psychologists do not pay attention to climate distress, even psychologists who are associated with climate psychology organisations. The psychological institutions are focussed more on mental health disorders such as autism. The focus is rarely on societal issues.

Marian said that most young people who seek mental help are not necessarily the people who are most worried about climate change. She said that the worries are present in the youth, but there are many other things young people need to worry about.

Finally, Marian said that there is adultism, meaning that young people's worries are not taken seriously by adults. There might also be a difference in how different generations express their emotions and how useful they find it.

David Tyfield, professor of Sustainable Transitions and Political Economy

- In our meeting with David Tyfield, he emphasized the lack of training of teachers to address climate emotions of the students as a big barrier.
- He talked about the dominant worldview in which emotions and education are seen different.
- He believes more fundamental transformations are needed in order for addressing climate emotions in education to be normalised.
- He recommended us to start reaching out to the people who are already interested in this topic to face the least resistance.

David Tyfield is a professor of Sustainable Transitions and Political Economy at the Lancaster University. Additionally, he did the Global Leadership Sustainable Development Program that was based on the Inner Development Goals.

David told us that addressing climate emotion in education is important but that it also brings challenges. It can be difficult and bring discomfort to students and teachers, the lack of training of teachers might be a big barrier. This is because currently there is a dominant worldview in which the acknowledgment of emotions in the classroom is absent. Therefore, bigger transformations are needed in order for this topic to be normalised.

We also discussed the role of the university in this. Related to this is the mission of the university and their role in society as a whole. There is a discourse around academia of distrust which can be it challenging to introduce these topics. In general, there is little known about the role of emotions in education. David advised to start with approaching people that are already interested in for example the Inner Development Goals. He thought that this would be a better way than for example going to the head of a study or attend a staff meeting, which could create resistance. Another important point that he mentioned was the involvement of students. Based on this we decided to create a short survey that we used to ask students opinion on addressing climate emotions within their education.

Lena Hartog, Climate organizer and activist

- In our meeting with Lena Hartog, she emphasized the importance of focusing on collective action.
- She talked about the window of Overton and The Diffusion of Innovation Theory for system change.
- She highlighted the importance of focusing on students for system change due to their critical view on societal structures.
- She recommended us to focus on people who are already interested in climate emotions.
- She talked about the importance of approaching students the right way based on their educational backgrounds.

Lena Hartog is a climate organizer, campaigner and trainer. She works with organizations that strive for ecological and social justice. She gives workshops and trainings on climate action. We talked with her about individual and collective climate action. She mostly talked about that with the right intentions you can change your behaviour and shift the norm to inspire others. This is needed for systematic change within society. This can be most effectively done by engaging in collective climate action instead of individual actions.

Lena mentioned that students are the right group to start with this. They have great power over changing the system because they have a critical view on societal structures. Related to this is the window of Overton and The Diffusion of Innovation Theory. Lena explained that both can be seen as how new ideas become socially accepted over time. The window of Overton is a spectrum of which ideas are ranged from widely accepted to unthinkable. Combating climate change has shifted from radical to more acceptable, with a broad understanding of the importance of taking action. The Diffusion of Innovation Theory, describes how new ideas spread through society. There are different categories within this process: the early adopters for example, are people that help spread new ideas by influencing others. On the other side of the spectrum you have the late majority and laggards, these people are late and skeptical to adapting new ideas. Lena advised us to focus on the early adopters because they would be open to our idea and could influence a bigger majority.

We also discussed our target group, which for now are beta students and teachers. It is important to keep this in mind. This group might prefer to have a more scientific fact-based approach, for them it might be helpful to include the scientific background on the importance of emotions within the intervention.

5.3 Events

Besides conducting personal interviews, we also attended some events. Some of these events, like the climate cafe or the Transition Makers Toolbox community event, were to get a sense of what kind of initiatives are already out there. We used the Meet the Minor Event to ask students that visited the event about their opinions on climate emotions and their implementation in education. Finally, we went to the climate protest to get a sense of what it means to be part of a collective action and to observe how people behaved. See Table 2 for an overview of this.

We also attended some events, see Table 2. The workshops will be discussed in section 4.

Table 2: overview of the attended events.

Date	Event	Organisation/people
25-3-2024	Climate cafe	CMP
25-3-2024	Community Event	Transition Makers Toolbox
21-5-2024	Meet the minor event	Collective Futures
31-5-2024	Climate protest (klimaatmars) at the Zuidas	Various Dutch climate organizations

Climate Cafe, organised by the CMP

- Ilke, Vonne, and Jelger attended an online Climate Cafe hosted by CMP.
- The goal of the climate cafe is to create an open and safe environment to discuss climate emotions.
- During the workshop teachers expressed their concerns about the emotional impact of climate change on students.

Ilke, Vonne and Jelger went to the online climate cafe for teachers. We were on a zoom call with teachers from the UK as well as some other students. First CMP introduced themselves as well as some other initiatives that are connected to the climate distress campaign. Then we got sent into different break-out rooms. Ilke and Vonne were together in the student break-out room. Together with 3 other students (including Jadzia) and a facilitator from CMP we did a climate cafe session. They explained the climate cafe as a place where all thoughts and feelings related to climate change are welcome. It could be possible that people get upset but that is okay. The space is created to have an open, safe conversation. It is important that the shared information is treated confidential.

We started with doing a short meditation exercise. After that we were told to find an object in the room around you that made you feel connected to nature. Vonne chose a stone/crystal that she got from her grandparents. Ilke chose a small tree plant. Then we spoke about our objects and how we felt about climate change in general. After that we had a short conversation about how we feel about other people that are not engaged in climate action. Going back to the main room some teachers shared insights about their experiences which was interesting. It seemed that a lot of teachers were concerned about the emotional aspect of climate change.

Ilke and Vonne both liked the climate cafe and thought it was an interesting workshop to try out for us.

Community event, Transition Makers Toolbox

- During the Transition Makers Toolbox community event, Edith van Ewijk, a geographer, stated that when she gave a lecture about SDG, she felt powerless because she did not know how to address the climate emotions of her students.
- Edith van Ewijk thinks best place for addressing climate emotions in education would be tutorials.

Carmen went to the Transition Makers Toolbox community event. There were four people who gave presentations. One was about a tool for role-playing (Transition Makers Toolbox, 2024), another was about a collaboration between different universities, another about a marketing teacher who incorporated several tools into his teaching, and the final was from Jelger and Carmen about the minor and our project.

After the presentations Edith van Ewijk said that she recognized the story we told. She said that she once gave a guest lecture about the SDGs and said that she felt powerless because she could not address the emotions of the students after this lecture. She then reached out to the tutorial teacher to stress the importance of addressing these emotions. She thinks that the best place for such a discussion would be in the tutorials.

Before the presentation Carmen spoke with Wouter Buursma about our project and what we want to do. He said he developed his own intervention for high school geography students (Universiteit Utrecht & Stichting Technotrend, n.d.) based on the didactics of hope. This didactics focusses on reducing students' fear and desperation and makes students believe that a better world is possible and that they can have influence on it.

Meet the minor event, student poll

- While presenting our project, we asked visitors to fill in two small survey questions.
- All seven respondents agreed that climate emotions should be addressed in education.
- Visitors also wrote their climate emotions such as guilt, frustration, hope, stress.

On the 21st of May we presented our project at the Meet the minor event of Collective Futures. We showcased our project and asked visitors to fill in two small survey questions. We asked the visitors *"Should climate emotions be addressed in climate education?"*. None of the people filled this in with no, 7 people voted with yes. For the other interactive question, we presented people with a drawing of the earth in which they could write their own climate related emotions. Examples of this are: 'guilt', 'frustration', 'hope', 'stress', 'shame' and 'slightly concerned'.

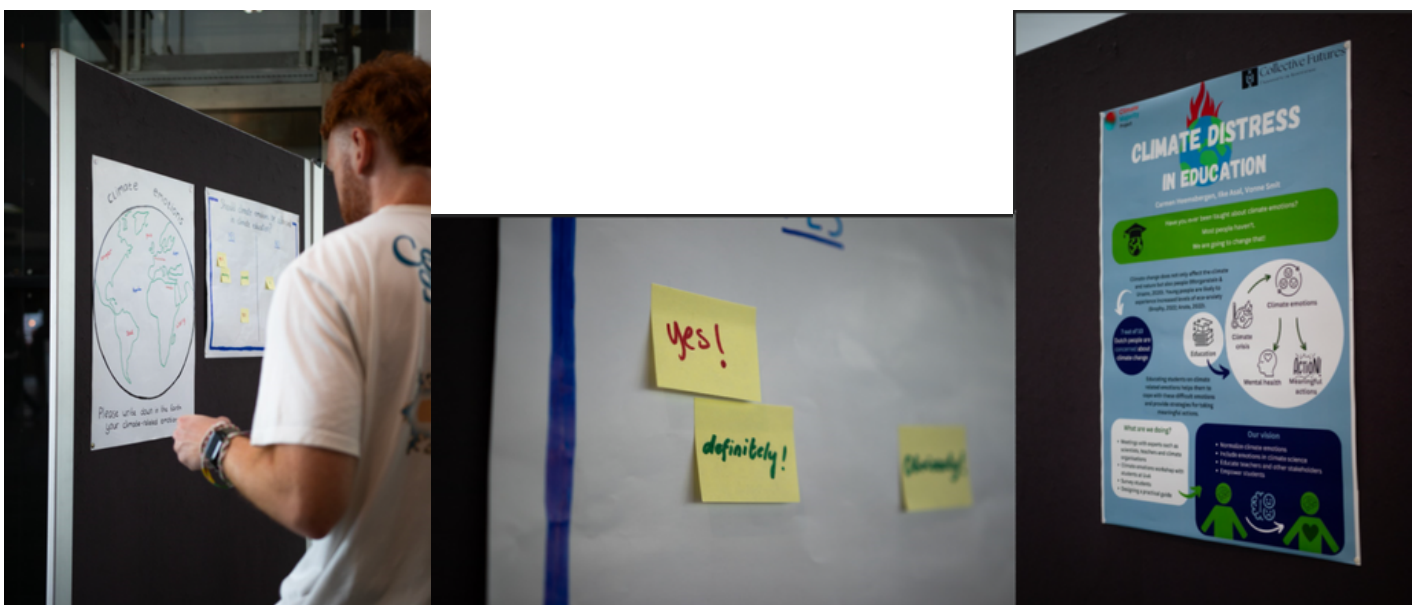


Figure 5: impression of the Meet the minor event (Collective Futures, May 2024).

Climate protest (Klimaatmars at the Zuidas)

On the 31th of May, Carmen and Vonne attended the climate protest at the Zuidas in Amsterdam. To get a better understanding of climate action it was interesting to see the engagement of participating people. We noticed that a lot of people from different age groups and backgrounds were present at the protest. A lot of people seemed to be quite angry and made this clear by making loud statements such as 'climate justice now'. It was nice to be able to participate in the protest and to feel more connected to the climate change movement.

6. Student opinions

We surveyed 44 students to assess their climate anxiety and openness to including climate emotions in their curriculum. Our key findings were:

- Worry levels of students: 16% are extremely worried, 43% very worried, 27% moderately worried, 9% slightly worried, 5% not worried.
- Education and Action: 60% receive climate education. Students reported actions like voting with climate in mind, eating vegetarian, and shopping second-hand, though some felt too overwhelmed to act.
- University Role: 66% believe universities should discuss climate emotions, and 50% would attend related events, depending on content.

In order to get the students perspective, we designed a short survey to get an indication of climate anxiety and to see if students would be open to be introduced to climate emotions within their student program. The full overview of the survey questions and answers can be found in Appendix 2 and 3. We asked students from our personal network; this gave us 44 responses. The first question “*Do you worry about climate change?*” showed a variety of answers. 43% of the students stated to be very worried about climate change. 27% were moderately worried, 16% was extremely worried, 9% is slightly worried. Only 5% stated to not be worried about climate change at all. Additionally, 60% of the students get educated on climate change.

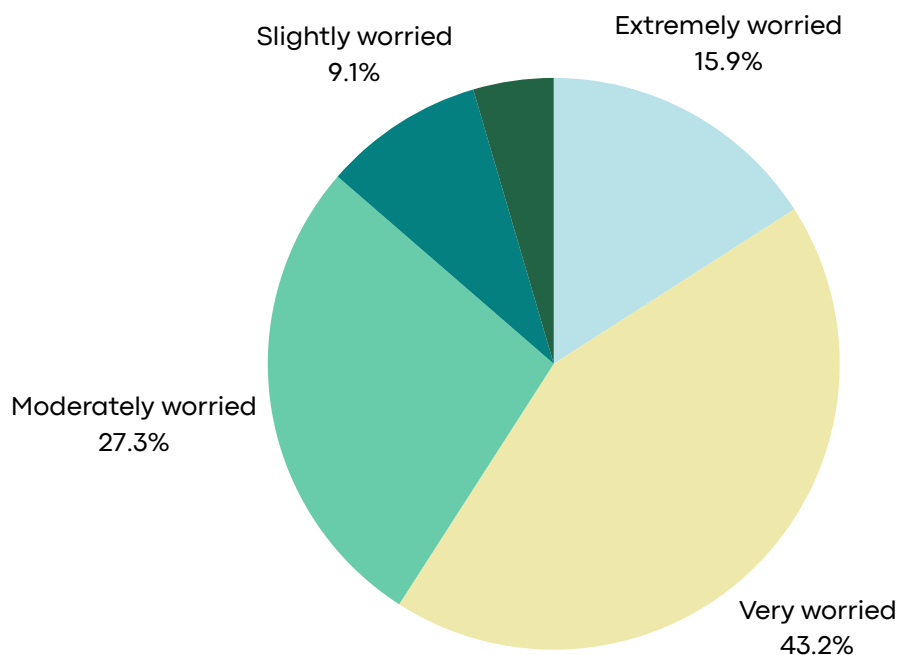


Figure 6: Do you worry about climate change? (student survey).

We also asked students if they take climate action and if so, to explain. A few interesting answers are worth highlighting:

“I vote with the climate in mind, eat a vegetarian diet, shop second hand for all clothes and some other items, and try to make choices decisions in mode of transportation”

“Not really. I currently feel too busy and overwhelmed with other things to meaningfully take action”

These quotes show that at least one student is engaged in pro-environmental behaviour and that it is important to keep in mind that students might feel overwhelmed.

Most students gave examples related to eating vegetarian, going to protests, riding a bicycle and buying second hand clothes. It is good to note that there were also students that did not take any climate action (4 people). The last two questions that we asked to students are related to the university and the implications of climate emotions. To the question: "Do you think your university should include discussions about climate emotions in their programs?" 66% of the students answered yes.

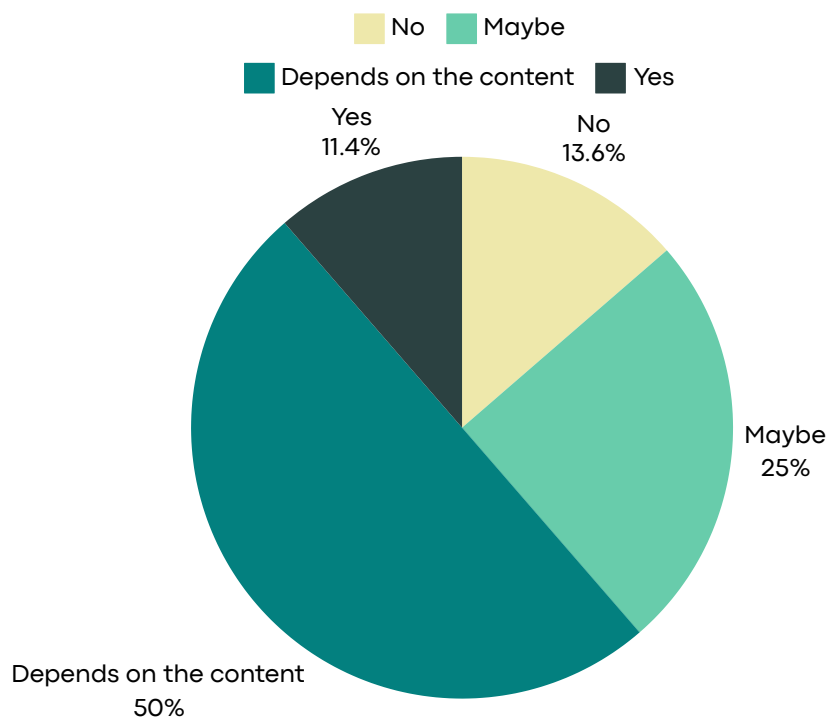


Figure 7: Do you think your university should include discussions about climate emotions in their programs? (student survey).

The answers to the question: “If your university would organize an event related to climate change and emotions would you join?” were more mixed: 50% of the students said that this would depend on the content.

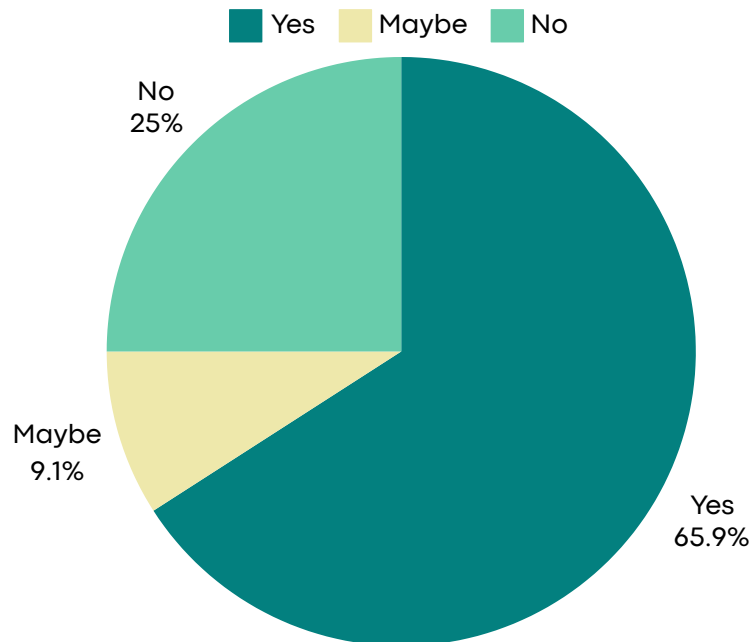


Figure 8: If your university would organize an event related to climate change and emotions, would you join? (student survey).

Overall, it can be said that generally students are worried about climate change and take climate action. Two third of the students also said that it would be important that their university includes climate emotions into the curriculum. This is an important signal that there is a need from the students to have this included in their education. There seems to be interest in joining an event if the content resonates with the students.

7. Workshops

We have given two types of workshops, a physical one for BSc students in climate science and an online one for anyone who was interested in learning about emotions. We have given the physical workshop to two different groups: students from the Collective Futures and students from the Water Governance course.

7.1. Physical Workshop

- We designed a workshop on climate emotions for Climate Science Students.
- The workshop was based on extensive research on initiatives on climate emotions and meaningful actions.
- Expert recommendations also guided the workshop.

We designed a workshop about climate emotions for students in Climate Science education, but the workshop can be used in any type of education in which students have knowledge about the climate crisis. The workshop design was based on research into the existing initiatives about raising awareness about climate emotions, discussing feelings associated with the climate crisis and information about meaningful climate actions. Additionally, the workshop was designed using recommendations from the meetings with experts.

7.1.1. Workshop Plan

- On April 16th we conducted a trial workshop with Collective Future students.
- The 60-minute workshop followed by 30 minutes of feedback, informed the design for our workshop with the Future Planet Studies students.
- On May 8th we ran the adjusted workshop with 15 second-year Water Governance students from the University of Amsterdam's Future Planet Studies program.
- The workshop lasted around 45 minutes, took place in the two-hour tutorial, and included an independent observer from Collective Futures.
- The group had a higher representation of women (10 female, 5 male).

On the 16th of April we performed a trial workshop with the students from the MSc minor Collective Futures. This workshop was meant as a try-out to see what works and what not. We spend 60 minutes on the actual workshop and additionally 30 minutes on receiving feedback from the students and teachers. The workshop design for Future Planet students was based on this trial workshop and the feedback.

The workshop that we performed on the 8th of May was with second year bachelor students from the course Water Governance of Aquatic Resources and Environments, which is part of the University of Amsterdam. The course is about Water governance and challenges that come with water management. Most of the students partaking this course are part of the bachelor's programme Future Planet Studies at the University of Amsterdam. This BSc programme teaches students about climate change and how to deal with these challenges.



Figure 9: Visual of us during the Future Planet Studies workshop.

Our groups consisted of 15 students and one teacher. There was also a student of Collective Futures present to document the workshop and to give us feedback. The students were around the age of 20-24. There were 2 students that were not part of Future Planet Studies. Within our workshop group there was a higher representation of women (10 female, 5 male).

The workshop was designed to last approximately 45 minutes. We performed our workshop in the second half of a two-hour tutorial. See Figure 10 for an overview of the workshop design.

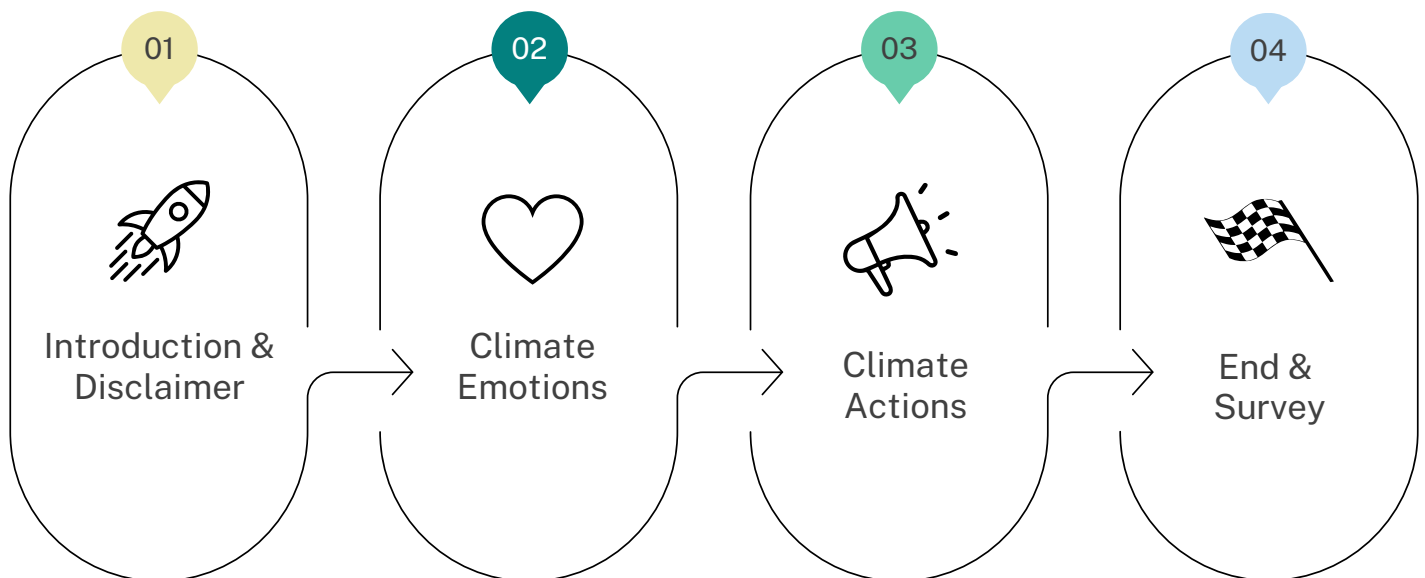


Figure 10: Overview of the topics we discussed during the workshop.

Introduction and disclaimer

- We began the workshop with introductions and overview of our project.
- To introduce the topic, we asked students to raise their hands if they have ever discussed their climate emotions in their studies.
- We clarified that the workshop was not meant to be a therapy session and provided contact details of student psychologists.

We started the workshop by introducing ourselves, our partner and the scope of our project. We then asked, with a raise of hands, if students have ever discussed their climate emotions during their studies.

After this we took the moment to say that we are not in any way psychologists and that the workshop is not meant as a therapy session. We then told them that if they require psychological help that they can contact their general practitioner or the student psychologists of the UvA. We displayed the contact details of the student psychologist on our slide. This was based on a meeting we had with Max van der Linden, coordinator of the Climate Anxiety honours course, where he stressed that this was important to reserve time for.

Climate Emotions

- We asked students to express their climate emotions via Mentimeter, creating a word cloud, which we then discussed, emphasizing that these emotions are normal.
- Students were then asked to think of a situation in which climate change emotionally affected them and share this in pairs or trios.
- We then discussed the usefulness of emotions, and asked students to consider how their climate emotions can be useful or not.

We then asked students to fill in their climate emotions in the online tool Mentimeter. This created a word cloud in which the words with the highest frequency showed up the largest. We showed this cloud to the students and discussed this with them. We highlighted here, based on recommendations from the CMP and Christel van Eck (teacher in Climate Change Communication), that it is completely normal to feel these emotions.

After this, we asked students to think of a situation in which climate change emotionally affected them. In this we gave an example of our own life. This, as recommended by the CMP and Christel van Eck, was meant to be an icebreaker activity to gain trust and also clarify the question we asked them. Additionally, we mentioned that if they felt like they did not experience climate emotions, to think about why. It could be that they pushed the feelings away or have never thought about it before. We asked them to discuss this in pairs or trios, depending on the set-up of the classroom.

Then, we asked students to raise their hands if they thought emotions in general are useful. We then proceeded to explain that emotions are a signal indicating that something might be wrong (Zhu & Thagard, 2002). For example, too much of an emotion may lead to numbness or inaction. After this we asked the students to think about how their climate emotions can be useful or not useful. We asked them to give examples. If they could not come up with examples, we would ask them what the benefit or disadvantage of a certain emotion could be.

Climate Actions

- We asked students to brainstorm climate actions, which we listed on the whiteboard.
- We emphasized that individual actions could inspire collective actions, providing examples like the normalization of not eating meat or shopping second-hand.
- We then asked students to make a list of 3-5 climate actions they can sustainably take, along with actions they could let go of.

We then proceeded to ask students what kind of climate actions they can take and wrote them on the whiteboard. We made sure to include a variety of actions ranging from short-term to long-term, individual to collective, and easy to difficult. Following this, we explained that taking individual actions can lead to collective action if you inspire others along the way. This was meant to give the students a sense of self-efficacy, as was suggested by Christel van Eck. We gave the example here that 10 years ago not eating meat or shopping second-hand was not as normalised as it has become now and therefore explaining that small, individual actions can have a large, although slow, collective impact. This part was included because many students indicated that they felt like their individual actions did not make enough of a difference and therefore played a role in how they felt about climate change.

After this, we asked students to raise their hand if they felt like they were not doing enough for the climate. We then continued to explain that this was also a common feeling and that they can get overwhelmed from feeling that they have to do more than they are capable of. This can then have impact on their mental health. We added here that sustainability does not only mean that something is good for the planet, but that it should also be long-lasting and good for them personally. We told them that it is also okay to let go of some climate actions in order to protect their mental health.

Based on an idea from Christel van Eck, we asked the students to make a list of 3 to 5 actions they can take, but also write down some things they could let go of. We highlighted here that they should choose actions that feel most meaningful to them and not necessarily have the most impact on the world, because this would be most do-able for them, as Max van der Linden suggested. When students were done with making their list, we concluded the action section by recommending students to check this list, whenever they feel overwhelmed. For this we made clear that it is also okay if this list changes over time.

Finish workshop

We then summarized what we discussed during the workshop and asked the students to fill in our survey.

7.1.2. Observations during the Workshop

- Both workshops, with Collective Futures and Future Planet Studies went well.
- The trial workshop with Collective Futures provided useful feedback for our final workshop with Future Planet Studies.
- During the workshop given to the Future Planet students, engagement varied. Some students participated enthusiastically whereas others were less serious.
- Compared to the workshop given to the Collective Futures students, group discussions in Future Planet Studies were less engaging.
- Unfamiliarity among students might have hindered the engagement during discussions.

In our opinion, the workshop with the Collective Futures students and the Future Planet Studies students both went well. The Collective Futures workshop acted as a trial workshop in which we got extensive feedback from the students and teachers on how to improve our final design. Overall, the students seemed to have a positive experience with the workshop. The feedback we got from them mostly related to explaining the function of emotions more, writing down the discussion questions on the slides and working on our modulation. The students mentioned that they liked the discussion and making the list for themselves.

Regarding the workshop for Future Planet students, most students were engaged in the workshop. There were some students who were enthusiastic about the workshop and engaged in lively conversations with their discussion partner(s). These conversations did not seem to deviate from the prompt we gave them.

There were also some students that did not seem to take the workshop seriously. This was evident in a few situations, such as, when we asked them to put their climate emotions into Mentimeter, they put in their names instead, see Figure 11. Additionally, the same students did not participate in making a climate action list.



Figure 11: Results of the Mentimeter question:
What emotions do you experience if you think about climate change? (n = 34).

When we asked the students if they had ever discussed climate emotions during their studies, three students hesitantly raised their hands. When asked if students felt like emotions are useful, all raised their hands. The same thing happened when we asked if the students were feeling like they are not doing enough for the climate.

The group discussion in this group were a bit stiff sometimes, especially compared to the trial workshop we did with Collective Futures. With Collective Futures we frequently had to interrupt the discussion to keep track of time, with Water Governance students we had to stimulate the group discussions. For example, one question they struggled with was *“How are your climate emotions useful?”*. We noticed that they had difficulty answering the question. To solve this, we gave them an emotion and asked them how that emotion results in an action or lack of action.

Not all students were familiar with each other as students outside of Future Planet Studies could also choose the course. When watching the group dynamic, we noticed a few people that were not interacting with the other students or sitting alone. This could have had an influence on how free students felt to speak up. We especially noticed this in comparison to the Collective Futures group, they seemed to be more comfortable with sharing their personal experiences.

We had 45 minutes for this workshop. This was enough to reach a surface level of understanding the topic. We did not feel like we had too little time.

7.3. Surveys

- Before the workshop, Future Planet Studies students' answered questions about their connection with nature, involvement in the climate crisis, and their climate emotions.
- Statements included care for the environment and concerns about human-caused climate change, using a 5-point Likert Scale, and an additional slider to measure the intensity of climate emotions.
- A post-workshop survey repeated these questions and added new ones about the workshop experience.

In order to get a better understanding of the underlying mechanisms of climate distress we used two different surveys to measure climate emotions. We gave the students from Future Planet Studies a pre-workshop survey (Appendix 4) in which we asked them about their connection with nature, how involved they are with the climate crisis and what emotions they experience related to climate change.

Statements such as *"I care about the natural environment"*, *"I believe that climate change is mainly caused by human activities"* and *"I worry that my decisions will result in something harmful for the environment"* were included. A full overview of the questionnaire can be found in the Appendix (4). All the questions were measured using a 5-point Likert scale going from "strongly disagree, somewhat disagree, neither agree nor disagree, somewhat agree and strongly agree". Additionally, a slider question was added to measure the different emotions that people experience. Respondents could state if and how intense they experience certain climate related emotions. The emotions and questions in our survey are based off the Climate Anxiety Scale (Clayton & Karazsia, 2020). To measure the respondents' connection with nature we included The Inclusion of Nature in Self measure, see Figure 12 (Schultz, 2001).

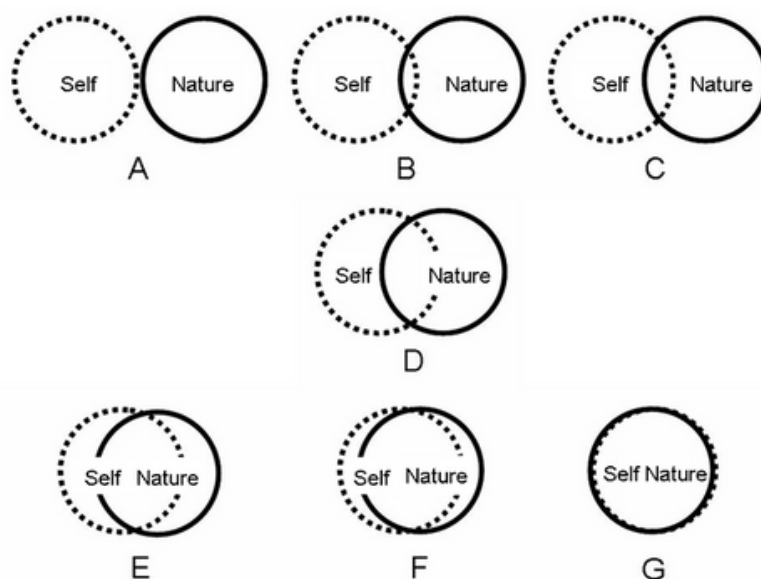


Figure 12: The inclusion of Nature in Self measure (Schultz, 2001).

The post-workshop survey that we gave to the Future Planet Studies students contained the same questions as the previous survey with additional questions about the workshop itself.

Survey Questions

Pre- and Post-Workshop Survey

Climate Change Statements

Climate Emotions

Climate Actions

Climate Emotions in Education

Post-Workshop Survey

Workshop Opinions

Figure 13: Overview of the survey question

These questions were related to the experience of students regarding the workshop, a full overview can be found in Appendix 5. Examples of this are:



"I enjoyed learning about emotions related to climate change"

"After the workshop I feel more empowered to take climate actions"

"I would like more opportunities within my education to talk about my emotions related to climate change"



7.2.1. Pre-Workshop Survey

- Students agree that the climate is changing and that it is caused by human activities
- Students mostly felt negative climate emotions
- Opinions on taking meaningful climate actions vary, but most students agree that students collectively can take climate action
- Opinions on including climate emotions in education vary

The pre-survey (Appendix 4) was used to measure climate emotions and the degree of these emotions within Future Planet Studies students. The pre-survey was filled in by 15 students. However, the questionnaire was completed by 13 students.

Climate change statements

The questions “*I believe the climate is changing*” (12 strongly agree, 1 strongly disagree) and “*I believe that climate change is mainly caused by human activities*” (11 strongly agree, 1 somewhat agree, 1 strongly disagree) both had a strong trend of strongly agreeing with the statement, see Figure 14. This is in line with students caring for the natural environment, of which 11 people strongly agreed to care about the natural environment. Additionally, 12 people considered themselves environmentalists (1 somewhat disagree, 3 somewhat agree, 9 strongly agree). Interestingly the person that filled in that they (strongly) disagree with these statements is the same student.

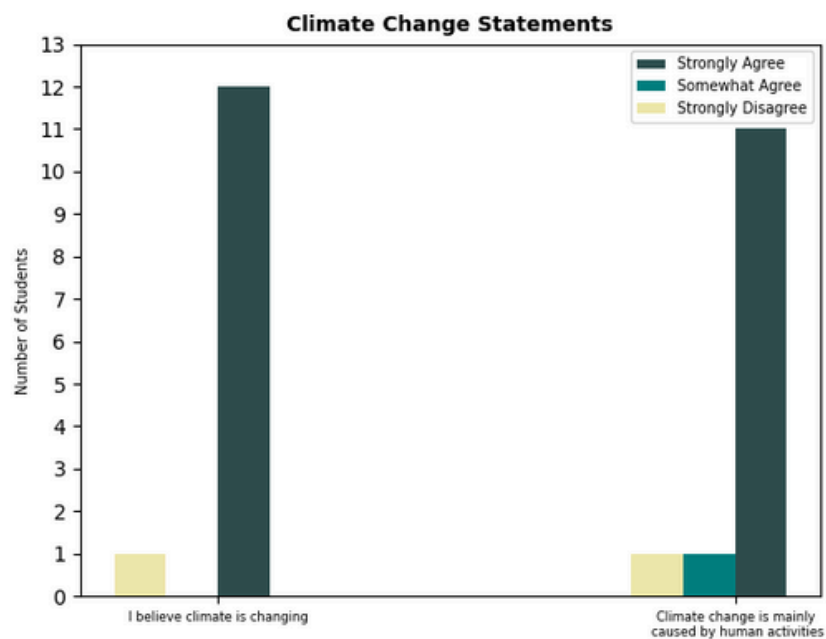


Figure 14 : climate change statements, (pre-survey future planet studies).

The measurements of the Inclusion of Nature in Self showed that most students identify with the image D (B= 1, C= 2, D=8, E=1, F= 1). The scale ranged from least connected to nature (A) to one with nature (G).

Climate emotions

The indicating emotion scale question shows variation in how climate related emotions are experienced. This scale goes from no experience of the emotions (0) to experiencing this emotion intensely (5). For this reason, the average will be used to gain insights. The emotions worry (M= 3.58), sadness (M=3.29) and disappointment (M=3.05) showed the highest intensity, see Figure 15. Joy (M=0.26), pride (M= 0.78) and excited (M= 0.92) are emotions least experienced by students.

Please indicate which emotions/feelings you experience when thinking about...	Average
Worry	3.58
Optimistic	1.41
Disappointed	3.05
Excited	0.92
Powerless	2.46
Empowered	1.45
Anxiety	2.28
Joy	0.26
Anger	2.85
Sadness	3.29
Hope	2.12
Guilt	2.33
Shame	1.72
Pride	0.78
Ignorance	1.02

Figure 15: indication of different emotions that are experienced by students (pre-survey, future planet studies students).

These results are in line with the statement *"I worry that my decisions will result in something harmful to the environment"* (1 somewhat disagree, 2 neither agree nor disagree, 7 somewhat agree and 3 strongly agree) in which most students express their worry about the environment. Most students also stated that they somewhat agree that they have a negative perspective on the future of the planet because of climate change (1 strongly disagree, 2 somewhat disagree, 9 somewhat agree, 1 strongly agree).

The statement *"I try not to focus on the negative effects of climate change"* was not strongly agreed with (2 strongly disagree, 5 somewhat disagree, 4 neither agree nor disagree, 2 somewhat agree), showing that some students do focus on the negative effects of climate change, which is in line with the low experience of emotions such as pride and joy.

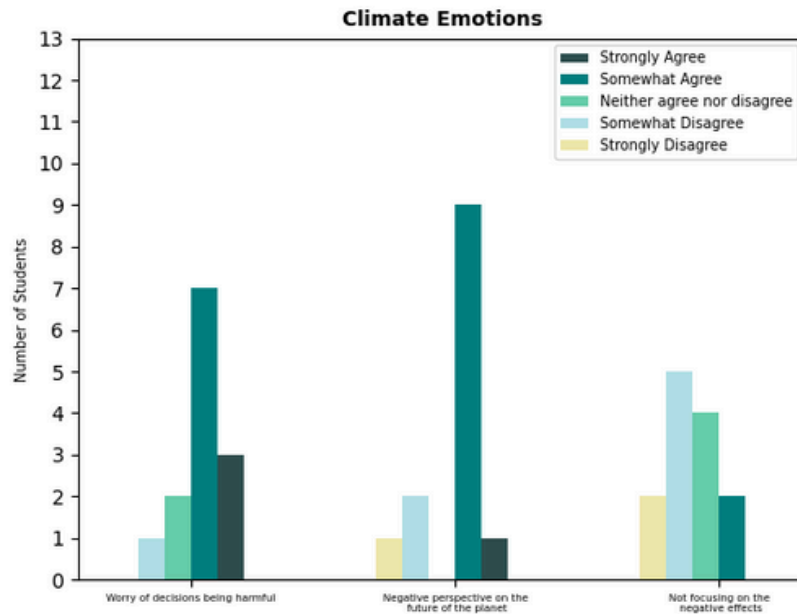


Figure 16: climate emotions (pre-survey, future planet studies students)

Climate actions

The next section of our questionnaire regards taking meaningful climate actions. There was variation within answers to the question: "I feel like my environment actions are meaningful and help the environment" (1 strongly disagree, 3 somewhat disagree, 4 neither agree nor disagree, 5 somewhat agree). Interestingly here is that no student strongly agrees with that their climate actions are meaningful. Regarding taking collective climate action we gave the students the statement: "I feel like we, as a group of students, can make sustainable choices if we want to" only one person disagreed with this statement (1 strongly disagree, 9 somewhat agree, 3 strongly agree).

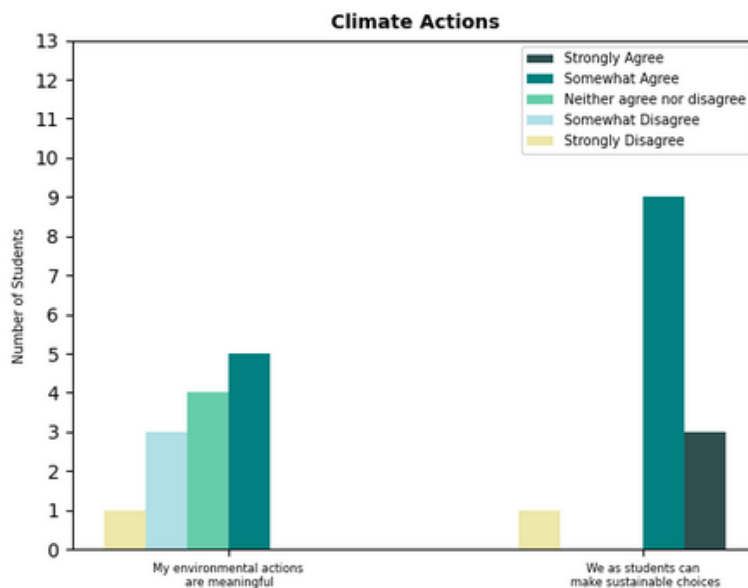


Figure 17: making climate action meaningful (pre-survey, future planet studies students).

Climate emotions in education

Questions about including climate emotions into climate science education were also presented to the students. In the statement "*I feel there is enough attention paid in my study program to the emotions that I experience when thinking about climate change*" the answers were scattered with no clear preference for paying more or less attention to emotions in education (strongly disagree 1, somewhat disagree 3, neither agree nor disagree 3, somewhat agree 4, strongly agree 2). Related to this question is the following statement: "*I find it important that emotions are discussed in climate education*" of which the students mostly agreed or did not have a clear opinion (2 somewhat disagree, 5 neither agree nor disagree, 6 somewhat agree).

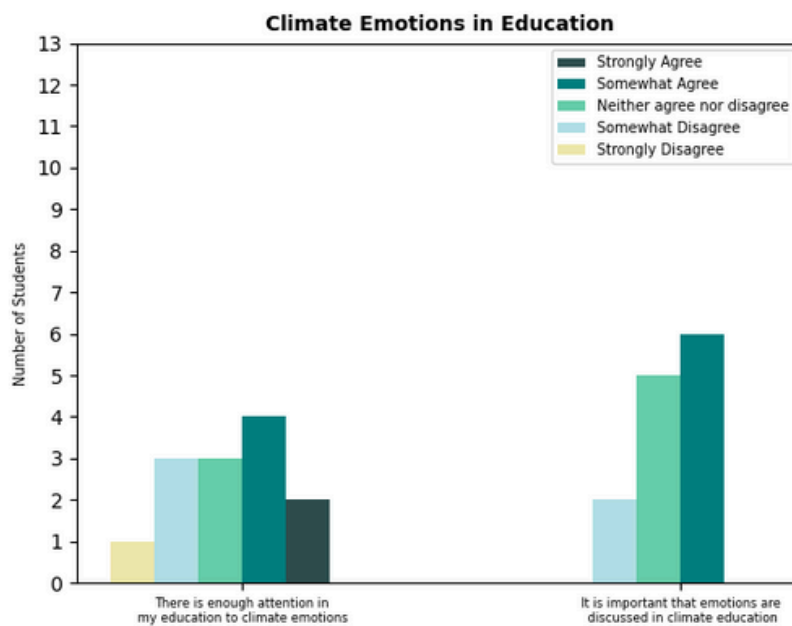


Figure 18: climate emotions in education (pre-survey, future planet studies students)

Lastly, we gave students the opportunity to comment on what they would like to change in climate change education. There were a few interesting points that stood out. For example, one of the students said they would like to have more practical tips and guidelines that are shared between students to make an environmental difference. Another comment that we got was related to finger pointing and blame within climate education. This student stated that they experience that there is a lot of blame on people that do not act sustainably. This is causing a gap between people instead of bringing people together.

Overall, the students seemed to experience mostly negative emotions around climate change. Most of the students also seemed to have a connection with nature and stated that they care about nature and combating climate change. Including emotions within climate education does not seem to spark high interest, although a few students said they would like to have emotions included more.

7.2.2. Post-survey

- Post-survey results showed similar beliefs about climate change, and connection with nature.
- Minor decrease in negative and positive emotions were observed.
- A slight increase in the number of students believing in the power of their actions was observed.

The post-survey was given to the Future Planet Studies students at the end of the workshop. In this questionnaire (appendix 6) we gave the students the same questions as in the previous survey to compare their answers. Additionally, we added questions regarding the enjoyment and importance of the workshop itself.

Changes between pre- and post-workshop surveys

The questions about believing in climate change and caring for nature were filled in similar as the pre-survey. This was also the case for the Inclusion of Nature in Self measurement. The indicating emotion scale questions showed some minor differences in comparison to the pre-survey. For example, a lot of the negative emotions showed a slight decrease. Although we cannot say anything about the power or significance of these results it gives an impression of the effect of the workshop. Worry went from 3.58 to 3.15, Anxiety showed a decrease from 2.28 to 1.18. The emotion of sadness went from 3.29 to 2.98. Another interesting thing that can be seen from this data is that some of the positively phrased emotions (pride and excitement) also seemed to have decreased in a small amount (pride: 0.78 to 0.39, excitement: 0.92 to 0.49).

Regarding the other questions there was not a clear trend or difference between the pre and post surveys. Small differences were found in statements such as "*I feel like my environmental actions are meaningful and help the environment*". Here 53% of the respondents agreed somewhat in the post survey, in comparison to 38% of the students in the pre-survey.

Overall, we cannot make any direct statements about the relationship between the workshop and the experience of climate distress. Because of the small sample size and shortness of the workshop no direct links can be made with decreasing climate anxiety. However, the students did not seem to have experienced that the workshop had a negative impact on their mental health or involvement in climate action. The workshop seemed to have either a neutral or slightly positive effect on climate distress and raising awareness for climate emotions.

Climate emotions after the workshop

The goal behind the emotion part of our workshop was to create a space for students to talk about their climate-emotions. By encouraging students to think and talk about their climate emotions, we hoped to increase their awareness of their emotions and normalize having climate emotions. Additionally, we wanted students to understand emotions have a purpose in our lives. The results indicate that we have accomplished all these goals in our workshop. However, it's good to highlight again that the sample size is too small to make any concrete statements about these results.

10 out of 15 agreed with the statement: *“After the workshop, I have become more aware of my climate-related emotions”*, see Figure 19. Therefore, we think that we have achieved our goal of increasing students’ awareness of their climate-emotions. Among the 15 students, 9 indicated that they already knew having climate-emotions were normal. However, 5 people indicated that although they knew it was normal, they still learned new something new and 1 student indicated that they did not think about this at all, before the workshop. Therefore, although 60% of the students already knew about the topic, 40% of the students still learned something new, hence we can conclude that this part as a success as well.

Because talking about emotions is a very sensitive topic, we were afraid that some students might feel uncomfortable during the workshop. To our surprise, 11 out of 15 did not agree with the statement: *“It was uncomfortable to think about my climate emotions during the workshop”*. 9 out of 15 students did not agree with the statement of *“It was uncomfortable to share my emotions with my classmates during the workshop”*. However, it is important to acknowledge that although most of the students did not feel uncomfortable, 3 students disagreed with the first and 2 students agreed with the second statement, indicating that thinking and talking about emotions is not easy for everyone, see figure 19. Therefore, it is always important to approach discussing climate emotions with caution.

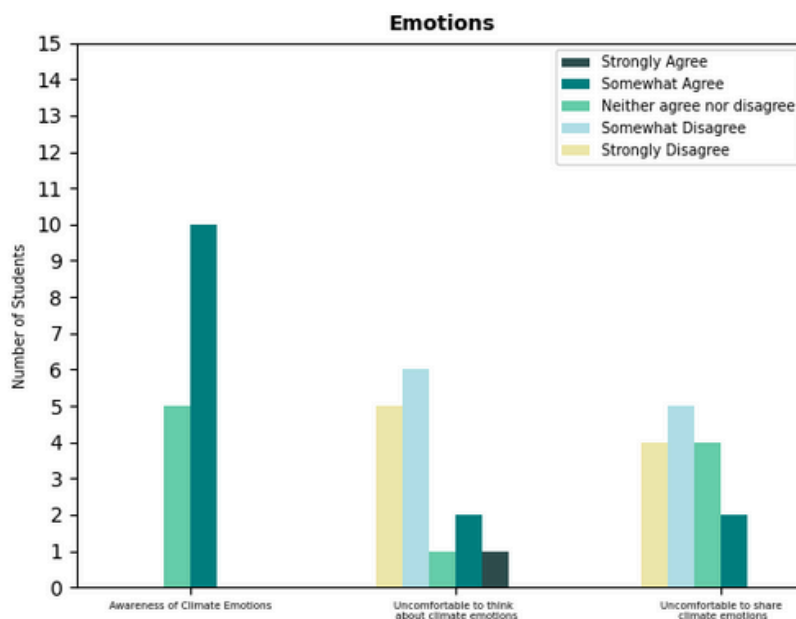


Figure 19 : Climate Emotions (post- survey, future planet studies).

12 out of 15 students learned something new about the usefulness of emotions, and among the 12 students, 6 have indicated that they have not thought about the use of emotions before the workshop. Considering that only 3 students indicated that they already knew about this and did not learn anything new, it is very important to inform students about the usefulness of emotions in their lives, see Figure 20.

The workshop was not designed with the intention of decreasing the intensity of the students' climate emotions. Therefore, we were not surprised to see no agreement with the statement: *"After the workshop the intensity of my climate emotions decreased"*.

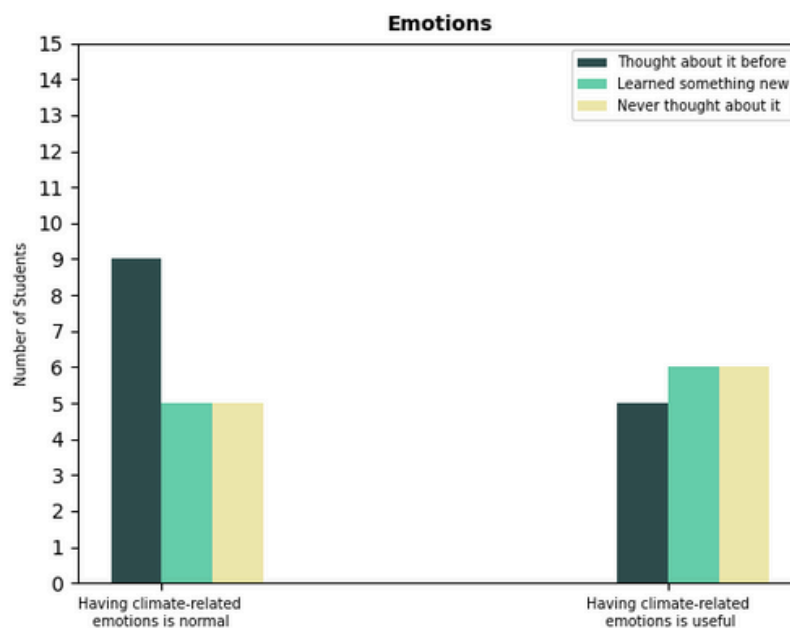


Figure 20: Climate emotions (post- survey, future planet studies).

Climate actions after the workshop

The goal behind the action part of the workshop was to help people to feel empowered to take climate actions. Additionally, we wanted students to have a realistic idea of what they can and cannot do to engage in pro-environmental behaviour. Therefore, we wanted them to acknowledge they cannot do everything, and they should not feel the whole responsibility on their shoulders. The action part of the workshop helped us understand that it is quite difficult to make people feel empowered and make them think their actions matter, especially when dealing with the climate crisis.

Only 6 out of 15 students agreed with the statement: *"After the workshop I am more confident that my climate actions matter"*. 1 student disagreed and 8 students chose "neither agree nor disagree". Additionally, only 6 out of 15 students agreed with the statement: *"After the workshop I feel more empowered to take climate actions"*. 4 students disagreed, and the remaining 5 chose neither agree nor disagree, see Figure 20. Although it is nice to see 6 students feeling more confident in the effects of the actions they take, and feeling more empowered, it is clear that the workshop did not speak to everyone in the same extent. Therefore, there is a room for improvement for the future workshops.

The post-survey results (appendix 7) also indicate that it is more difficult to make students feel they do not bear the whole responsibility of climate change, and it is okay to accept you cannot do everything sustainable. 8 out of 15 students agreed with the statement *“After the workshop, I will allow myself to not always make the most sustainable choices”*. 1 student disagreed, and 6 students neither agreed nor disagreed.

This section of the action part seems to be useful for some students, however further improvements is necessary for the workshop to speak to more students. Additionally, 7 students indicated that although they have thought about the normality of not living sustainable all the time, they still learned something new. We interpret this as a positive outcome, although we were not able to convince every student, we were still able to introduce with them a different way of thinking.

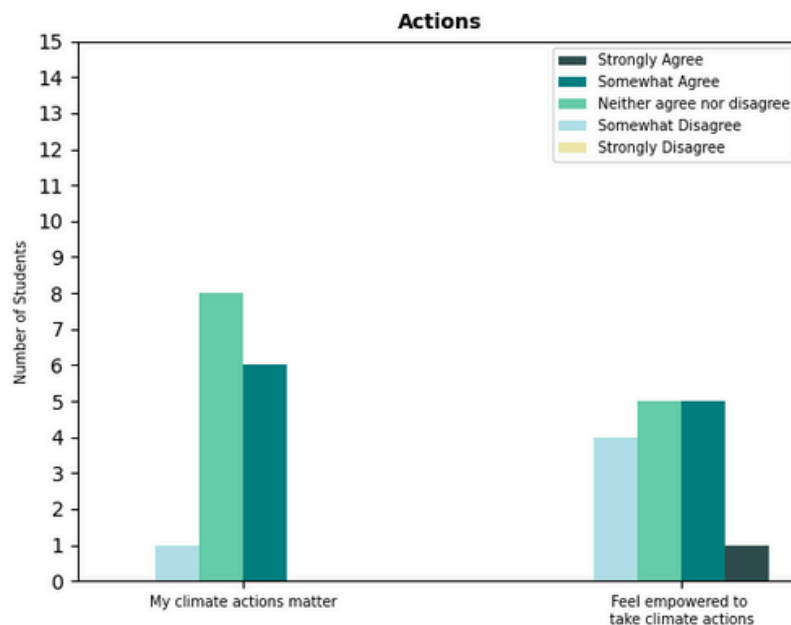


Figure 21: Climate actions (post- survey, future planet studies).

Connection with others after the workshop

One of the goals of the workshop was to make students feel more connected with their peers. We hoped they would realise that they are not alone in their worries about climate change. We also assumed that by learning about the climate emotions of their peers, we would normalize having climate emotions.

Although 9 out of 15 students agreed with the statement: *“Getting to know that other people also experience emotions related to climate change made me feel less alone”*. Only 5 students agreed with the statement: *“Sharing my climate emotions with my classmates made me feel more connected with them”*, see Figure 22. Considering that we had a limited amount of time for the workshop, we were not able to allocate a lot of time and therefore, it could be the case that the discussion was not deep enough for a strong connection to happen and help every student to feel less alone.

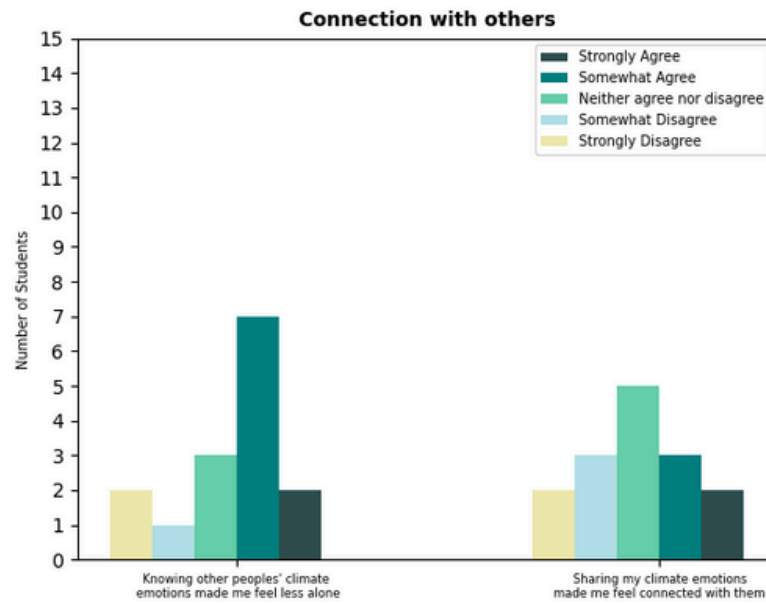


Figure 22: Connection with other students (post-survey, future planet studies).

Opinions on the Workshop

Including emotions into climate science is not a standard act. This workshop was our test to explore possible ways of creating a space for climate emotions in education. Because our target group is students, it was important to assess if students enjoyed the workshop and if they would like more opportunity within their education to talk about their climate emotions. Although as the surveys and the Mentimeter demonstrates all students experience negative climate emotions, only 4 out of 15 students agreed with the statement: *“I would like more opportunity within my education to talk about my emotions related to climate change”*. 6 out of 15 people agreed with the statement: *“I think the workshop was unnecessary”*, see Figure 23. We interpreted this result as indicating some resistance from students to include emotions into education. It can be the case that the students are used to more traditional education and have a hard time seeing the importance of including climate emotions into the curriculum.

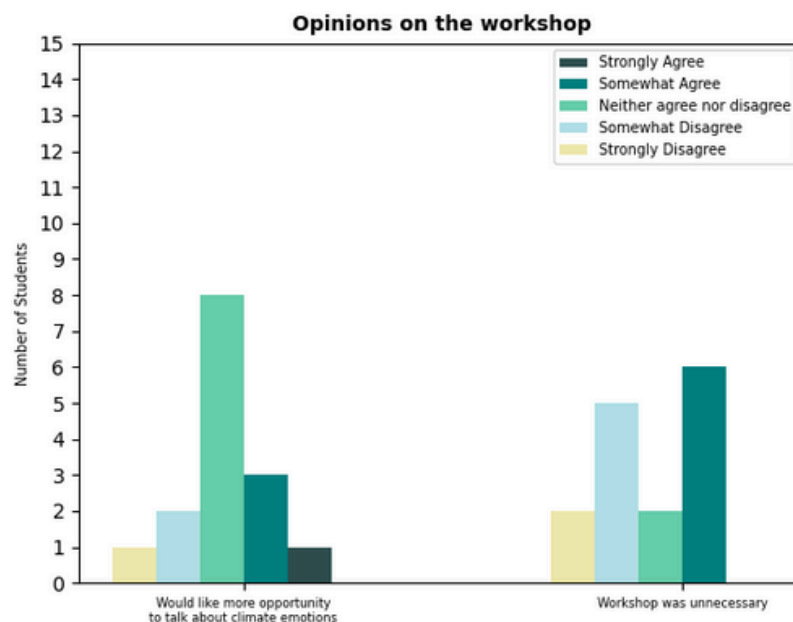


Figure 23: Opinions on the workshop (post-survey, future planet studies).

7.3 Online workshop: Making stress meaningful by Eric Lanigan

- We collaborated with a US based coach, Eric Lanigan to explore different settings of creating a space for emotions of the students.
- Unlike the in-person mandatory workshop with the Future Planet Studies, this workshop was voluntary and online.
- The workshop included theory about emotions, and guided meditation followed by discussions in breakout rooms.
- Post-workshop feedback showed most participants valued connecting, sharing, and thinking the desire behind emotions.
- Opinions were mixed about discussing emotions online, with some finding it okay and others missing in-person connection.

To experiment with different settings of creating a space for students, teachers, any other interested parties to become aware of and express their emotions we collaborated with a US-based coach: Eric Lanigan. Eric Lanigan has an expertise in the topic of emotions. We asked him to give an online workshop and explain his knowledge about the use of emotions to interested parties. Although the workshop was mostly about emotions in general, we also asked him to touch upon climate emotions.

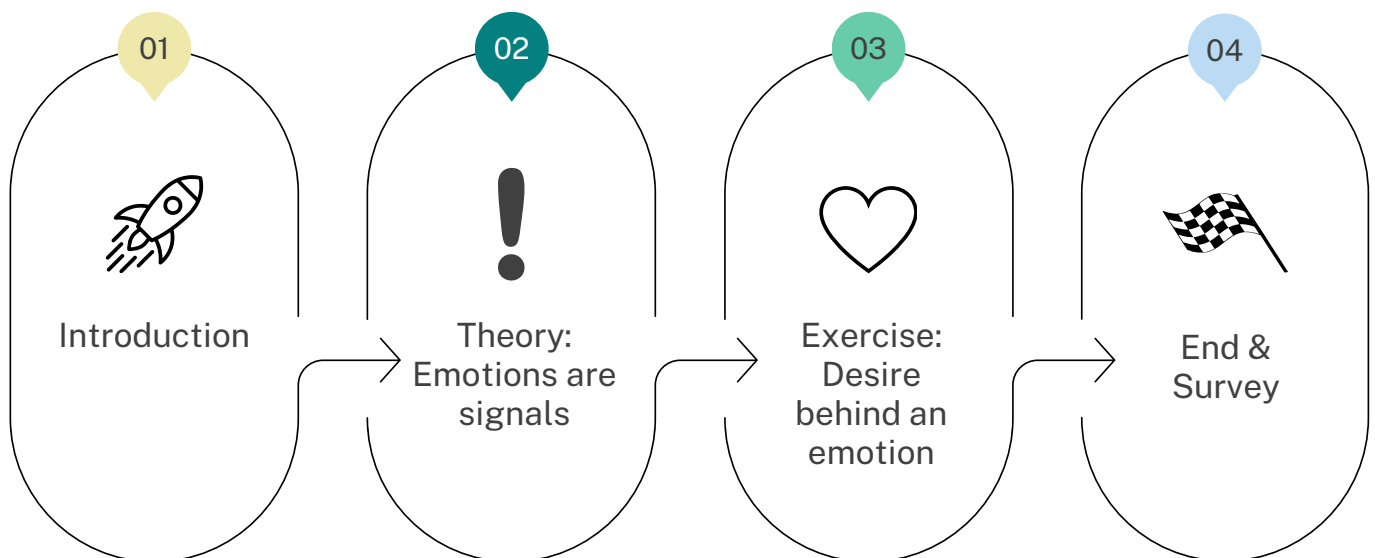


Figure 24: Workshop design hosted by Eric Lanigan.

Eric started the workshop with a bit of information about himself and how emotions are signals and how that relates to action. We then did an exercise in which we had to feel into our bodies where we felt a certain emotion or tension. Then we had to think of the desire that was behind it (i.e. if you are feeling anger due to the climate crisis, the desire might be to save our beautiful earth) and from that go to actionable steps. We did this exercise twice, first with the whole group in the main session, and after that in break-out rooms with approximately 3-4 people.

After the workshop, we asked the participants to fill out a short survey about the workshop. More specifically we wanted to learn about what they valued the most in the workshop, how was it for them to speak about emotions in an online setting with the people they might not be familiar with, and what could be improved for future workshops. Overall, it seems like majority of the people valued connecting, sharing, and hearing about emotions. They also valued thinking about the desire behind their emotions. We observed mixed opinions about speaking about emotions in an online setting with people we might not be familiar with. Four out of eight people indicated that it was okay, or fine, to talk about emotions in an online setting. One person indicated that it was uncomfortable for them because they missed a human connection online. Several people indicated that they had difficulties with understanding the contents of the theory part. Recommendations that we got were to use a slideshow for the theory, shorten the theory, have a multiple, shorter theory sections in between the exercises. Most people liked the exercises although not everyone could pinpoint an emotion. There was one participant that left after the first exercise.

Other general recommendations were that the session could be framed as a meditation session or should have more interactions. One of the participants said that they felt like it did not add a lot of benefit compared to a regular meditation session. Although 6 out of 8 people indicated that they would recommend this workshop to others, only 4 were willing to do a similar or more advanced workshop for further emotional development.

There are couple of differences between this workshop and the workshop we did with the Future Planet Studies (FPS). For one, this was an online workshop whereas our workshop was in person. Additionally, attendance to our workshop was mandatory for the students of the FPS, because it was held during the tutorial. However, attendance to this workshop was voluntary. We sent an invite to CF students, teachers we have been in contact with, CMP, and other people who thought might be interested. They were free to (not) join. 10 people decided to join, including us, and two more CF students. By voluntary attendance, we wanted to assess if intrinsic motivation to engage with the topic of emotions results in more engagement during the workshop (e.g., more expression of emotions) and more liking of the workshop.

7.4 Discussions of the workshops

- The relationship between students has influence on how engaging discussions are
- Workshops longer than 2 hours can be mentally tiring if students are not used to this
- Online workshop can be challenging

Collective Futures and Future Planet Studies

Based on our experiences from the trial workshop at Collective Futures and the workshop with Water Governance students we were able to formulate some insights.

We think that the relationships between students and how used to students are to discuss personal matters with each other determine how freely they speak up in class and how engaging the discussions become. There was a big difference between Collective Futures and Water Governance students in that regard. Within Collective Futures, students have spent every day together for three months. Within Water Governance, some students seemed to have formed friendships within the group, but there were also students who did not or only talked to their closest neighbours. This indicates a difference in group dynamics. Additionally, within Collective Futures, students regularly engage in discussions and share personal matters with each other, however this happened to a lesser extent within Future Planet

Because of these two factors, during the workshop with Water Governance group, 45-50 minutes felt like enough time due to somewhat stiff conversations whereas with Collective Futures although we took an hour, we could have easily taken an hour and half.

Therefore, depending on the group dynamics the workshop as we have designed it could last anywhere between 45 and 90 minutes. We would not recommend having sessions longer than 2 hours because discussing emotions can be mentally tiring and something that students may not be used to. It will probably be more beneficial to have multiple sessions at different moments. Additionally, based on our experience, we think that in less cohesive groups it might work best to have discussions in pairs instead of with the whole group.

Future Planet Studies and online workshop

When we compared the workshop we performed with Water Governance students to the workshop hosted by Eric Lanigan, two main differences stand out. Attendance to the workshop performed with the Water Governance students was obligatory and in-person, whereas attendance to the workshop hosted by Eric Lanigan was voluntary and online. Based on our experience and observations with these different settings, we noticed that when people join with their own will, they are more likely to take the workshop seriously and engage in the activities.

However, there is a downside to making the attendance voluntary, which is the reduced scope of impact. When the attendance is made voluntary, it is likely that only the people who are already interested in emotions, or aware of the importance of emotions will join. The people that are less aware and therefore need it more will likely not participate. Therefore, the choice of making it voluntary or not should be considered with this knowledge in mind.

Additionally, we realised that when the workshop is given online, people have more difficulty with keeping their attention, especially if the theory part is too long. Attendees of the workshop by Eric Lanigan recommended to include slides and switch between theory and activity parts to help them keep their attention. Contrary to our expectations, some people did not find talking about their emotions in an online setting uncomfortable. We observed that this depends on the personality of the participants. Some people did not have a preference for an online or in-person setting whereas others indicated that they were missing personal contact online. To reach a bigger audience, we recommend doing the workshops in person, if possible, to eliminate the effect of the personality difference on peoples' comfort with discussing personal matters. Lastly, we noticed that regulating discussions during an in-person setting is easier and feels more natural than switching between breakout rooms during an online setting.

8. Website

- We created a website that is specifically designed for teachers to help them include climate emotions within their classes.
- The website consists of 3 sections: information, recommendations, and examples.
- Information section is for giving general information about climate emotions, students experience, climate action, and the implementation in education.
- Recommendations section includes practical tips for teachers.
- Examples section includes information about the workshops, and other inspirational resources from other parties.

We recommend teachers and curriculum designers to include climate emotions in their teaching programs. For this, we have created a website designed for teachers based on information we gained during literature research, interviews and our own experiences with the workshops. We decided to use a website because it is easily accessible, can be distributed worldwide and easily adjusted if the information needs to be updated. We chose this because we aim to reach and inspire a wide audience, not just university teachers in the Netherlands. We believe that this website will help teachers overcome the fear of discussing climate emotions in the classroom and will contribute to reducing the taboo around discussing emotions in general. Ultimately, we hope that this website can also inspire curriculum designers to see the value of discussing climate emotions in education so that it will become more common in education.

The website (<https://carmenheemsbergen.wixsite.com/climate-companion/physical-workshop>) is divided into three sections: information, recommendations and examples. In the information section there is information about climate emotions, students experience, climate action and the implementation in education. See Figure 25 for an example of the 'Climate Emotions' page in this section.

What are climate emotions?

Climate change is not a neutral topic and it is normal that it comes with emotions. In fact, the more you learn about climate change, the more likely you are to experience distressing emotions such as anxiety or hopelessness (Ediz & Yanik, 2023). So what are climate emotions?

Climate emotions are all emotions related to climate change. This includes worry, denial, anger, grief, anxiety, numbness, depression, despair, and hope all related to ecological and climate change.

Climate change does not only affect the climate and nature but also people (Morganstein & Ursano, 2020). Research shows that young people and adolescents are likely to experience increased levels of eco-anxiety, eco-guilt and eco-grief (Brophy, 2022; Aruta, 2022).

Student Distress



Figure 25: Screenshot of a part of the 'Climate Emotions' page on the website.

In the recommendation part practical tips about required skills, what topics to discuss and some general recommendations are given. See Figure 26 for an example of the 'General Recommendations' page in this section.

Recommendations



General

- Establish trust
- Mention the intent of the discussion
- Give examples of how you feel or what you have experienced. It helps students relate to you and creates a safe environment.
- Create a variation between theoretical parts and interactive parts. Students lose focus when there is a long theoretical part.
- No longer than 2 hours: discussing emotions is likely something students are not used to and might be mentally tiring.



Students do not know each other well

- Students might be less open to share and might avoid sharing what they truly feel
- Discussions in small groups work best



Students know each other

- Students might be more open to share
- Discussions in small groups as well as discussions with a larger group can be used



Online setting

We do not recommend doing an online session about climate emotions, if there are no other options, here are a few tips:

- Make sure people keep their attention by including slides
- Make the session as engaging as possible by keeping the theory part short
- Create small groups of students (3-4 students) in break out rooms to discuss emotions

Figure 26: Screenshot of a part of the 'General Recommendations' page on the website.

Finally, the examples section will have information about the workshops we have tried. See Figure 27 for an example of the ‘Physical Workshop’ page in this section. In the future, we would like to add a page on inspirational resources from other parties, such as Force of Nature or the Transition Makers Toolbox.

Take-aways



Engagement

Not all students were equally interested. Some students did other things, refused to do the exercises or made jokes.



Discussions

It worked better to let the students have small discussions in pairs or trios than in the larger group.



Experiences

When we shared our own experiences with climate emotions, students were nodding along in recognition. We felt like this made them more open to discuss, but it also helped to explain the question to them.



Trust

It was important to build trust. We did this by saying that students only have to share what they felt comfortable with and stating clearly what they can expect from us, for example that we are not psychologists and will not try to cure them.

Figure 27: Screenshot of a part of the ‘Physical Workshop’ page on the website.

In the future, we hope to branch out to other distressing societal issues, such as wars, inequality or poverty. We think that the techniques we present to climate science teachers can also be used in different sectors. This will hopefully contribute to preventing a mental health crisis as a result of big societal problems, such as climate change.

8.1. Publication of article

Additional to the website, we also wrote an article about the importance of climate emotions in higher education in collaboration with the Green Office of the Uva and the Dutch website 'Duurzame student'. In the article Carmen writes about worries that student have about climate change and how they can deal with them:

“ As students, we learn a lot about how the climate is changing. The world is increasingly experiencing problems with floods, forest fires, air pollution and so on. It seems like it could be more hopeful. Logically, all these problems come with a lot of emotions: so-called climate emotions. In this article, I will explain more about these emotions and what you can do with them (Heemsbergen, 2024).

”

We were very excited to share our project with a broader target group. Via these ways we hope to spread awareness and provide strategies to teachers and students.

9. Discussion and Conclusion

9.1. Summary of key points

- The Climate crisis triggers many negative emotions, particularly among informed youth, making it crucial to address climate emotions in education.
- By raising awareness and creating spaces for emotional expression, teachers can help students channel these emotions into meaningful actions.
- We found students are generally interested in attending to workshops about climate emotions, depending on the content and setting.
- Based on our research and workshop experiences we created a website for teachers.
- However, we are aware of the resistance of including emotions into education.

The climate crisis is not a neutral topic. Learning about the collapse of the world necessarily comes with a lot of negative emotions. Considering the increased susceptibility of youth to experience climate anxiety, especially the youth with more climate knowledge, and the importance of providing people with inner resilience, addressing climate emotions in education become vital. By raising awareness about climate emotions and creating a space for students to express their emotions, teachers can help students to channel their emotions into meaningful actions.

During this five-month project we investigated the existing resources and approaches around this topic, talked to experts in the field and gained insights about the needs of the students. As it became clear, in general students show an interest in participating in workshops addressing climate emotions however their interest depends on the content or setting of the workshop. With this knowledge in hand, we performed multiple workshops in different settings. Based on our experience with the workshops, and the extensive qualitative research we have conducted, we designed a practical guide for teachers in the form of a website. The website will help teachers in addressing climate emotions during their classes by providing them with general knowledge about the issue, tested-out exercises, discussion questions and some tips. However, the problem does not end with providing a guideline for teachers. During our research, we learned about the resistance towards including emotions into education, and the practical challenges of doing so. Considering this, we do not naively claim that with our guide the problem is solved. We provide the guideline with keeping the challenges and resistance in education in mind. With our website, we hope to reach to teachers, educational institutions that are already interested in including climate emotions in education.

9.2. Challenges

- During our project we identified two main challenges in introducing climate emotions into education: resistance to include emotions, and teachers' unfamiliarity with addressing climate emotions.
- Resistance to include emotions includes problems like time limitations, rigid curricula, and differing views about the place of emotions in education.
- Unfamiliarity of teachers with climate emotions includes problems like unfamiliarity of teachers with addressing climate emotions.

During the project we noticed some challenges in introducing climate emotions into education. We have categorised these challenges in two categories: resistance towards including emotions into education and unfamiliarity of teachers with climate emotions.

Resistance towards including emotions into education category includes workload of teachers, and current educational structures. We noticed that it was difficult for teachers to include climate emotions into their teaching program because of time limitations. Often the curriculum is designed in advance, making it hard to make last minute changes. We were very grateful that we got the opportunity to arrange a workshop within Future Planet Studies. To get the point across to students we recommend taking at least an hour for the workshop which can be hard for teachers to make time for. Another reason for resistance coming from teachers, curriculum designers or program coordinators is the idea that soft skills such as dealing with emotions should be addressed outside of academia. The dominant worldview of academia and universities to be objective and only focus on the facts is outdated. In order to address climate emotions in the classroom bigger systems need to be changed. To get this system change started it is best to start with people that are already interested in emotional work. It is easier to involve them in this process than people that are very new to the topic of discussing emotions.

Unfamiliarity of teachers with climate emotions category includes the common problem that some teachers do not know how to address climate emotions in their classrooms. This could be because teachers are unfamiliar with the topic or unaware of their own emotions. This is why teachers should be informed about the topic and be provided with strategies to address the effect of the climate crisis on students.

9.3. Limitations of our research

- Small sample size
- No statistical analysis
- No previous experience with giving workshops

Our projects had a few limitations. First of all, we had very small sample sizes both within the surveys and the participants of the workshops. This is mostly due to time limitations and available resources. It was already hard to find a teacher that would be open to dedicating an hour of their lesson time to our workshop. We are therefore very grateful that we were able to do our workshop with Future Planet Students. Of course, we would have preferred to repeat the workshop with other groups, but with the constraints that were there we are already grateful to have been able to perform three workshops.

This also means that it did not make sense for this project to conduct a statistical analysis. If we had done a statistical analysis, the small sample size would have reduced the statistical power of the analysis, risking Type II errors that mean the failure of detecting a true effect. There would also be a risk of overgeneralization with a small sample size, the results cannot be generalized to the broader population. To avoid these complications, we decided to do a qualitative analysis, these methods were more suitable for the data that we collected and still provide valuable insights.

Another thing that might have had an impact on the project is that we had no previous experience with facilitating a workshop. Sometimes it was quite difficult to get a grip on the students' needs during the workshops that we gave them. The workshops might have given different results if an experienced teacher, or someone else with more authority, had given them. We did, however, learn a lot from the experience of hosting workshops. It also might have helped the students to connect with us because we are part of the target group.

Finally, we found that our workshop did not speak to everyone to the same extent. We might not have reached everyone. This means that we could improve the engagement of the workshop. It could be that this problem would already be solved if a professional teacher would give the workshop, but unfortunately, we could not test this assumption.

9.3.1. Biases

Working on this project also has its limitations related to diversity and inclusion. When designing our workshop, we did not take into consideration the possible cultural differences that could be underlying dealing with climate change and climate distress. However, climate change mostly affects marginalised groups that often contribute the least to climate change (Gepp et al., 2024). When discussing climate change and emotions it is important to keep in mind the experiences of different group and backgrounds, also within a classroom context.

The students on which we focussed during this project were all based at the University of Amsterdam which can be placed in a Western framework. Although the University of Amsterdam has international students with different cultural backgrounds, most students involved in this project were Dutch. The research that we performed was focussed on WEIRD people (Western, Educated, Industrialized, Rich, Democratic (Henrich et al., 2010)). This term is used in psychology and behavioural science highlighting the bias that research is mostly focused on this group of people, meaning that other groups often get excluded. The overrepresentation of this group within our project makes it difficult to make global generalizations. We are aware of this bias and recommend performing extensive research on the target group before addressing climate emotions in different contexts.

9.4. Implications

The workshop that we designed can be implemented in university programs within climate sciences. For this more research and trials are needed to get a better view on the needs of students.

To deal with emotions in other fields the workshop would need to be adjusted based on the needs of the target group. This can for example be the case for students that study in the fields of humanities and social sciences. Within these field emotions can arise on topics related to wars, abuse and other social inequalities. However, practical tips and elements of the workshop can be used as a baseline to create a workshop that fits different groups.

9.5. Future Directions

Regarding this project we think that this topic is highly important to be further investigated. The way in which this could be done is performing more workshops in different settings and contexts. For example, it would be interesting to try out the workshop with different age group, such as high school students, or different fields (e.g. humanities or social sciences).

We think that students and teachers from every context can benefit from talking about emotions, either regarding climate change or other societal issues. Currently, emotions in general are not discussed, both in education and society. We believe that it will help to look into how emotions can be more normalised, especially in education. If emotions become more normalised, it might be easier to discuss emotions that arise from societal topics, such as climate change. Normalising experiencing emotions in a classroom setting will benefit the mental health of students as well as providing solutions for complex societal challenges.

Additionally, there could be more attention to climate distress outside of education. As Marian Zandbergen stated there is a big gap between the climate distress of young people and the attention of mental health professionals. Within the field of psychology more research can be done on the existence of climate distress, the impact of these symptoms and how emotions in general relate to societal issues.

In this project we learned that it is hard to change academic structures. It may be hard to implement emotions in education because it requires a structural change to make emotions a part of education. We noticed this as well when writing this report. It was really hard to deviate from the academic structure. It is important to look more into how to overcome this rigidity and therefore look more into resistance. By learning more about the challenges and the reasoning behind the resistance, we can come up with solutions and compromises. In the end, we would like our tips and insights to be used, therefore addressing the resistance towards its use is essential.

We have found that we are truly interested in this topic and therefore we would like to work on this further in the future. We are currently unsure in what kind of format that will be, but we intend to dive more into the resistance at least.

9.6. Conclusions

In conclusion, we state that many students do not know how to channel their climate emotions into meaningful climate action and most of the teachers do not feel equipped enough to address their students' climate emotions and provide them with emotional resiliency. Additionally, including emotions into education is a new topic and therefore could bring resistance from some teachers, and curriculum designers. However, as highlighted by the CMP's Theory of Change, the development of inner resources is necessary to help people transition from despair to determination.

Students are considered a unique target group because their in-depth knowledge on climate change makes them more vulnerable to climate distress, and they have a critical view on societal structures. Because of this, it is important that they are helped to channel their climate emotions into meaningful actions. With our project, we hoped to create a baseline with activities and tips for teachers who are already interested in addressing climate emotions during their classes. More specifically, our findings can act as a baseline for the implementation of climate emotions into climate sciences in a university setting. We, as University of Amsterdam students, hope to continue working on this project by critically challenging the current structures in education.

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11. Appendix

Appendix 1: overview of current interventions

Reference	Type	Type 2	Age (children: 6-12, youth 12-18, students 18-24, adults 25+)	Duration of 1 activity	Group size	Note
Therapist Aid. (2012). <i>Where do I feel?</i> Therapist Aid. https://www.therapistaid.com/therapy-worksheet/where-do-i-feel	Art	Therapy	children			
Ivanaj, V., Poldner, K., & Shrivastava, P. (2014, June). Hand / heart / head: aesthetic practice pedagogy for deep sustainability learning. <i>The Journal of Corporate Citizenship</i> , (54), 23+. https://link-gale-com.proxy.uba.uva.nl/apps/doc/A376683056/ITOF?u=amst&sid=bookmark-ITOF&xid=32445b39	Art		adults	4-6 hours	20-40	
6seconds (n.d.). <i>POP-UP Festival handbook</i> . https://www.6seconds.org/wp-content/uploads/2023/08/HANDBOOK-POP-UP-Festival.pdf	Art		children			
CODAworx. (2019) <i>RisingEMOTIONS</i> . https://www.codaworx.com/projects/risingemotions/	Art			short	>150	
UBC Climate Hub. (z.d.). <i>Climate Doom to Messy Hope: Climate Healing and Resilience</i> . https://ubccclimatehub.ca/project/climate-doom-to-messy-hope-climate-healing-and-resilience/	Art		students	10-15 minutes	Classroom size	
<i>Connecting climate minds</i> . (n.d.). <i>Connecting Climate Minds</i> . https://www.connectingclimateminds.org/	Campaign					
UBC Climate Hub. (z.d.). <i>Climate Doom to Messy Hope: Climate Healing and Resilience</i> . https://ubccclimatehub.ca/project/climate-doom-to-messy-hope-climate-healing-and-resilience/	Check-in		students	10 minutes	Classroom size	
Climate café. (n.d.). <i>Climate Café</i> . https://climatecafe.nl/	Climate cafe		adults	1.5-2 hours	<20	
ThoughtBox Hub. (n.d.). <i>The Triple WellBeing® Community</i> . https://www.thoughtboxhub.com/	Community		multiple			
ThoughtBox Education. (n.d.). <i>Transforming Leadership</i> . https://thoughtboxeducation.com/leadership	Course		adults			
Universiteit Utrecht en Stichting Technotrend. (n.d.). <i>Didactiek van de Hoop</i> . https://storymaps.arcgis.com/stories/f5737dddaa284a2f92f349048b501130	Creative	Discussion	youth	4 days	Classroom size	
Universiteit Utrecht en Stichting Technotrend. (n.d.). <i>Didactiek van de Hoop</i> . https://storymaps.arcgis.com/stories/f5737dddaa284a2f92f349048b501130	Creative		youth	2 days	Classroom size	
Universiteit Utrecht en Stichting Technotrend. (n.d.). <i>Didactiek van de Hoop</i> . https://storymaps.arcgis.com/stories/f5737dddaa284a2f92f349048b501130	Creative		youth	3-4 days	Classroom size	
Manni, A., Sporre, K., & Ottander, C. (2017). Emotions and values—A case study of meaning-making in ESE. <i>Environmental Education Research</i> , 23(4), 451-464.	Curriculum		children/youth	6 weeks		
Olsen, E. K., Lawson, D. F., McClain, L. R., & Plummer, J. D. (2024). Heads, hearts, and hands: a systematic review of empirical studies about eco/climate anxiety and environmental education. <i>Environmental Education Research</i> , 1-28.	Curriculum		multiple	long	Unspecified	
Bellocchi, A., Ritchie, S. M., Tobin, K., King, D., Sandhu, M., & Henderson, S. (2014). Emotional climate and high quality learning experiences in science teacher education. <i>Journal Of Research in Science Teaching</i> , 51(10), 1301-1325. https://doi.org/10.1002/tea.21170	Curriculum		youth	10 weeks	Classroom	Class itself lasts 2 hours
Hunt, L. (2021). Ocean Literacy and youth—integrating a place based SDG 14 intervention into Irish Secondary School Curriculum. <i>International Journal of Technology and Inclusive Education</i> , 10(1), 1659-1666.	Curriculum		youth	6 days	67	Class itself last 40 minutes
Gibb, N. (2016). <i>Getting climate-ready: A guide for schools on climate action</i> . https://doi.org/10.54675/MOYX1103	Curriculum		children/youth			

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ThoughtBox Education. (n.d.). Triple WellBeing® Resources. ThoughtBox Education. https://thoughtboxeducation.com/resources	Curriculum		adults			
Muinin Catalyst Sustainable STEAM. (n.d.). Eco-Anxiety: Crisis to Connection. https://www.muinincatalyst.com/_files/ugd/79feea_52d03e7d59ed485db00af70deba4a049.pdf	Curriculum					
ThoughtBox Education. (2023, september). <i>The 'Changing Climates' curriculum</i> . Global Dimension. https://globaldimension.org.uk/resources/changing-climate-curriculum/#contents	Curriculum					
ThoughtBox Education. (n.d.). Triple WellBeing® Conversations. https://thoughtboxeducation.com/conversations	Discussion		children/youth			online
Harkness. (n.d.). Phillips Exeter Academy. https://www.exeter.edu/excellence/how-youll-learn	Discussion		youth			
Turner, L. (2023, 24 march). <i>How to Help Children with Climate Change Anxiety</i> . https://www.twinkl.nl/blog/how-to-help-children-with-climate-change-anxiety	Discussion		children			
Rodriguez-Tejedo, I., & Etayo, C. (2024). From Talk to Action: How Small Steps Can Make a Big Impact in Marketing Education for Climate Action. <i>Journal of Marketing Education</i> , 02734753241232326.	Discussion	Information	students	1.5 hours	Classroom size	
Marks, E., Atkins, E., & Abrams, J. F. (2023). Stories of hope created together: A pilot, school-based workshop for sharing eco-emotions and creating an actively hopeful vision of the future. <i>Frontiers in Psychology</i> , 13, 1076322.	Discussion	Video	youth	3 hours	6	
Kwok, R. (2019). Can climate change games boost public understanding?. <i>Proceedings of the National Academy of Sciences</i> , 116(16), 7602-7604.	Game		multiple	unspecified	Unspecified	
Van Apeldoorn, N. (2021, april 29). Serious gaming en hoger onderwijs - perspectivity. <i>Perspectivity</i> . https://perspectivity.org/nl/serious-gaming-en-hoger-onderwijs/	game		students			
Edgington, L. (n.d.). Psychological biases and barriers to climate change engagement: A guide for educators. https://www.climatedpsych.com/_files/ugd/304c16_fc0c031fbd1a4995be06db4408089539.pdf	Guide		adults			
Force of Nature. (n.d.). <i>Discussion Guide for Educators</i> . https://static1.squarespace.com/static/5ec405510f879d0420d5581d1/6284d04264bb4d64c482f0b0/1652871254443/Discussion+Guide+%2B+hyperlinksreduced.pdf	Guide		youth			
Burke, S. (2017). The Climate Change Empowerment Handbook: Psychological strategies to tackle climate change. https://psychology.org.au/getmedia/88ee1716-2604-44ce-b87a-ca0408dfaa12/climate-change-empowerment-handbook.pdf	Handbook		adults	unspecified	Unspecified	Psychological strategies to cope
Anxiety Canada. (n.d.). <i>Building Your Tolerance for Uncertainty: Act "As If"</i> . https://www.anxietycanada.com/articles/building-your-tolerance-for-uncertainty-act-as-if/	Journalling		multiple			
Brach, T. (n.d.). <i>RAIN: Recognize, allow, investigate, nurture</i> . https://www.tarabrach.com/rain/	Meditation		multiple			
<i>Growing Space</i> . (2024). https://growingpace.london/	Outdoor		children			
Woodland Trust (n.d.). <i>Outdoor learning Resources for Schools</i> . Woodland Trust. https://www.woodlandtrust.org.uk/support-us/act/your-school/resources/	Outdoor		children			
Universiteit Utrecht en Stichting Technotrend. (n.d.). Didactiek van de Hoop. ArcGIS StoryMaps. https://storymaps.arcgis.com/stories/f5737ddd4a284a2f92f349048b501130	Outdoor		youth	3 hours	Classroom size	
Sarrasin, O., Henry, J. L., Masserey, C., & Graff, F. (2022). The relationships between adolescents' climate anxiety, efficacy beliefs, group dynamics, and pro-environmental behavioral intentions after a group-based environmental education intervention. <i>Youth</i> , 2(3), 422-440.	Project design		youth	1.5 days		
Fridays for Future. (2024). https://fridaysforfuture.org/	Protest		youth			
<i>Children's Environmental Parliament</i> . (2023). Urbanwise London. https://urbanwise.london/projects/childrens-parliament/	Protest		children			

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The Harmony Project. (2024). https://www.theharmonyproject.org.uk/SEEd (n.d.). SEEd Young Changemakers Programme. SEEd. https://seed.org.uk/our-work/seed-young-changemakers/	Resources		children			
	Resources		youth			
Global Oneness Project. (2024). https://www.globalonenessproject.org/	Resources		children/youth			
Hickman, C. (2021). Mental Health and Climate Communication: Guidance on effective climate change communication with children. In GLOBE International. GLOBE International alsbl. http://www.londonsustainableschools.org/uploads/1/5/7/4/15747734/effective_climate_change_communication_with_children-june2021.pdf	Resources		children/youth			
Edgington, L. (n.d.). How to talk to children about climate change: Intergenerational engagement. In www.ClimateEdPsych.com (p. 1). https://www.climatepsych.com/_files/ugd/304c16_6e8266445efe448bb7a7230ea1491a01.pdf	Resources		children/youth			
Edgington, L. (n.d.). Managing Eco-Emotions: a guide for Educators. In www.ClimateEdPsych.com (p. 1). https://www.climatepsych.com/_files/ugd/304c16_6e8266445efe448bb7a7230ea1491a01.pdf	Resources		adults			
Woodland Trust (n.d.). Outdoor learning Resources for Schools . Woodland Trust. https://www.woodlandtrust.org.uk/support-us/act/your-school/resources/	Resources		children/adults			
Transform our world (n.d.). Transform Our World. https://www.transform-our-world.org/home	Resources		children/youth			
Climate psychology alliance. (2022, 29 augustus). Useful links. https://www.climatepsychologyalliance.org/index.php/component/content/article/useful-links?catid=13&Itemid=101	Resources					
Climate Cares Centre . (n.d.). Imperial College London. https://www.imperial.ac.uk/climate-cares/	Resources					
Climate Change Education Exchange. (n.d.). Environmental justice. https://www.climatechangeeducationexchange.org/home/environmental-justice	Resources					
Sustainability Curriculum Consortium. (n.d.). Resources . https://www.curriculumforsustainability.org/resources/	Resources					
Eden Project. (n.d.). Teaching resources . https://www.edenproject.com/learn/schools/teaching-resources	Resources		children			
Teachers for the Planet. (n.d.). 100 teacher-led climate change solutions . teachersfortheplanet.org . https://teachersfortheplanet.org/solutions/	Resources		children/youth			
Dartington Trust. (n.d.). Schumacher College - Higher Education at Dartington Trust. Higher Education At Dartington Trust. https://campus.dartington.org/schumacher-college/	School example		students			
Green School. (2020). https://www.greenschool.org/	School example		children/youth			
Black Mountains College. (2022). https://blackmountainscollege.uk/	School example		students			
United World Colleges. (2024). https://www.uwc.org/	School example					
Mind. (n.d.). 5 ways to wellbeing . https://www.mind.org.uk/workplace/mental-health-at-work/five-ways-to-wellbeing/	Step by step guide		multiple			
Ryan, K. (2016). Incorporating emotional geography into climate change research: A case study in Londonderry, Vermont, USA. <i>Emotion, Space and Society</i> , 19, 5-12.	Theatre	Discussion	adults	2 hours		18 Part of a 6 days workshop
Universiteit Utrecht en Stichting Technotrend. (n.d.). Didactiek van de Hoop. ArcGIS StoryMaps . https://storymaps.arcgis.com/stories/#5737dddaa284a2f92f349048b501130	Theatre	Discussion	youth	30 minutes	Classroom size	

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Appendix 1: overview of current interventions

Reference	Type	Type 2	Age (children: 6-12, youth 12-18, students 18-24, adults 25+)	Duration of 1 activity	Group size	Note
Dorion, K. (2009). Science through Drama: A multiple case exploration of the characteristics of drama activities used in secondary science lessons. <i>International Journal Of Science Education</i> , 31(16), 2247-2270. https://doi.org/10.1080/09500690802712699	Theatre		youth			Unspecified Multiple lessons
Haddaway, N. R., & Duggan, J. (2023). 'Safe spaces' and community building for climate scientists, exploring emotions through a case study. <i>Global Environmental Psychology</i> , 1, 1-23.	Therapy		adults	2 days		
Good Grief Network . (2024). 10-Step Program. Good Grief Network. https://www.goodgriefnetwork.org/10steps/	Therapy		adults	10 weeks		15 online
Met Nieuwe Ogen Kijken. (n.d.). <i>Voice Dialogue - Met nieuwe ogen kijken</i> . https://metnieuweogenkijken.nl/voice-dialogue/	Therapy		adults	hours-days		1
Met Nieuwe Ogen Kijken. (n.d.). <i>Het regiemodel - met nieuwe ogen kijken</i> . https://metnieuweogenkijken.nl/regiemodel/	Therapy		adults	2 hours		1
Met Nieuwe Ogen Kijken. (n.d.). <i>De dramadriehoek - Met Nieuwe Ogen Kijken</i> . https://metnieuweogenkijken.nl/de-dramadriehoek/	Therapy		adults	2 hours		1 to 10
Harris, E., Kang, P., Manango, J., & Melwani, N. (2023). <i>Fueling Change: Rethinking Education for Climate Justice in BC Schools</i> . https://ubccclimatehub.ca/wp-content/uploads/2023/12/Fueling-Change_-Rethinking-Education-for-Climate-Justice-in-BC-Schools-1.pdf	Toolkit					
Humanistisch Verbond. (n.d.). Actieve Hoop. https://www.humanistischverbond.nl/actieve-hoop/	workshop		adults	1 day		<20

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Appendix 2: student survey questions

How do you feel about climate change?

Hi, we are Carmen, Ilke and Vonne and we are working on a project about climate related emotions in education. For this we are looking for university students. Please help us by filling out this short survey.

Q2 Do you worry about climate change?

- Extremely worried
- Very worried
- Moderately worried
- Slightly worried
- Not at all worried

Within your study program, do you get educated on climate change?

- Yes
- No

Q3 Do you take climate action? Please explain

- Text entry

Q4 Do you think your university should include discussions about climate emotions* in their programs?

*All emotions related to climate change such as anger, worry, hope, anxiety

- Yes
- No
- Other:

Q5 If your university would organize an event related to climate change and emotions would you like to join?

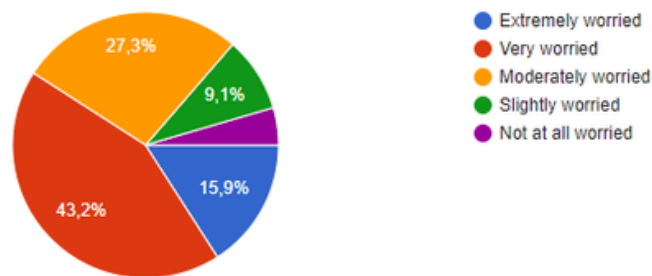
- Yes, definitely
- Depends on the content
- Maybe
- Not at all
- Other:

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Appendix 3: responses student survey

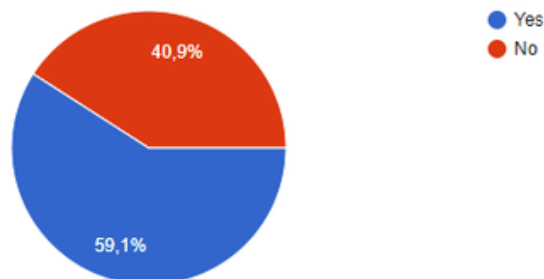
Do you worry about climate change?

44 antwoorden



Within your study program, do you get educated on climate change?

44 antwoorden



Do you take climate action? Please explain. 44 responses

- Eating less meat
- No
- Yes, ive been to climate protests and attended a shareholders meeting by Unilever with milieudefensie
- Not actively as in marches but I hope to 'help' through research and small personal impacts such as zero waste and not eating much meat
- I am trying to be more circular, but apart from that not really
- I do go to protest, get myself educated, talk about it with friends, share on social media, reduce my personal carbon emissions (at least I try to)
- I'm not sure, I think I do? Like trying to use less electricity and public transportation / riding bike. But I also do these things to save money.
- Stopped eating meat
- I volunteer in a climate organisation
- Ik zet niet onnodig de verwarming hoog aan
- Not really, I do eat less meat due to vegetarian roommates and friends
- Not really. I currently feel too busy and overwhelmed with other things to meaningfully take action.
- Went on strike, have solar panels, eat less meat, try to buy sustainable
- I sign petitions and try to live sustainably (thrift, buy seasonal vegetables, take public transport etc.)

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Appendix 3: responses student survey

Do you take climate action? Please explain. 44 Responses

- Yes, on a personal level, I have considerably reduced my meat consumption. Before my studies, I used to consume meat and fish daily, but now I limit my meat and fish consumption to a few meals (3-4) per week. Another way in which I take climate action is by engaging in discussions with my family and friends to explain why certain policy decisions are effective in addressing climate change, while others are not. I would really like to extend my climate action and be more active by participating in more protests, but finding the time for such activities is challenging.
- Follow instagram accounts, talking with friends, trying to have sustainable behaviour
- I have solar panels, cook vegetarian, and dont shower too long.
- Dont use single use plastics. Try to reduce the use of plastics in general, dont eat meat and dont drive a car.
- I vote with the climate in mind, eat a vegetarian diet, shop second hand for all clothes and some other items, and try to make choices decisions in mode of transportation
- No.
- I moderate certain behaviours which cause climate change
- Yes, I eat mostly vegan, dont fly, separate waste, try to waste as little food as possible, dont buy that much clothing
- I take my bicycle whenever the weather allows it, and when I drive a car I try to use as little fuel as possible.
- I take my bicycle when the weather allows it, and when I drive a car I try to use as little fuel as possible (Low RPM on engine)
- Limit the amount of new clothes. I try to buy used if I can
- eating vegetarian and vegan when and where possible, conscious about waste and recycling
- Just trying to make durable choices.
- I am vegetarian, try to consume less, work at a sustainable company and i am very aware on other things
- Cleaning up beaches and eating almost no meat
- Ov, zo vele mogelijk elektrisch ipv gas
- Reduce meat consumption, less flights and campaign for better legislation
- I try to produce as little waste as possible, but usually not when it's too inconvenient
- Within my house, we try to make consumer decisions that would contribute less to climate change
- Only in terms of travel and reuse. Meaning that I only take the train or bike unless it is impossible to do so, and I buy all my clothes and other products used or refurbished unless it is impossible to do so.
- I try and use energy wisely, as well as shop and eat involving less waste products
- Not really
- To be honest, I don't
- Not anymore in recent years in form of protest/demonstration, but would like to again. Now I'm just trying to live environmentally conscious (vegan, not flying etc)
- Vegan diet, alternative forms of transportation whenever possible (trains, instead of planes; bicycle/walk/public transport instead of cars), reject fast-fashion (mainly shop at thrift stores), protest govt. (in)action
- Yes; I try to live a low consumption lifestyle
- Yes, I help educate others, I vote green, I shop secondhand, I eat less meat
- Voting and reducing meat consumption

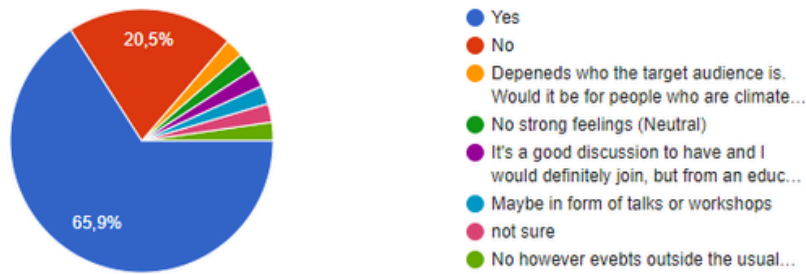
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Appendix 3: responses student survey

Do you think your university should include discussions about climate emotions* in their programs?

*All emotions related to climate change such as anger, worry, hope, anxiety

44 antwoorden



If your university would organize an event related to climate change and emotions would you like to join?

44 antwoorden



11. Appendix

Appendix 4: Pre-survey Future Planet Studies questions

Q1 Dear participant,

We are Ilke, Carmen and Vonne. We are conducting research on the topic of climate distress in climate education. Climate distress is an umbrella term for all the negative emotions that relate to climate change. This study is part of the MSc minor Collective Futures. It is important that you understand the procedure of this research. Therefore, please read the following text carefully.

Instructions:

In this survey you are asked to fill out some questions. The questions all relate to your personal experiences of climate distress within climate education, both negative and positive. Filling out the survey will take approximately 10 minutes.

Voluntariness:

Taking part in this research is entirely voluntary. All information will be treated confidentially. You can stop filling out the questionnaires at any moment, without giving a reason.

Discomfort, risks, and insurance:

No special insurance applies as we do not expect any discomfort or risks for the participants of this survey. However, some questions in this survey are related to sensitive topics such as emotions. If you experience any severe symptoms of climate distress such as depression or anxiety we advise you to get in contact with your GP or the student psychologist to get professional support.

Confidentiality:

The data from this research will be used for scientific analysis. No personally identifying information will be used for this, and your anonymity is fully guaranteed. In the final question, it is asked if you want to leave your email address. If you decide to put your email there, your anonymity cannot be guaranteed anymore, but we will leave out any personal details in the sharing of the data.

Further information:

For further information, remarks or complains about this survey, you can contact us via email: vonne.smit@student.uva.nl, or our supervisor j.kroese@uva.nl.

By confirming the four statements below you declare to have read and understood the above information. Additionally, you declare to agree with the procedure as described above.

1. I am older than 16 years of age.
2. I have read and understood the above information.
3. I agree to participate in this survey and to the use of the data obtained with it.
4. I keep the rights to stop filling out the survey at any moment I wish to.

Q2 What is your gender identity?

- Female
- Male
- Non binary
- Rather not say
- Other: _____

Q3 How old are you?

Q4 What is the name of your study program?

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Appendix 4: Pre-survey Future Planet Studies questions

Q5 Please rate how much you agree or disagree with the following statements. We'd like to state again that it's important that you are honest about this and don't fill in what you think we would like to hear.

Q6 I believe the climate is changing

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q7 I care about the natural environment

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q8 I believe that climate change is mainly caused by human activities

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q9 I consider myself an environmentalist, meaning that I care about the environment

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q10 I engage in sustainable behaviour, such as recycling, eating vegan/vegetarian, reducing waste

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q11 Please indicate in the image below which illustration best represents your vision on yourself and nature. These images are a representation of your connectedness with nature (Schultz, 2002).

- A
- B
- C
- D
- E
- F
- G

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Appendix 4: Pre-survey Future Planet Studies questions

Q12 We would now like to ask some questions about climate related emotions. For this, take a few moments to think about how climate change makes you feel. You can think about events that happened because of climate change, climate actions you have taken, information about climate change or anything else related to climate change.

Q13 Please indicate which emotions/feelings you experience when thinking about climate change on a scale from 0 to 5. 0 meaning having no feelings, 5 experiencing this emotion intensely.

Worry ()

Joy ()

Anger ()

Sadness ()

Hope ()

Guilt ()

Shame ()

Pride ()

Ignorance ()

Optimistic ()

Disappointed ()

Excited ()

Powerless ()

Empowered ()

Anxiety ()

Q14 The following questions will be about the feelings and emotions you may experience about climate change.

Q15 I feel like if everyone cared about the climate, environmental issues would be solved

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q16 I worry that my decisions (e.g., driving, eating meat, traveling by plane) in daily life will result in something harmful to the environment

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q17 I feel like I can make sustainable choices if I want to

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

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Appendix 4: Pre-survey Future Planet Studies questions

Q18 It makes me angry that many people fail to do even the most basic things to protect the environment

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q19 I have a negative perspective on the future of the planet because of climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q20 I feel like my environmental action are meaningful and help the environment

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q21 I am so anxious about climate change that it affects my performance at school/work

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q22 I feel like we, as a group of students, can make sustainable choices if we want to

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q23 I feel guilty for not paying enough attention to the issue of climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q24 I try not to focus on the negative effects of climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

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Appendix 4: Pre-survey Future Planet Studies questions

Q25 By making environmentally friendly adjustments in my life, I feel like I can minimize the effects of climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q26 I feel like we, as a group of students, can minimize the effects of climate change through our actions

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q27 I worry about all the harm that will likely be done as a result of climate change.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q28 The following questions are related to addressing climate related emotion and coping mechanisms in an educational setting. With this we mean all emotions that are associated with climate change and how/ if they are mentioned in climate education. Coping can be defined as behaviours and thoughts used to manage internal and external stressful situations (Algorani & Gupta, 2023).

Q29 I feel there is enough attention paid in my study program to the emotions that I experience when thinking about climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q30 I feel like there are not enough coping mechanisms provided within my study to deal with emotions related to climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q31 I am taught within my educational program about which climate actions are meaningful

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

11. Appendix

Appendix 4: Pre-survey Future Planet Studies questions

Q32 I don't feel stimulated within my study program to get involved in more sustainable actions, such as recycling, eating less meat or energy reduction

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q33 I find it important that emotions are discussed in climate education

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q34 What would you like to change in climate change education? This can be an example, something that you feel is missing, something that you experienced that you want more of, or anything else.

Q18 Are there any remarks left?

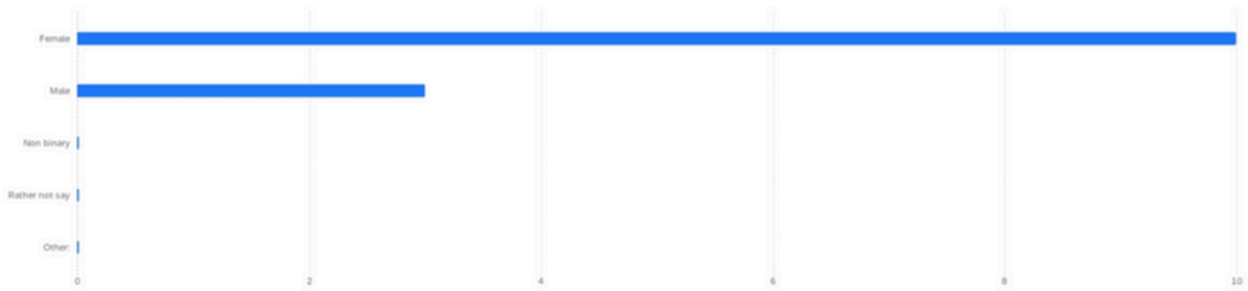
Q19 We are looking for people that we could interview about this topic. If you are interested please leave your email below.

Appendix 5: Results of pre-survey

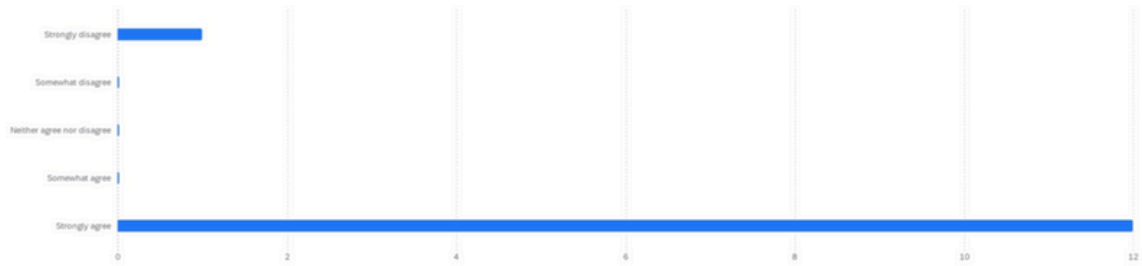
Dear participant, We are Ilke, Carmen and Vonne. We are conducting research on the topic of climate distress in climate education. Climate distress is an umbrella term for all the negative emotions that relate to climate change. This study is part of the MSc minor Collective Futures. It is important that you understand the procedure of this research. Therefore, please read the following text carefully. Instructions: In this survey you are asked to fill out some questions. The questions are related to the experience of climate distress within climate education. All questions relate to your personal experiences, both negative and positive. Filling out the survey will take approximately 5 to 10 minutes. Voluntary: Taking part in this research is voluntary. All information will be treated confidentially. You can stop filling out the questionnaires at any moment, without giving a reason. Discomfort, risks, and insurance: No special insurance applies as we do not expect any discomfort or risks for the participants of this survey. However, some questions in this survey are related to sensitive topics such as emotions. If you experience any severe symptoms of climate distress such as depression or anxiety we advise you to get in contact with your GP or the student psychologist to get professional support. Confidentiality: The data from this research will be used for scientific analysis. No personal information will be used for this, and your anonymity is fully guaranteed. Further information: For further information, remarks or complains about this survey, you can contact us via email: vonne.smit@student.uva.nl By confirming the four statements below you declare to have read and understood the above information. Additionally, you declare to agree with the procedure as described above. 15



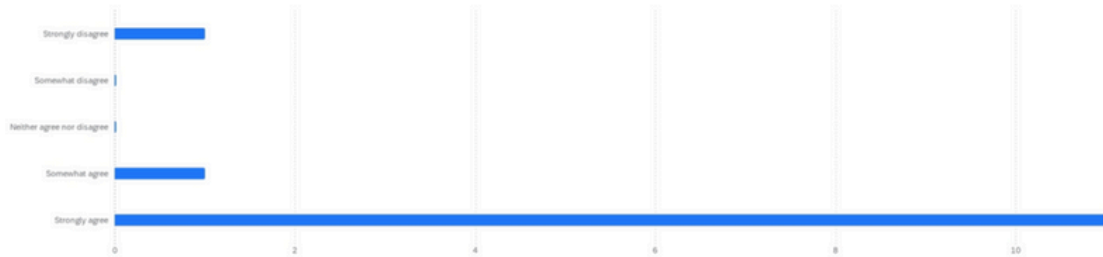
What is your gender identity? 13



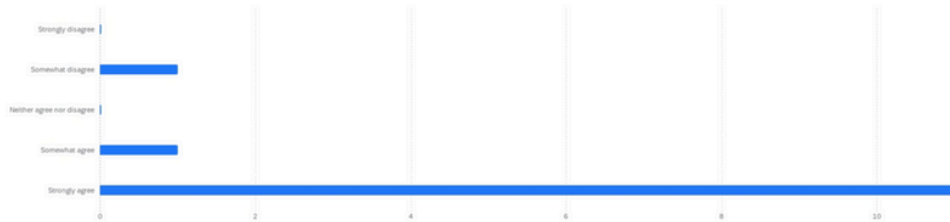
I believe the climate is changing 13



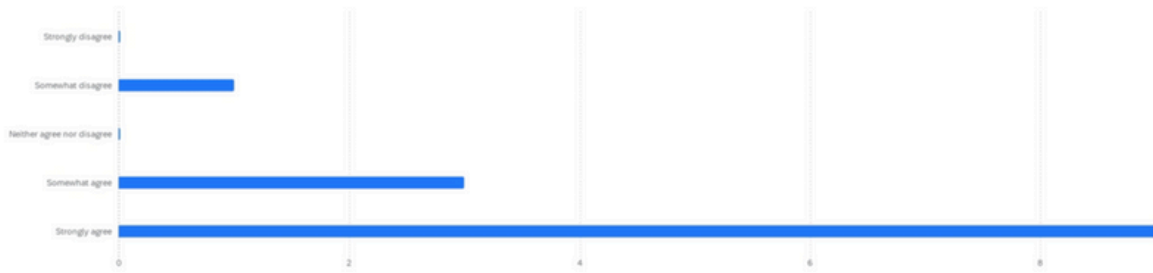
I care about the natural environment 13



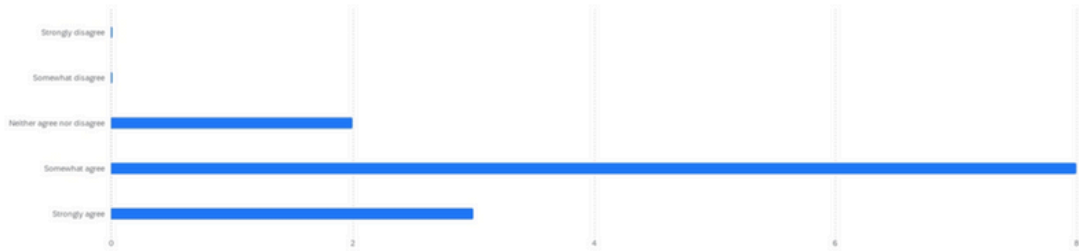
I believe that climate change is mainly caused by human activities 13



I consider myself an environmentalist 33

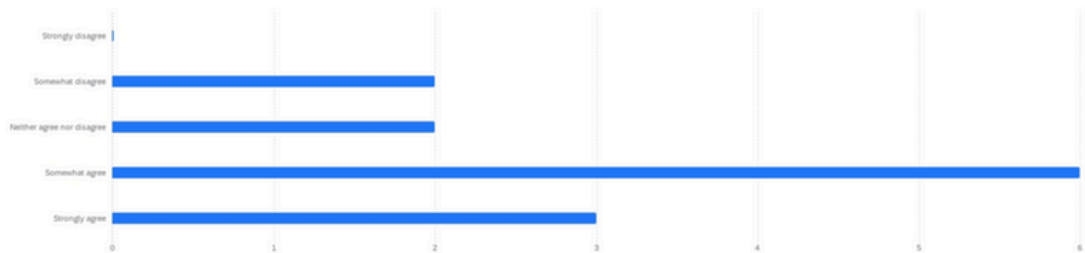


I don't feel connected to nature 33

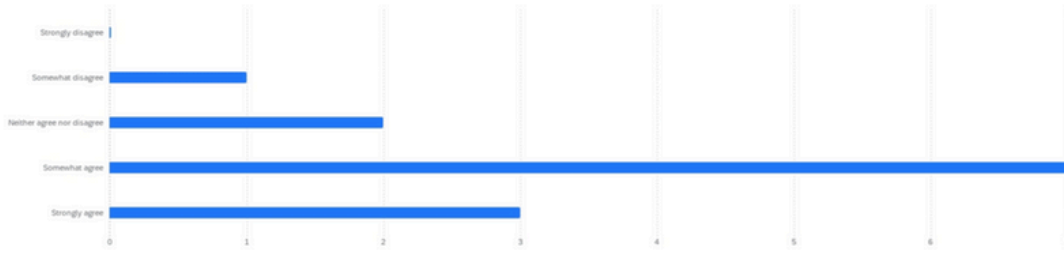


Please indicate which emotions/feelings you experience when thinking about...		Average
Worry		3.58
Optimistic		1.41
Disappointed		3.05
Excited		0.92
Powerless		2.46
Empowered		1.45
Anxiety		2.28
Joy		0.26
Anger		2.85
Sadness		3.29
Hope		2.12
Guilt		2.33
Shame		1.72
Pride		0.78
Ignorance		1.02

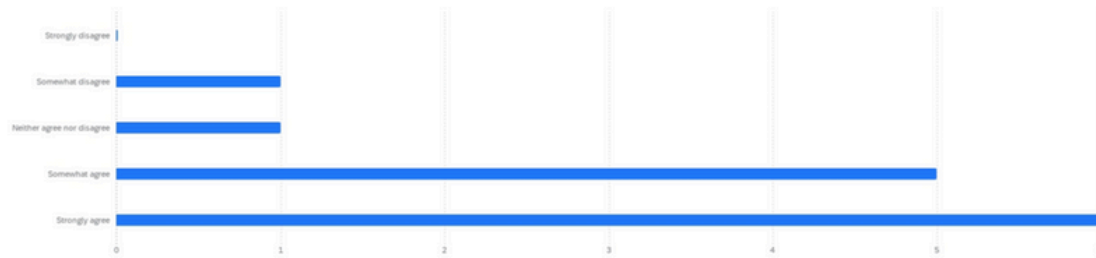
I feel like if everyone cared about the climate, environmental issues would be solved 33



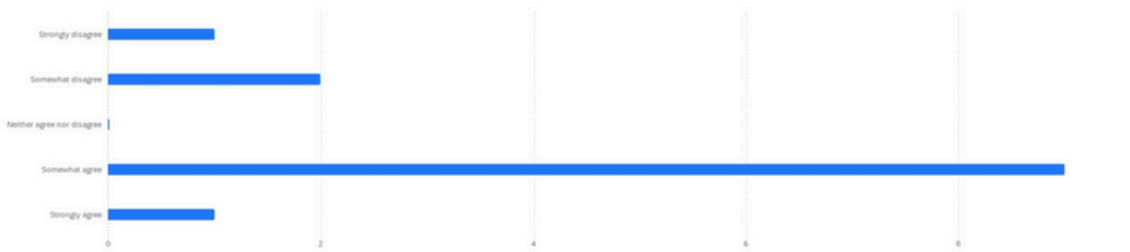
I worry that my decisions will result in something harmful to the environment 13



It makes me angry that many people fail to do even the most basic things to protect the environment 13



I have a negative perspective on the future of the planet because of climate change 13



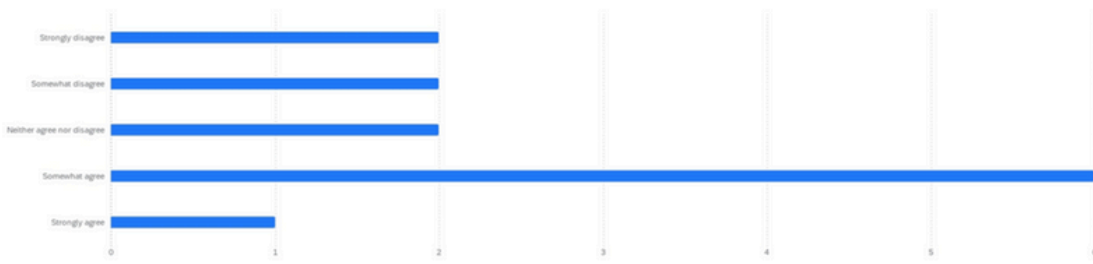
I feel like my environmental action are meaningful and help the environment 13



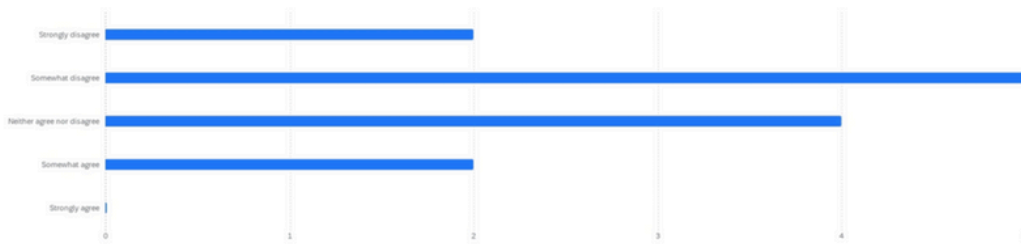
I am so anxious about climate change that it affects my performance at schoolwork 13



I feel guilty for not paying enough attention to the issue of climate change 13



I try not to focus on the negative effects of climate change 13



11. Appendix

Appendix 6: Post-survey Future Planet Studies questions

Q1 Please rate how much you agree or disagree with the following statements about the workshop. We'd like to state again that it's important that you are honest about this and don't fill in what you think we would like to hear.

Q2 It was uncomfortable to think about my climate emotions during the workshop

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q3 Getting to know that other people also experience emotions related to climate change made me feel less alone

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q4 I enjoyed learning about emotions related to climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q5 After the workshop I am more confident that my climate actions matter

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q6 Sharing my climate emotions with my classmates made me feel more connected with them

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q7 After the workshop, I will allow myself to not always make the most sustainable choices

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

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Appendix 6: Post-survey Future Planet Studies questions

Q8 After the workshop, I have become more aware of my climate-related emotions

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q9 After the workshop I feel more empowered to take climate actions

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q10 I think the workshop was unnecessary

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q11 It was uncomfortable to share my emotions with my classmates during the workshop

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q12 After the workshop the intensity of my climate emotions decreased

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Q13 I would like more opportunity within my education to talk about my emotions related to climate change

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

11. Appendix

Appendix 6: Post-survey Future Planet Studies questions

Q18 The following statements are about awareness. Please indicate for the following statements if you have thought about it before

Q19 It is okay to not live sustainably all the time

- I have thought about this before
- I have thought about this before, but also learned something new
- I have never thought about this before the workshop
- I disagree with the statement

Q20 Having emotional reactions to climate change is normal

- I have thought about this before
- I have thought about this before, but also learned something new
- I have never thought about this before the workshop
- I disagree with the statement

Q21 Having climate-related emotions is useful

- I have thought about this before
- I have thought about this before, but also learned something new
- I have never thought about this before the workshop
- I disagree with the statement

Q22 I know which climate actions I can and cannot take

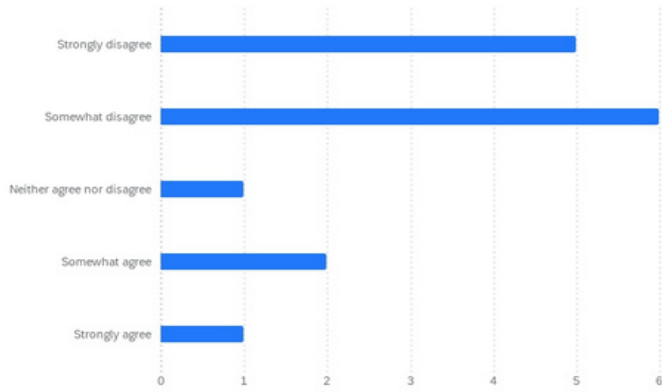
- I have thought about this before
- I have thought about this before, but also learned something new
- I have never thought about this before the workshop
- I disagree with the statement

The rest of the survey is a repeat of the pre-survey

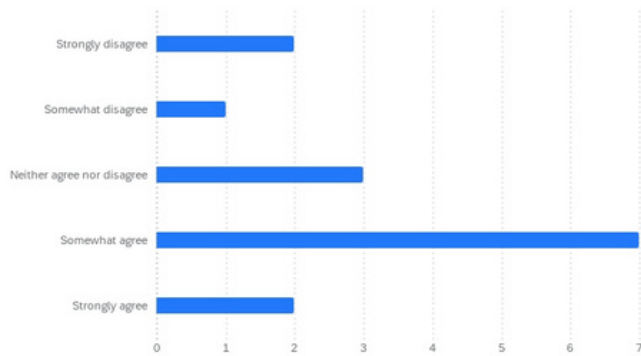
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Appendix 7: Results student Future Planet Studies

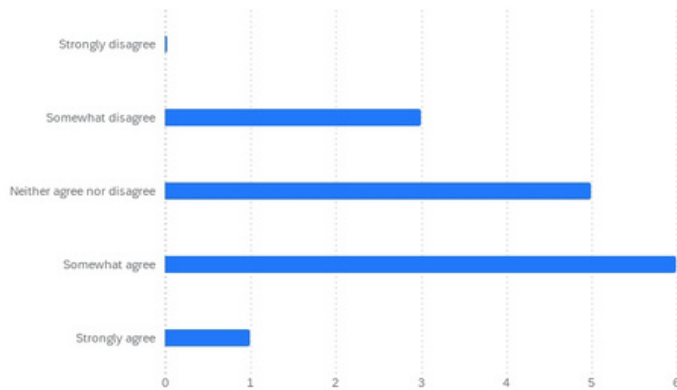
It was uncomfortable to think about my climate emotions during the workshop 15 ⓘ



Getting to know that other people also experience emotions related to climate change made me feel less alone 15 ⓘ



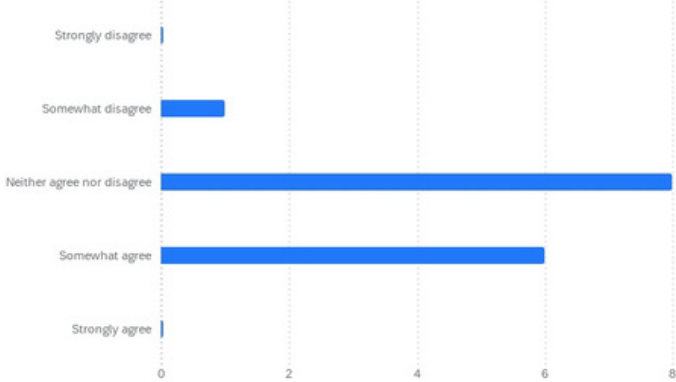
I enjoyed learning about emotions related to climate change 15 ⓘ



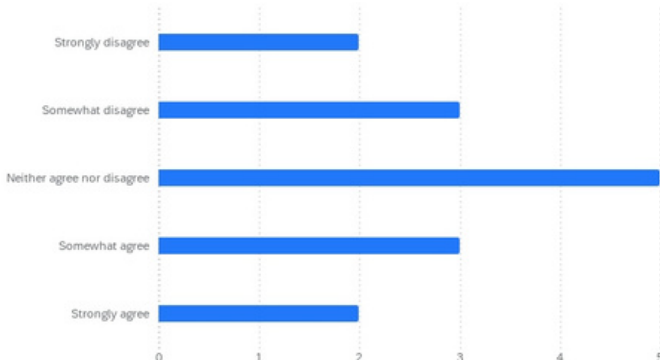
11. Appendix

Appendix 7: Results student Future Planet Studies

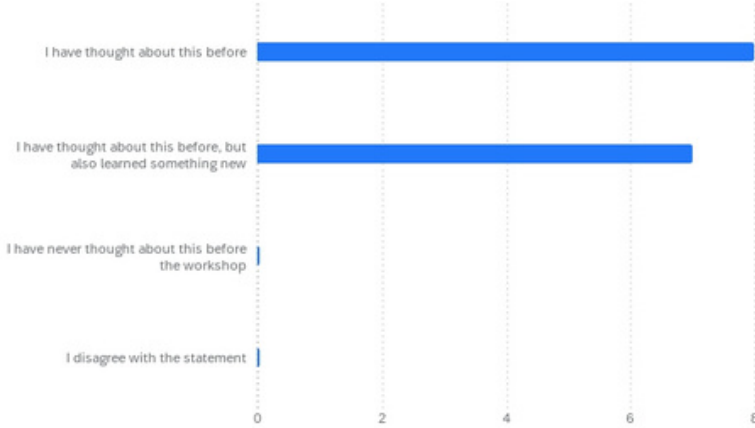
After the workshop I am more confident that my climate actions matter 15 ⓘ



Sharing my climate emotions with my classmates made me feel more connected with them 15 ⓘ



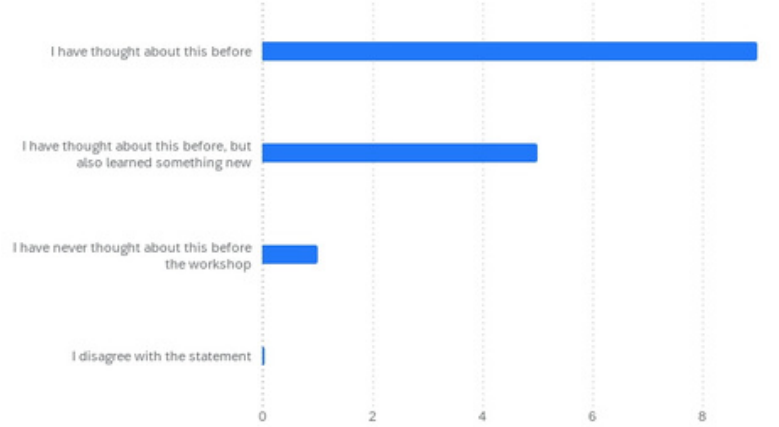
It is okay to not live sustainably all the time 15 ⓘ



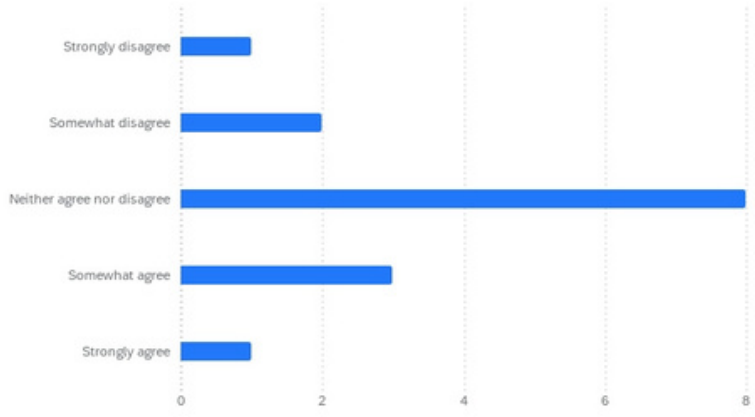
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Appendix 7: Results student Future Planet Studies

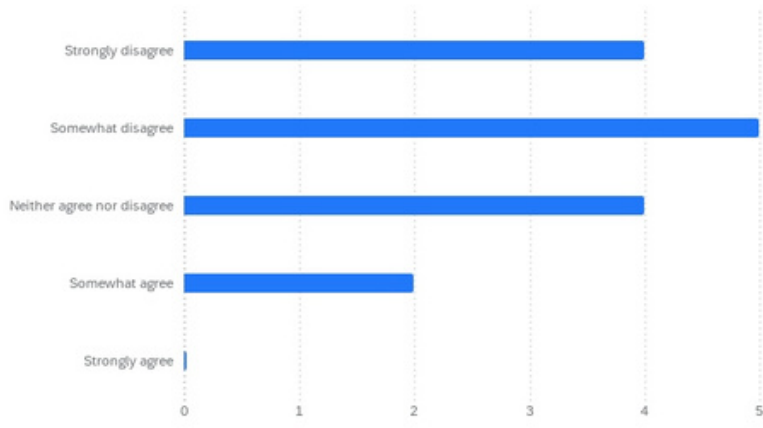
Having emotional reactions to climate change is normal 15 ⓘ



I would like more opportunity within my education to talk about my emotions related to climate change 15 ⓘ



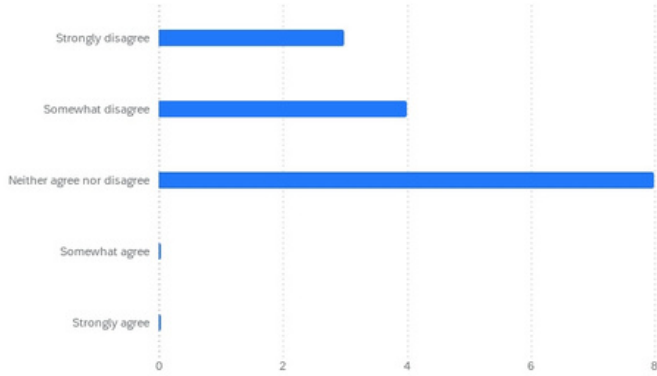
It was uncomfortable to share my emotions with my classmates during the workshop 15 ⓘ



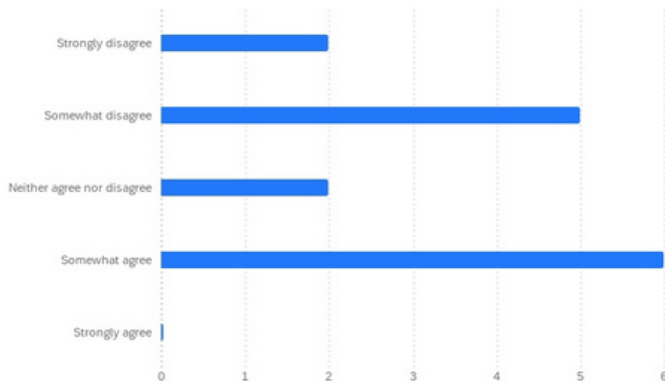
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Appendix 7: Results student Future Planet Studies

After the workshop the intensity of my climate emotions decreased 15 ⓘ

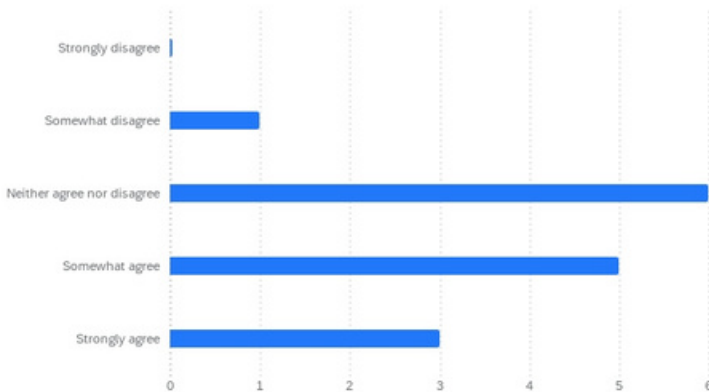


I think the workshop was unnecessary 15 ⓘ



After the workshop, I will allow myself to not always make the most sustainable choices

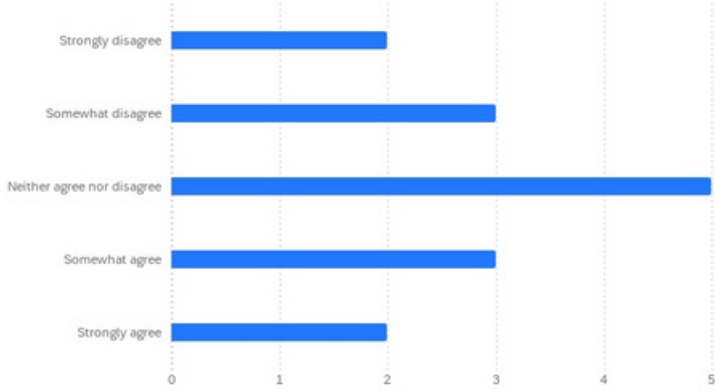
15 ⓘ



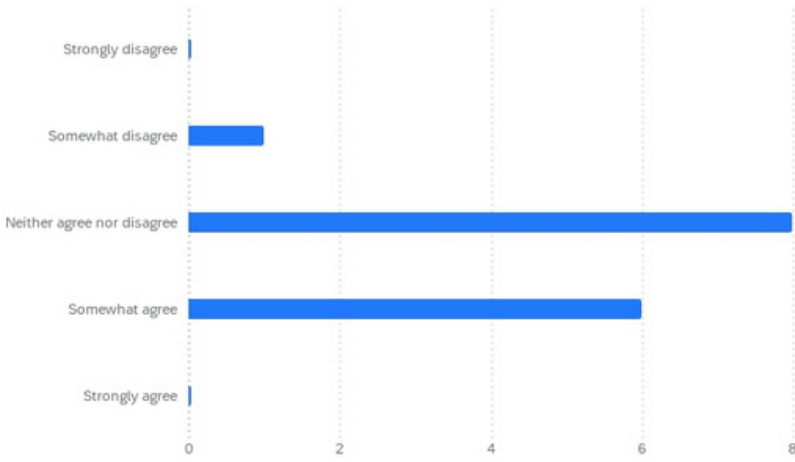
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Appendix 7: Results student Future Planet Studies

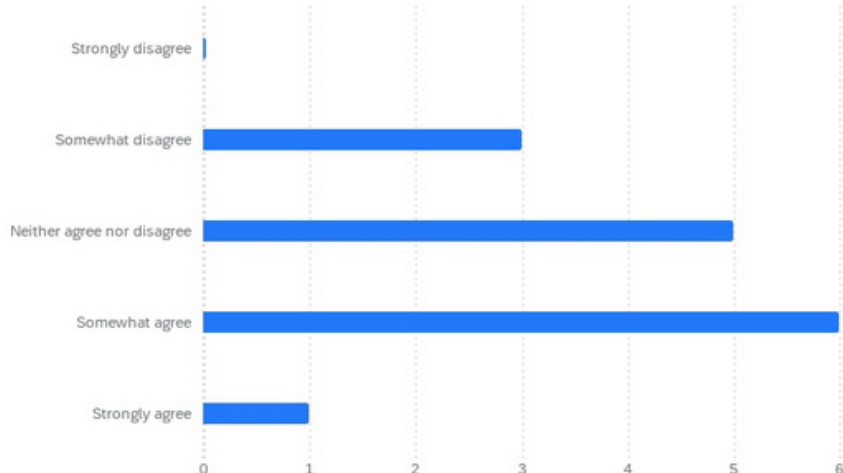
Sharing my climate emotions with my classmates made me feel more connected with them 15 ⓘ



After the workshop I am more confident that my climate actions matter 15 ⓘ



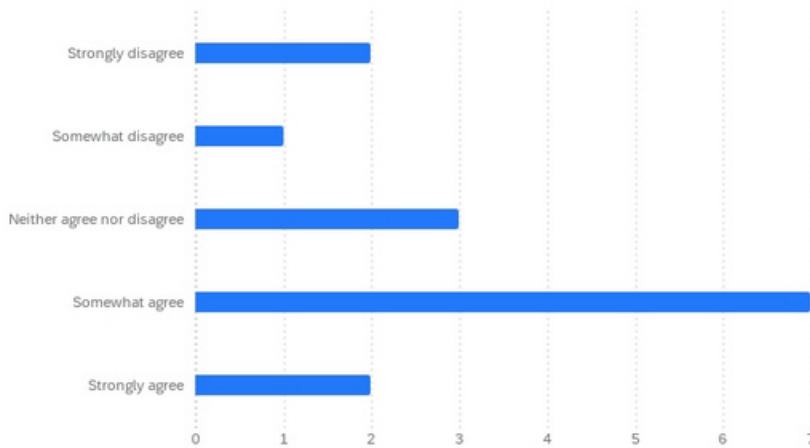
I enjoyed learning about emotions related to climate change 15 ⓘ



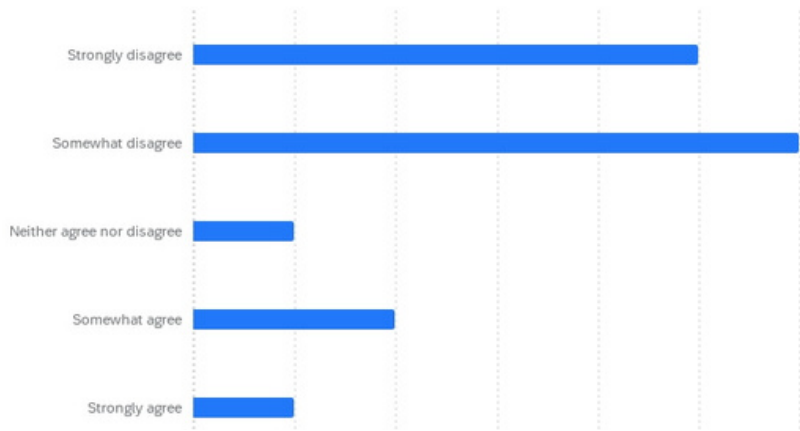
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Appendix 7: Results student Future Planet Studies

Getting to know that other people also experience emotions related to climate change made me feel less alone 15 ⓘ



It was uncomfortable to think about my climate emotions during the workshop 15 ⓘ



Having climate-related emotions is useful 15 ⓘ

