

'Hacking' climate education methods within narrow policy frames to ask systemic and emancipatory questions. Practice notes from Leith, Scotland

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Abstract

Tackling climate change requires transformative learning processes that uncover the assumptions underlying the framing of problems and solutions, invite ontological pluralism, and build action-oriented agency (Lotz-Sisitka et al., 2015; O'Brien et al., 2013). However, many climate educators operate within narrow policy frames that reproduce an 'externalizing' view of climate change and aim to engender behavior change instead of inquiring into root causes and underlying assumptions (Clifford & Travis, 2018). In these practice notes, I reflect on a seven-week climate education program I conducted over two years in Leith, Scotland. I argue that climate education methodologies can be 'hacked' to ask more systemic questions while still achieving individual behavior change. I outline several techniques that helped hack methods in this context: beginning with the value position of the group; creating a space where information is dissected and owned by participants; experimenting with participatory creative methodologies (e.g. storytelling); asking open questions and contextualizing behaviors; and seeing the whole endeavor as a process. These methods are context-specific and are intended as a provocation for educators to explore whether climate education programs they are involved in can be similarly hacked.

Keywords: climate change, climate education, transformative education, transformative learning, sustainability education, climate justice, environmental justice, social movements

Introduction

Sustainability crises, including climate change, are often characterized as 'wicked' problems; their complexity, ambiguity and unpredictability defy easy solutions (Lotz-Sisitka et al., 2015). Several authors (e.g. Lotz-Sisitka et al, 2015; Nightingale et al., 2021) argue that science-policy interfaces have accumulated much knowledge about climate change, yet this knowledge alone has failed to motivate the drastic action needed to halt the crises. Nightingale et al. (2021) argue that science-driven climate knowledge is underpinned by a colonially-inherited, technocratic ontology that analytically separates the environment and society and understands climate change as an external threat. This framing excludes diverse and indigenous ontologies, prevents the critical examination of capitalist political economies that give rise to climate change in the first place, and leads to technological and managerial solutions.

This presents a particular set of challenges for climate educators in formal and non-formal settings. There are no ready-made solutions that can be learned, and it is questionable whether solutions born out of these externalizing values and framings can catalyze the necessary systemic transformations to overcome climate change. Research and learning processes should develop disruptive action-oriented capacities, which need to entail a questioning of values and definitions of problems and solutions (O'Brien et al., 2013). However, many climate research and education programs exist within narrow policy and funding frames that dictate to what extent processes can be aimed at systemic transformation (STEPSCentre, 2021). Education initiatives frequently follow a 'climate literacy' paradigm, which endeavors to increase scientifically accurate knowledge of climate change (Clifford & Travis, 2018). I contend that this partly results from the framing described above – if climate change is viewed as an external problem that can be solved with technical and managerial solutions, and this view dictates policy agendas and education funding as well as the mindset of educators, the resulting education programs will reflect this externalizing perspective. Many climate educators with transformative aspirations (including myself, as I will explain below) operate within these narrow policy frames, trying to subvert and extend what perspective shifts are possible within their courses.

Fortunately, educators can find guidance in transgressive and liberatory practices, such as the idea of 'hacking', or creatively subverting, methods. This concept originated within pedagogy in museums and grew out of the recognition that museums emphasize some knowledge and practices over others, thereby legitimizing 'a prevailing order of social, cultural and political power (Clover & Stanford, 2016, p.127). Hacking emerged as a way of critically engaging these exclusionary discourses and shaping different meanings in pedagogical practice (Clover, 2017).

I will use the present practice notes to describe a climate education program within a narrow policy frame which I facilitated through my work at the grassroots charity *Earth in Common* (hereafter EiC) in Leith, Scotland. I argue that climate education methods can be similarly hacked to highlight problematic framings, open new views on climate change, and ask more systemic and emancipatory questions. I will outline five practical suggestions that might be useful for educators in similar settings: beginning with the value position of the group; creating a space where information is dissected and owned by participants; experimenting with participatory creative methodologies (e.g. storytelling); asking open questions and contextualizing behaviors; seeing the whole endeavor as a process; and seeing the learning site as a system. These methods are context-specific and are intended as a provocation for educators to explore whether climate education programs they are involved in can be similarly hacked.

Context

The course I draw upon for these practice notes was called *7 Easy Steps to a Greener You* (hereafter *7 Steps*). I facilitated the course through my employment at EiC in Leith, Scotland, which was funded by the Scottish Government's Climate Challenge Fund (CCF). I will briefly introduce the Scottish context, the organization and the course below.

Climate education in Scotland

The Scottish government is eager to distinguish itself as a climate leader (e.g. Climate Change Act, 2019), and public money is channeled into various initiatives to meet Scotland's climate targets. One government fund was called the Climate Challenge Fund (CCF), which supports community-led projects to achieve local emissions reductions (Aiken, 2016; Dinnie & Holstead, 2017).

This fund is an example of the framing of climate change described above put into action. The understanding of climate change (as an external threat instead of one arising from within neoliberal political economies) has been established *a priori* and translated into legislation in the form of emissions reduction targets. The funded activities then focus on implementing this legislation by organizing climate education initiatives that encourage individual behavior change to reduce carbon output.

Earth in Common

I was employed at the grassroots charity EiC between 2019 and 2021. EiC came to life when the local community, spearheaded by Evie Murray, identified a derelict tennis court of about two acres on common good land and dreamed of what else it could present for the community. Through negotiations with various public bodies and determined campaigns of seed-bombing, community engagement and consultation, Leithers eventually established Scotland's first modern 'Urban Croft' (more on crofting traditions at Busby & Macleod, 2010 or MacKinnon, 2017). The site is now known as Leith Community Croft, where 120+ crofters grow food communally on shared, collectively managed plots. Over the past eight years, the charity has further established a market garden cultivated with the help of volunteers, a farmer's market and café, and several environmental education activities.

7 Easy Steps to a Greener You

EiC received several stages of CCF funding for educational activities. Amongst many other engagements, this led to the development of the *7 Steps*, a free climate education course. This course directly followed the logic of climate change as an external problem prescribed by CCF, aiming to engender individual behavior change for emission reduction. The course took the CCF's focus on *active travel* (e.g. commuting by bike, walking, or taking the train),

food, waste and energy as a starting point and added an *intro* and *outro* session and a session on *water*. The outline of the course can be seen in Figure 1.

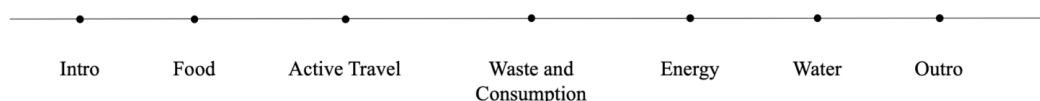


Figure 1. Outline of the 7 Steps course

The *intro* session gives an overview of central climate science concepts and creates a space for the group to get to know each other and find out what climate-related knowledge and opinions participants already hold. Each subsequent session investigates an area of individual and household activity and imparts what actions people could take to reduce emissions. For example, in the waste session, people would learn statistics about food waste in the UK and which foods are most commonly wasted (e.g. bread, milk and potatoes). They would then learn some practical tips to avoid wasting these items.

I was constrained by the narrow policy frame in two crucial ways. Firstly, CCF dictated and approved the content of course materials and monitoring of its progress (see also Aiken, 2016). Secondly, the Scottish government organized CCF, which entailed limitations to what political angle projects could take in their public presentation and their events (see also Aiken, 2014).

Despite these limitations, EiC promotes the idea that individual behavior change is not enough to tackle climate change. My impetus to weave in these more systemic considerations was welcomed when I took over the responsibility of facilitating the 7 Steps program. Gradually, I began asking myself how I could facilitate the course so that it still delivered on its targets of individual and household carbon emission reductions while also opening spaces for inquiring into the systems and power structures that co-produce climate change. In the next part of this article, I will describe the process of hacking the 7 Steps.

Hacking the 7 Steps

Beginning with the value position of the group

One tool that helped create a space of open inquiry into potentially contentious topics was to center the value positions of each participant. I began by creating a welcoming atmosphere at the beginning by reaching out to participants via email before the course started, welcoming people by name, offering teas, coffees and food to share, and more. The *intro* session created moments for

people to get to know each other beyond their interest in climate change and share what they care about and value in life. We explored what people already know about climate change, what they still wanted to learn, and what they were unsure about. Throughout the course, I iterated between presenting information (in the form of facts, concepts or statistics) and discussion. Whenever I introduced a new idea, I also created space for people to dissect the piece of information, ask their own questions, and bring their own concerns.

I believe that this practice of valuing everyone's ideas across different experiences presents an essential fundament to what Mouffe (2013) calls agonism, a form of dialogue where conflict is seen as a positive driving force for transformation. Some elements of climate change are easily acceptable (i.e. recycling), while others often conjure up strong emotions and contestations (i.e. food practices, eating meat, the extent to which society will have to change to overcome climate change). While the open format means that not every question gets solved, the agonistic nature of the dialogue and continuity of interaction has the power to create a feeling of a shared purpose beyond different positions. This welcoming atmosphere was reflected in people's experiences; most participants commented on how conducive the welcoming atmosphere was to expressing opinions and learning from others.

Dissecting and reclaiming information

Beyond engendering a sense of feeling valued, the iteration of presenting information and creating space for deconstructing, questioning, comparing and evaluating in a group has several other benefits. My experience corroborates insights from Freirian liberation pedagogy (Freire, 2018), which holds that working with knowledge in such a way can have empowering effects on individual and collective levels. Individually, this process can help people make abstract information concrete by relating it to their own life circumstances and experiences. This can engender a sense of ownership of the knowledge, which in turn can make people feel more confident in talking about climate change in their families and communities. Increased confidence was the most common feedback on the course. This confidence often naturally translated into a form of agency for participants to become active in their communities. Four participants used the material to present climate-related talks or workshops in their communities (which led to tangible community outcomes, including a walk-to-work rewards incentivization scheme in a rural location and a takeover of a community green for food growing). Two participants became active members of EiC and are still involved in the NGO to this date.

On a collective level, the process of co-evaluating knowledge enhanced the sense of togetherness within the group and enabled peer learning. Most participants, including myself, learned something new whenever people shared their perspectives and knowledge on sustainability.

Experimenting with creative and participatory methods

A wide range of creative and participatory methods, including group discussions and tasks, can be used to make climate knowledge relatable and relevant. For example, in the food session, we selected one common item of food, such as chocolate, potatoes, or oats. We then looked at the lifecycle of the food, as depicted in Figure 2 (adapted from E. Gordes, personal communication, September 17, 2019). We went over the six core factors involved in food's environmental and carbon footprint (greenhouse gas emissions, water use, energy use, chemical use, land use and waste products), worked in small groups on specific factors, and presented our thoughts in a group discussion. The power in this exercise lies less in creating an accurate picture of the footprint of the food but more in the process of collectively looking at an issue from various angles and building up a holistic picture. Participants frequently commented on how individual knowledge and perspectives would tangibly merge into a representation of the collective knowledge present within the group.

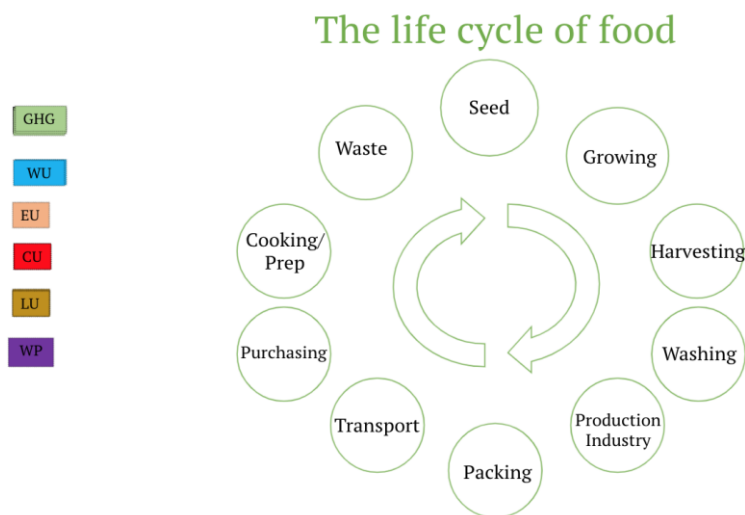


Figure 2. *The life cycle of food exercise*

Furthermore, creative methods hold the power to create a connection to climate change beyond the cognitive – through emotions, experiences, practical knowledge, expression and embodiment. This can include simple energizers that incorporate movement, taking walks, growing food, and telling stories. Storytelling, in particular, is a powerful way of presenting voices from the Global South or marginalized local voices that might not otherwise be heard within climate conversations. For example, in the water session, we started by sharing what we can value about water. A colleague from Bolivia often joined, who had experienced water scarcity through the Cochabamba Water Wars in 1999 (Bustamante, 2004). Her telling of her experiences made the issue created a sense of resonance that was more powerful than an abstract presentation of the facts.

Open questions and contextualizing behaviors

If facilitators are limited in how ‘political’ the information on the course materials can be, asking open questions and contextualizing behaviors in their broader socio-economic context can help raise contentious topics from within the group. For example, regarding energy, materials from CCF do not commonly mention big fossil fuel companies, such as Shell, BP or Exxon, or their role in causing climate change. Opening up the conversation and asking participants whom they think the big polluters are will often raise these companies. From there, the group can discuss how to effectively curb the power of these giants, what role governments and multilateral organizations can play in this, and how communities can mobilize to hold these actors accountable.

Another way in which individual behaviors can be contextualized in their wider social, economic and political context is by using heuristic devices such as the following graphic:

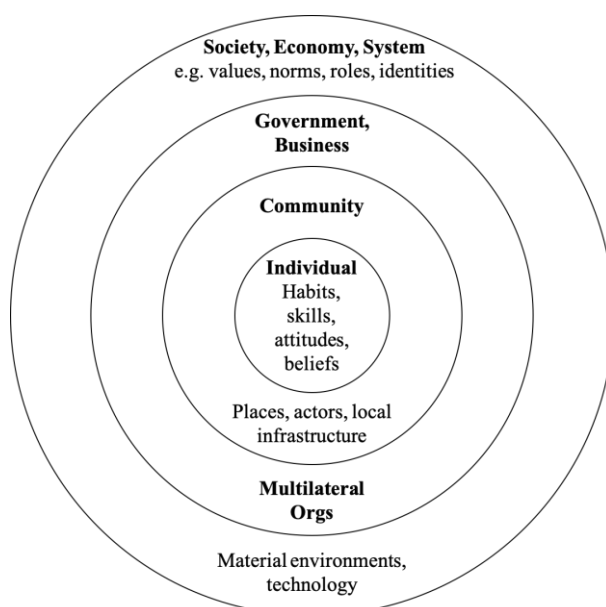


Figure 3. Heuristic to show different levels a behaviour ‘operates’ on

Such graphics can prompt a discussion around the different levels an issue operates on. Taking waste as an example, on the individual level, habits, skills and attitudes are pertinent – individuals may be in the habit of throwing all their waste into the same bin instead of recycling, or they may lack the skills to repair an item they own. On the community level, facilitators can ask whether there is a local infrastructure to promote waste processing, such as community recycling or composting facilities. At the level of government, business and multilateral organizations, the government’s role in providing waste processing facilities, as well as political topics such as the shipping of waste from the UK to

countries in the Global South and the waste generation of businesses, can be interrogated. Lastly, on the societal, economic and systems-wide level, one can ask how material environments, including shopping apps, ads, technological devices or super-market or city layouts, reinforce consumption patterns, and what value structures, norms and identities underlie current waste behavior (which then relates to how individuals internalize these norms). Thus, using such models helps to go beyond a sole focus on the individual to examine any behavior from a wider variety of angles.

Viewing climate education as a process

I viewed the entire engagement through the course as a *process* rather than a means to a fixed destination (Lange, O’Neil and Ross, 2021). When discussing ways to combat climate change, people with different backgrounds and opinions will be present. Often, no definite agreement on solutions or ways forward emerges. Still, it is vital to have conversations about climate change across value positions (i.e. to encourage a robust civil society to hold governments accountable for their targets, electoral support for climate legislation). I have found that detaching myself from aiming to convince people of a singular way to think about climate change, but giving them space to explain where they come from and what matters to them, has the power to change the dynamic of a conversation or a workshop.

Combining this non-dogmatic attitude with the creation of a positive, welcoming atmosphere and the exploration of climate change through stories, embodied and practical activities, I have witnessed the opening of deliberative spaces that engender a sense of unity and shared purpose beyond individuals’ different opinions – the essence of solidarity. I see the power of these spaces beyond a linear knowledge to action trajectory – I believe that the dialectical movement of doing, being and acting can lead to fundamentally changed ways of thinking about and being in the world, which are needed to tackle climate change on a profound level.

Conclusion

Above, I analyzed how I hacked the 7 Steps course – by beginning with the value position of the group; opening spaces to dissect climate knowledge; experimenting with creative and participatory methods; asking open questions and contextualizing behaviors; and viewing climate education as a process. It is vital to emphasize that methods are always context-dependent. To further explore the use of hacking for climate education methods, future research could investigate hacking processes, the resulting learning, and the effectiveness of different methods with more rigor.

To conclude, I echo O’Brien et al.’s (2013) call for “unconventional and daring” (p. 10) revolutions in climate education. In the age of intersecting environmental and social justice crises, educators are called upon to cultivate

methodological rebelliousness. This rebelliousness can be loud in its instigation of action-oriented capacities to challenge power, build agency within organizations, communities and movements, and mobilize people for social transformation. It can also be quiet in its uncovering of blind spots and hidden assumptions and its weaving of shifts in consciousness and ways of being in the world, highlighting interconnectedness, multiplicity, conflict and difference. Hacking methods may be one of the many ways of being rebellious. May educators everywhere find many more ways to pedagogically transgress existing norms and modalities to meet the complex and unknowable challenges of the present intersecting crises.

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