The Climate Fresk Workshop

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The Climate Fresk workshop is well designed and uses many different best practices of education. As a facilitator, you can create the best possible experience by following common advice for educators. For example, get the participants' attention, create a welcoming and safe environment, consider the emotional side of the topic, and make the content personally relevant (Goodwin, 2018).

Emotions

Facilitators should create a safe space for open and honest conversation by reminding participants that feeling intense emotions related to these issues is normal, and that they are not alone. You can make participants feel more comfortable by sharing your own emotional journey - good communicators tell personal stories and are emotionally honest (Marshall, 2014). Just remember not to talk too much and keep the discussion participant-centric.

Discussing emotions is an important part of communicating climate change, and it is often overlooked. Research in psychology and communication has shown that emotions are vital in many aspects of behaviour including: motivating action, shaping decision making, supporting political policy, and reducing perceived distance of an event or problem (Filho et al., 2018). In the past, climate change communication has mostly targeted the rational side of people, while overlooking or ignoring emotional aspects (Marshall, 2014). Past climate change communication has focused too much on guilt, blame, and fear-based messaging which have proven to be ineffective in motivating action (Marshall, 2014). As a facilitator you should break climate change free of these counter-productive framings. Appeals to emotions such as hope, pride, and gratitude have been shown to be more effective, while simultaneously increasing well-being (Filho et al., 2018).

Common Emotions

The most common emotions participants describe are varying degrees of despair or hopelessness, fear, curiosity, anger, hope, and desire for cooperation. As a facilitator it is useful to have background knowledge about each emotion in order to properly support the participants and motivate action.

Despair or Hopelessness

Beyond being physically uncomfortable, hopelessness has also shown to inhibit action, and motivate both wilful ignorance, and the rationalization of inaction (Petersen & Barnes, 2020; Filho et al., 2018). In short, people who feel hopeless about climate change are far less likely to take action. In order to mitigate negative feelings such as despair, try to inspire hope in participants by reminding them of past challenges humanity has overcome, such as landing on the moon, or eradicating certain diseases – to demonstrate that humanity is capable of solving the climate and ecological crises. Highlighting personal agency is also crucial in mitigating despair, and it primes participants for the solutions phase. Everyone can have an impact. Also, reminding participants that climate change is not a binary issue that is either solved or unsolved. It is incremental, and as a result every unit of progress has a positive impact.

Anger

While anger is considered a negative emotion, it can be a powerful force for motivation. Anger can inspire people to seek more information and take concrete action (Filho et al., 2018). In order to console participants and support their mental health, highlight the benefits of anger as a motivating force while suggesting that they can shift anger into enthusiasm, which is a healthier and more sustainable emotion.

Fear

Considering the scale of the climate and ecological crises, fear is a common and understandable (if uncomfortable) emotional reaction. However, research has shown that fear is generally counter-productive to motivating action. More often than not, fear and anxiety lead to avoidant behaviours such as willful ignorance or denial (Filho et al., 2018). In some cases, fear can motivate behavioural change, but it requires that people also have the following: a sense of being personally vulnerable, the awareness and ability to use easy solutions to solve the problem, and social support (Filho et al., 2018). The workshop can provide all three of these aspects to a certain degree. However, as a facilitator you should avoid purposefully inspiring fear in your audience, because it is a risky strategy that can make participants uncomfortable. At the same time, this does not mean you should shy away from the truth about the gravity of the situation.

Worry or Concern

Similar to the shift from anger to enthusiasm, participants who feel fear can be guided to the healthier and more productive feelings of worry or concern. Worry has shown to be a greater motivator for supporting political climate action compared to fear (Filho et al., 2018). While fear is associated with short-term problems, worry is related to long-term problem-solving which is better suited to climate action (Filho et al., 2018). Of course, there is a fine line between worry and fear. As a facilitator you can use hope and personal agency to shift feelings of fear towards worry or concern.

Hope and personal agency

As previously mentioned, feelings of hope and personal agency are important in motivating climate action while promoting well-being. Hope has been shown to increase the likelihood of supporting climate policies, and changing beliefs and behaviours in order to solve climate change (Filho et al., 2018). Hope and agency can also counteract painful and debilitating emotions such as fear and despair. As a result, facilitators should try to inspire feelings of hope for a better world and the belief in their ability to help solve climate change. There are many ways one can do this. For one, you can give examples of people and groups that have had an important impact on mitigating climate

change (such as politicians like Joe Biden, or activists like Greta Thunberg, Fridays for Future, Extinction Rebellion, or the Sunrise Movement). Remind participants that we already have the solutions to climate change, and everyone can play a role in making them happen. Citing Project Drawdown, which has calculated how to achieve global carbon-neutrality using existing solutions, can be useful evidence for this claim (https://www.drawdown.org/solutions). This link should be included in your post-workshop email. You can use this hopeful message of personal agency at the end of the emotions phase in order to pique participants' interest in the solutions phase.

Keep in mind that emotions are complicated and everyone is experiencing different emotional journeys surrounding the climate and ecological crises. The above advice is not meant to be applied the same way with every person, but rather as general background information. Above all, do not criticize the emotions of others and do not force others to change how they feel. Be supportive and helpful using your best judgment.

Solutions

Most people see climate change as a threat, yet they feel isolated and powerless to solve it (Marshall, 2014). One survey of university students in Arizona found a widespread desire to take action to solve environmental issues, but very little awareness of opportunities to do so (Petersen & Barnes, 2020). This is why the solutions phase is so important - people need more information about the solutions to climate change and how they can personally play a role. In the solutions phase, it can be useful to continue the framing from the emotions phase - one that encourages hope and highlights personal agency.

As a facilitator, try to create a conversation where participants envision a better future where climate action has both solved the crisis and improved the quality of life in other ways. Begin by sharing the idea that climate action almost always solves more than one problem at once. Then, ask participants to choose a solution that they find particularly interesting or effective, and ask them (and other participants) to name

co-benefits of their solution. Research in behavioural psychology has shown that people are more likely to take action (including making personal sacrifices) if they explain the long term benefits in their own words (Marshall, 2014). This exercise often creates interesting and passionate conversations. For example, some of the co-benefits of active-transit (biking, walking, etc.) include: improved health through exercise and reduced air pollution, avoided cost of other transportation methods, increased happiness, and potential social connection (Kundzewicz et al., 2020).

You may conclude the workshop by asking participants to describe an action that they will take to help solve climate change. It is useful to allow participants to decide for themselves what kind of action they will take, unless they ask for advice. People feel better about achieving their goals and are more likely to sustain behaviour when their goals are framed in a manner that feels naturally comfortable to them (Center, 2009). For the same reason, pre-made solutions should be less prevalent than a space where participants are invited to write their own solution.

When discussing co-benefits, there is one psychological quirk which might be useful to consider. It is called "future discounting" and it refers to the trend that people usually prioritize avoiding future loss rather than seeking future gain (Center, 2009). As a result, it might be useful to mention co-benefits that avoid future loss too. For example, EVs or building retrofits could be framed as avoiding spending money on increasing fuel cost (rather than framing it as saving money) (Center, 2009). This is especially relevant in Canada where the carbon price will steadily increase in coming years.

Besides co-benefits, it is useful to mention the diversity of potential climate action, and how this means that people can find a role to play no matter what their skills and interests are. Everyone has a role to play in solving climate change while working towards a healthier, happier, safer, more just world. At the same time, facilitators should mention that climate change will not be solved without cooperation - collective action and political changes are essential to success. A potential discussion is how to scale up

the solutions that interest participants - for example, political activism in support of bike infrastructure for someone interested in active transit, community gardens for someone interested in local food, or activism to make businesses create products that are easily repairable for someone interested in reducing consumption.

Finally, in keeping with the themes of hope and personal agency, facilitators can highlight the fact that climate change isn't an issue that is either completely solved or not at all. Every bit of progress is important, and the more ambitious we are, the fewer consequences we will face. We should never stop fighting for ambitious climate action.

Section 2: Relevant Research

Climate change has been recognized as a wicked problem, with many interconnected causes and effects (Pollitt, 2016). To deal with this wicked problem, people need to be educated, become mobilized and begin implementing solutions. The complex nature of climate change can make the topic overwhelming and has proven to be challenging to communicate to the general public. The public tends to lack knowledge about the causes and effects of climate change (Kundzewicz et al., 2020), which the Climate Fresk is trying to address through an interactive workshop that implements the best practices of pedagogy, psychology and climate change communication.

Group Learning

To effectively communicate climate change, group learning has proved successful as individuals are able to gain and share knowledge with each other. As people exchange ideas, they can discuss both emotional and analytical aspects of climate change (Center, 2009). A group setting can lead to an increased amount of time spent implementing solutions and has been shown to raise individual knowledge of social supports (Center, 2009). The Climate Fresk implements group learning throughout the workshop as participants work together to figure out the cause and effect of each card, before discussing their emotions and possible solutions.

Informal Learning

Using an informal learning environment allows participants to introduce their own knowledge alongside the information given in the workshop (Wibeck, 2014). Providing a casual learning environment can make it easier for the public to engage with climate change by discussing with other participants or the facilitator if confusion occurs. While formal learning has been an effective communication tool for students (Wibeck, 2014), informal learning environments are accessible to a wider audience. The informal learning environment provided by the Climate Fresk makes it easier for individuals with all levels of knowledge to participate and become engaged in the workshop.

Other Relevant Learning Techniques

Kinesthetic learning gives people an opportunity to interact and collaboratively come up with their own solutions. It has been shown that kinesthetic learning can improve individuals' knowledge as it forces them to work together and apply their own knowledge to the activity (Mobley, 2014). The Climate Fresk implements kinesthetic learning as it provides participants an opportunity to discuss their ideas and collaboratively come up with solutions. Information is also provided in visual and text formats during the workshop, further increasing the variety of kinds of learning styles which are used.

Active learning provides students with the chance to control the learning process while the educator facilitates the learning rather than directly teaching students with formal learning methods (Davidson, 2020, Morris, 2016). The Climate Fresk employs active learning throughout the workshop to get participants involved in further discussion about their ideas and possible solutions.

Experiential learning gets individuals to learn by doing and incorporate their personal experience into their understanding of the issue. It has been found that experiential learning is a good motivator to encourage people to take action, but is often left out of climate change communication (Center, 2009). To incorporate experiential learning, climate change imagery such as videos, metaphors and personal accounts can be used to create an emotional response among participants (Center, 2009). The Climate Fresk provides the opportunity for experiential learning as participants learn by moving and connecting the cards themselves.

Learner-centered education offers students ownership of their knowledge and allows them to add new information to their current understanding of the topic. The Climate Fresk does this by providing participants an opportunity to use the knowledge gained in the workshop, along with their previous knowledge to come up with actions they can take.

Active learning, which is based on constructivism, highlights the role students have in facilitating their own understanding and allows them to incorporate their previous knowledge with the new information provided. The aim of active learning is to further people's knowledge rather than getting people to memorize facts, which is critical for successful problem solving. Active learning is central to the Climate Fresk. Overall, the Climate Fresk workshop combined many innovative pedagogical techniques, which demonstrate its effectiveness at educating the public.

Serious Games

As the field of climate change communication has developed, "serious games" have emerged as a method that is more entertaining and interactive than traditional methods. The main goals of "serious games" related to climate change are to raise awareness, increase knowledge, and motivate action among participants (Ouariachi, 2017). There is a focus on allowing back and forth dialogue, which has led participants to increase their feelings of personal responsibility, gain confidence in climate change

mitigation and develop optimism about the future climate (Meya, 2018). The Climate Fresk can be classified as a "serious game" as it focuses on educating participants about climate change through an interactive and entertaining workshop. By using a card game to communicate climate change, the Climate Fresk is enjoyable, accessible, and relatively simple to facilitate.

Effective Climate Change Communication

Climate change communication tends to be negative as it often leaves people with feelings of doom and gloom, which is counter productive for getting people to implement solutions (Filho, 2018). To fix this, Stoknes (2017) proposes a shift in climate change communication from "the five D's to the five S's" which will help motivate the public to take action, and feel better in the process. Climate change is often seen as a Distant issue, but if Social connections related to climate change are created it can make it feel closer (Stoknes, 2017). Rather than focusing on communicating the Doom associated with climate change it is key to be Supportive and focus on benefits and solutions (Stoknes, 2017). The complexity of climate change creates Dissonance, making it difficult to take action, but by Simplifying it, positive actions become easier and increasingly convenient. Denial, a common response to climate change, can be overcome with Signals that show progress and identify possible solutions (Stoknes, 2017). Climate change is an overwhelming topic which makes it difficult to Identify key figures in the field of climate change, by incorporating Stories, climate heroes and the benefits of taking action can be addressed. The Climate Fresk has emphasized the five S's by providing a Social setting, which is Supportive, Simple but informative, provides opportunities for participants to discuss Signals (in the solution section) and allows participants to both bring their own Story and experience to the workshop.

Relevant Stories

When communicating climate change, compelling stories are key for engaging the audience. The Collage provides participants with an opportunity to understand climate change in a narrative format, which unfolds in the collage portion. The most effective stories contain simple events linked by clear causes and effects (Marshall, 2014), which is exactly how the science of climate change is explained using the cards of the collage. Participants of the Climate Fresk are given the opportunity to shape their story individually and as a group, which is especially effective in the creativity and solution section of the workshop.

Social Norms

There have been social norms created around climate change, which have reduced the amount of people that discuss the topic. Climate change can be considered by some people as a socially unacceptable topic for conversation (Marshall, 2014). In 2014 two-thirds of Americans surveyed said that they do not discuss climate change, showing the prevalence of social silence around climate change (Marshall, 2014). Currently the most significant reasons people do not often discuss climate change have been identified as: the belief climate change will not impact people personally, uncertainty about how to communicate the topic, and feelings of powerlessness or hopelessness about the situation (Marshall, 2014).

Through the Climate Fresk these social norms can be broken down as participants discuss climate change casually with their peers. Participants in the workshop tend to be interested in climate change, which can motivate participants to take action as they become part of a social group. The workshop provides a sense of belonging for people aware of climate change and can alter social norms by making them aware of the growing number of people discussing the issue. When facilitating the

Climate Fresk there are several opportunities to frame climate change as a collective, rather than individual problem which can help change this social norm and increase discussion about climate change. This shift in social norms that is created through the workshop helps make people more comfortable discussing climate change with others in their daily lives. Following research in pedagogy, psychology and climate change communication, it has become clear that the Climate Fresk uses well-founded techniques to create an engaging, educational, and motivating experience for the general public that has great potential for helping solving climate change.

References

- Center for Research on Environmental Decisions. (2009). The Psychology of Climate

 Change Communication: A Guide for Scientists, Journalists, Educators, Politicals

 Aides, and the Interested Public. New York.
- Davidson, J., Prahalad, V., & Harwood, A. (2020). Design precepts for online experiential learning programs to address wicked sustainability problems. *Journal of Geography in Higher Education*, 1–23. https://doi.org/10.1080/03098265.2020.1849061
- Goodwin, B. (2018). Student learning that works: How brain science informs a student learning model. *McREL*International. https://www.mcrel.org/wp-content/uploads/2018/05/McREL WhitePaper
- Hattie, J. (2009). Visible learning: A synthesis of over 800 meta-analyses relating to achievement. Routledge/Taylor & Francis Group.

Student Learning That-Works 2018 Web.pdf

Kaplan, S. (2019). Are cows bad for the environment? - The Washington Post.

https://www.washingtonpost.com/climate-solutions/2019/11/18/are-my-hamburgers-hu

rting-planet/

- Kolb, A. Y., Kolb, D. A., Passarelli, A., & Sharma, G. (2014). On Becoming an Experiential Educator: The Educator Role Profile. *Simulation & Gaming*, 45(2), 204–234. https://doi.org/10.1177/1046878114534383
- Kundzewicz, Z. W., Matczak, P., Otto, I. M., & Otto, P. E. (2020). From "Atmosfear" to Climate Action. *Environmental Science & Policy*, 105, 75– 83.https://doi.org/10.1016/j.envsci.2019.12.012
- Leal Filho, W., Manolas, E., Azul, A. M., Azeiteiro, U. M., & McGhie, H. (2018). *Handbook of Climate Change Communication: Vol. 1: Theory of Climate Change Communication*. Springer International Publishing.
- London Environmental Network. (2021). Green in the City | Connecting Global Climate

 Change to Local Impacts and

 Solutions.https://www.youtube.com/watch?v=9JTQYETRQYg
- Marshall, G. (2014). Don't Even Think About It: Why Our Brains Are Wired to Ignore Climate Change. Bloomsbury.
- McGlynn, K., & Kozlowski, J. (2017). Kinesthetic learning in science. *Science Scope*, 40(9). https://link.gale.com/apps/doc/A503273244/AONE?u=uniwater&sid=AONE&xid=238f6
- Meya, J. N., & Eisenack, K. (2018). Effectiveness of gaming for communicating and teaching climate change. *Climatic Change*, *149*(3–4), 319–333. https://doi.org/10.1007/s10584-018-2254-7
- Mobley, K., & Fisher, S. (2014). Ditching the desks: Kinesthetic learning in college classrooms. *The Social Studies*, *105*(6), 301–309.

https://doi.org/10.1080/00377996.2014.951471

- Mobley, K., & Fisher, S. (2014). Ditching the Desks: Kinesthetic Learning in College Classrooms. *The Social Studies*, *105*(6), 301–309.
- Morris, J. (2016, September 15). What Is Active Learning? New Blog From Cambridge.

 Cambridge Assessment International

 Education.https://blog.cambridgeinternational.org/what-is-active-learning/
- Ouariachi, T., Olvera-Lobo, M. D., & Gutiérrez-Pérez, J. (2017). Analyzing climate change communication through online games: Development and application of validated criteria. *Science Communication*, 39(1), 10–44.

 https://doi.org/10.1177/1075547016687998
- Petersen, B., & Barnes, J. R. (2020). From Hopelessness to Transformation in Geography
 Classrooms. *Journal of Geography*, 119(1), 3—
 11.https://doi.org/10.1080/00221341.2019.1566395
- Pollitt, C. (2016). Debate: Climate change—the ultimate wicked issue. *Public Money & Management*, 36(2), 78–80. https://doi.org/10.1080/09540962.2016.1118925
- Stoknes, P. E. (n.d.). How to transform apocalypse fatigue into action on global warming.

 Retrieved April 10, 2021,

 fromhttps://www.ted.com/talks/per_espen_stoknes_how_to_transform_apocalypse_fat_igue_into_action_on_global_warming
- Wibeck, V. (2014). Enhancing learning, communication and public engagement about climate change some lessons from recent literature. *Environmental Education Research*, 20(3), 387–411. https://doi.org/10.1080/13504622.2013.812720
- Wong, C. W., Tsai, A., Jonas, J. B., Ohno-Matsui, K., Chen, J., Ang, M., & Ting, D. S. W. (2021). Digital screen time during the covid-19 pandemic: Risk for a further myopia boom? *American Journal of Ophthalmology*, 223, 333–337.
 https://doi.org/10.1016/j.ajo.2020.07.034

Summary

The debrief is essential for reflection, meaning-making, and connecting the workshop to real-life contexts. It enables participants to process emotions, test ideas, and draw conclusions.

Emotions

Why emotions matter

Emotions strongly influence behaviour, motivation for climate action, and political support. Past communication focused too much on guilt and fear, which is ineffective. Facilitators should foster constructive emotions.

Common emotions and guidance Despair / Hopelessness

Reduces motivation and leads to denial or inaction. Facilitators should promote hope and personal agency,

reminding participants of past human achievements and the incremental nature of climate action.

Anger

Can motivate people to act or seek information. Facilitators can help transform anger into enthusiasm and constructive engagement.

Fear

A common reaction but often counterproductive—it leads to avoidance unless paired with clear solutions and social support. Facilitators should avoid deliberately inducing fear.

Worry / Concern

More productive than fear. Supports long-term commitment to solutions.

Hope & Personal Agency

Essential motivators. Facilitators highlight existing solutions, successful movements, role models, and evidence such as Project Drawdown to reinforce that meaningful action is possible.

Facilitators must avoid judging emotions and focus on empathy, safety, and participant-centred discussion.

Solutions

Purpose

Many people desire to act but feel powerless or uninformed. The solutions phase builds hope, agency, and clarity.

How facilitators guide this phase:

- Encourage participants to imagine a better future shaped by climate action.
- Highlight co-benefits of solutions (e.g., cycling improves health, reduces pollution, saves money).
- Invite participants to choose a solution and discuss why it matters.
- Encourage participants to articulate their own long-term benefit perception, which increases commitment.

Psychological insight:

"Future discounting": People respond more to avoiding losses than gaining benefits.

→ Facilitators can frame solutions in terms of avoiding future harm (e.g., fuel costs).

Diversity of solutions

Facilitators emphasize that everyone can contribute based on their skills—activism, community initiatives, professional choices, lifestyle changes. Collective action and political engagement are essential.

Final message

Climate action is not binary. Every step counts and reduces future harm.

Relevant Research

This section explains the educational and communication science behind the Climate Fresk workshop.

Group Learning

Group interaction allows people to share knowledge and process both emotional and analytical aspects. It increases engagement and awareness of social support.

Informal Learning

An informal environment lowers barriers to participation and makes climate learning accessible to all levels of knowledge.

Other Learning Methods

- Kinesthetic learning: Participants manipulate cards physically, increasing retention.
- Active learning: Learners co-construct knowledge; facilitators guide rather than lecture.
- Experiential learning: "Learning by doing" motivates action; Climate Fresk uses visual material and personal reflection.
- Learner-centered education: Participants build solutions using their existing knowledge.

Serious Games

Serious games increase engagement, confidence, and optimism. Climate Fresk is a serious game combining entertainment with deep learning.

Effective Climate Communication

Traditional communication often triggers fear or apathy. Stoknes' Five S's improve communication:

- Social context
- Supportive framing
- Simple messages
- Signals of progress
- Stories that inspire Climate Fresk uses all five.

Stories

Narrative formats increase comprehension and engagement. The collage provides a clear cause-and-effect story, while the creativity and solutions phases let participants shape their own narratives.

Social Norms

Climate is often seen as a taboo or rarely discussed topic. Climate Fresk breaks this silence by creating a safe, social space for climate conversations, helping people feel part of a community and empowering them to speak about climate change afterward.