CLARITY

Teachers' Guide

Learning for Transformative Climate Resilience

Co-funded by the European Union

Lund University

One Resilient Earth

Climate Creativity

Real School Budapest

Legacy17

the vision works

Teachers' Guide

Learning for Transformative Climate Resilience

CLARITY

Transformative Climate Resilience Education for Children and Youth:

From Climate Anxiety to Resilience, Creativity and Regeneration

The authors:
Marilyn Melhmann, Nicole Diamantas, Gwendoline Ducros, Charlotte Karlsson, Bernadett Kiss, Marte Maurabakken, Laureline Simon, Signe Strøm Flugsrud, Carmelo Zamora, and Christine Wamsler

Acknowledgments:
We would like to warmly thank all the teachers and educators for their input and contributions to the CLARITY Teachers' Guide. Their feedback was integrated during the co-creation processes and helped shape the Teachers' Guide as presented in this book.

Special thanks to:
Sierra DeLew, Justyna Doherty, Carolin Grzenia, Kateryna Kolosiuk, Emelie Jonsson, Enikő Johnston-Szűcs, Gareth Manning, Viktoriia Ostrovska, Maria del Palacio, Valentina Pescetti, Merete Svindland and Olena Zarichna.

We would also like to warmly thank all the experts who generously contributed their insights and feedback during the development of this Teachers' Guide.

Referencing the Teachers' Guide:
Mehlmann, M., Diamantas, N., Ducros, G., Karlsson, C., Kiss, B., Maurabakken, M., Simon, L., Strøm Flugsrud, S., Zamora, C. & Wamsler, C. (2026). *Teachers' Guide: Learning for transformative Climate Resilience*. *CLARITY – Transformative Climate Resilience Education for Children and Youth: From Climate Anxiety to Resilience, Creativity and Regeneration.* Lund University, Sweden. ISBN 978-91-8104-587-1. Accessible under https://transforming-climate.education/

Graphic design by Nordicworking and Climate Creativity

Cover design by Colleta Kihumba (One Resilient Earth)

www.transforming-climate.education

contact@transforming-climate.education

All resources labelled as such by the Clarity Consortium are licensed under following Creative Commons License:
CC BY-SA 4.0

Funded by the European Union. Views and opinions expressed are however those of the author(s)only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.

Co-funded by the European Union

Table of Content

Overview

Background

A warm welcome to this guide, intended to make it easier for you to teach about climate change and climate resilience in an empowering way. This Teachers' Guide and the accompanying Toolbox have been co-created *for* and *together with* engaged teachers, drawing on the insights and experiences of educators from diverse backgrounds. The process took place within the CLARITY project – an EU-funded collaboration between project partners in Germany, Hungary, Norway, and Sweden. It is available in the main languages of those countries as well as English and Ukrainian.

The aim of CLARITY is:

- To enhance educators' skills in dealing with climate anxiety so as to grow the climate resilience of learners.
- To support a transformative approach to addressing climate change by focusing on transformative and transversal competences and skills.

More precisely, it is about how to teach about climate change in a way that helps teachers, children and youth to engage with difficult feelings and support each other in facing their emotions regarding climate change, while taking part in meaningful collective and creative action towards a more just, climate-resilient and regenerative world.

The CLARITY "package"

To support you as a teacher we offer a set of materials.

The Toolbox

The Toolbox offers pedagogical tools and activities for teaching climate resilience. These tools become most powerful when used with reflection, context awareness, and clear pedagogical intentions – that is why the Teachers' Guide accompanies the Toolbox.

Where the Toolbox gives you ready-to-use tools and activities, the Guide helps you understand the purpose behind them, the pedagogical foundations they rest on, and ways to adapt the tools to your learners and your unique teaching environment. Together, they form a cohesive resource: the Toolbox provides the *what*, and the Teachers' Guide supports you with the *why* and *how*.

The Teachers' Guide

This guide consists of three parts and contains:

- **Introductory material:**
  - Overview – introduces the main concepts with an emphasis on how and why you, as a teacher, can approach this topic.
  - Facts and reflections – summarises salient aspects of the two major subject areas, namely climate resilience and climate emotions.
- **The five Competence areas** identified as key to teaching for climate resilience, each presented in its own chapter to support your use of the tools in the classroom. The numbered sections in each Competence area chapter correspond to the numbering of tool groups in the Toolbox. Also inserted into the text throughout the book are suggestions – "Try this" – for exercises that you may like to try out for yourself.
- **Conclusions and outlook** – revisits the question of how you, the teacher, can choose to continue your own learning journey.

Additional materials

You also have free access to other referenced materials:

- A project website where you can find our fully searchable Toolbox.
- An online community platform, offering a self-paced course and a forum where you can post questions, discuss and connect with other educators.
- The CLARITY Framework of Competences, which lays down the conceptual foundation for this guide.
- The CLARITY Literature Review which provided the scientific foundation of the CLARITY Framework of Competences and Toolbox.
- A Policy Brief which advocates for deep changes in climate education and summarises the key arguments and rationale for this guide and the associated tools.

Using the Teachers' Guide in your practice

Five Competence areas to explore

The guide is designed according to five main Competence areas adapted from the European Sustainability Competence Framework (GreenComp) (Bianchi, Pisiotis, & Cabrera Giraldez, 2022) that defines a set of competences required for sustainability, and how those competences can be developed through the educational system. The adaptation was made on the basis of a systematic literature review and a co-creation process aimed at bringing into focus CLARITY's two specific objectives of addressing climate anxiety while fostering climate resilience.

The five Competence areas developed through this process are structured to facilitate meaningful emotional and cognitive responses and engagement with climate-related challenges. They are:

1.	**Taking care of emotions and trauma**. Builds emotional literacy, confidence, self-efficacy, and active hope for change.
2.	**Nurturing connection to oneself, others and nature.** Encourages self-reflection, empathy, and connection with nature to explore climate change and foster interconnectedness.
3.	**Embracing values that sustain the lives of all living beings.** Cultivates integrity, deep listening, and perspective-taking to promote resilience and respect for diverse knowledge systems.
4.	**Opening up to diverse climate-resilient and regenerative futures.** Develops futures literacy, imagination, active hope, and adaptability to envision regenerative, climate-resilient futures.
5.	**Taking collective action for climate-resilience, ecosystem regeneration, and societal transformation.** Strengthens problem-solving, critical thinking, and collaboration for climate resilience.

In CLARITY, competences and the corresponding tools are seen as enabling learners – students and educators alike – to think, feel, and act with resilience and regeneration in mind. Rather than simply knowing about concepts like critical or systems thinking, learners are invited to *embody* these ways of understanding through repeated practice. Competence in this perspective emerges from experience and becomes a lived practice through using the approaches offered through the tools. For example, the competence of *taking care of climate emotions and trauma* draws on emotional literacy, emotional regulation, self-compassion, compassion, trauma-informed leadership, and community-building. The corresponding tools in Competence area 1 support the ability to stay present with difficult emotions, foster resilience, and act with care and connection in the face of global and local challenges.

This approach aligns with the GreenComp (Bianchi et al., 2022) definition of sustainability competence: the ability to embody values, embrace complexity, and take action for ecosystem health and justice across all areas of life.

CLARITY tools and activities, and how to use them

The five Competence areas are each supported by a set of tools and activities, allowing you to tailor their use to particular learners' ages and receptivity, and to progressively foster deeper engagement with the subject matter and emotional responses.

Some activities offer a single exercise for direct use or adaptation, while others invite deeper exploration and may require more time, reflection, or engagement.

Basic Activity: Quick Inspiration. For educators seeking easy, low-prep activities or a light, engaging entry to the topic.

Intermediate Activity: More options. For educators ready to invest a bit more time and foster deeper discussion.

Advanced Activity: Different levels, which may require more preparation. Principally for educators with time and interest in deeper emotional and conceptual exploration.

Educators are encouraged to experiment, learn together with learners, and use the CLARITY Forum to share feedback and experiences.

Creating a learning path: choosing and adapting the tools and activities for your learners

As you explore the different Competence areas in this guide, we recommend reviewing the suggested tools with your own learners in mind. Consider which activities are most appropriate for your learners' age, emotional readiness, and classroom context. Some activities may be better suited for older learners, while younger learners might benefit more from movement-based or clearly structured tasks. Choose one or a few tools and activities to try out in each Competence area, observe how they work in your setting, and reflect on the outcomes. This process gives you the opportunity to create your own path in teaching for climate resilience, one that is responsive to your learners and rooted in your professional judgment. Throughout, return to the core pedagogical questions: for whom, when, why, where and how.

Three examples of sequencing to create a path suitable for your context

Connecting and nurturing relationships:

- 2.3.1 *Observe and research animals*.
- 2.3.2 *Move and feel like an animal*.
- 2.3.3 *Walk and talk with animals*.

Embracing values that sustain all living beings:

- 3.3.1 *Active listening*.
- 3.3.2 *Deep listening to others*.
- 3.2.1 *Listening to recorded stories narrated by Indigenous Peoples*.
- 3.2.3 *Exploring arts or cultural heritage of Indigenous Peoples*.

Mix between activities from different Competence areas:

- 3.3.1 *Active listening*.
- 2.2.1 *Listening to stories from older generations*.
- 2.2.2 *Tell your climate connection story*.

Integrate one emotion activity and one value activity into this climate story activity. Choose between these suggestions, depending on which is most suitable for your learners:

- Emotion activity:
    a. Younger learners: 1.2.1. *Climate emotions wheel*, you can use the wheel with text and/or the wheel with emoji symbols.
    b. Older learners: 1.2.3. *Climate emotions symbols*.
- Value activity:
    a. Younger learners: 3.5.1 *Everyday superhero* – practicing your signature strength.
    b. Older learners: Another value activity, for example 3.5.2. *Exploring your values*.

In every learning group, there will be differences in how learners engage, communicate, and feel safe. Some of these differences fall under what is commonly referred to as *special needs*. But perhaps it's more helpful to start from the idea that we all have needs, and some are simply more visible or better understood. Just as some learners may need glasses to read clearly, others may need movement breaks to stay focused, visual supports to process instructions, or quiet spaces to feel safe. And of course, the same goes for teachers. Our diversity of needs does not simply vanish in adulthood. So create similar space for you and your colleagues to adapt practices as well.

DIVE DEEPER

Adapting to the needs of your learners

It would be neither realistic nor respectful to try to offer ready-made adaptations for all types of needs. Instead, we sometimes give tips in the "adaptation" section of the activities and from there we invite you to develop simple, flexible strategies to adapt activities for your own learners and context. You know your learners best.

Continued from previous page

And if you're unsure – ask them (or someone who knows them, like parents). Co-creating a safe and supportive learning space is not only inclusive, it can also be transformative.

Some core principles for adaptation:

- **Start from strengths:** Focus on what each learner can do, and what helps them thrive. Be on the lookout for neurodivergent strengths as well as neurotypical ones (more on brain strengths, see Glossary).
- **Adapt for the group, while staying alert to individual needs:** For example, adding movement or visual instructions may benefit many, not just a few. Accommodating a neurodiverse group (a group containing people with different neurotypes) may be challenging but the next two principles go a long way.
- **Offer choices and flexibility:** Let learners opt in to activities in different ways – writing, drawing, moving, speaking, or observing. Also allow flexibility with how deeply learners get engaged spread over various activities. Some activities may be super accessible and exciting to learner A while learner B flounders to stay engaged. Conversely learner B has a great time with activities where learner A struggles a little more. Offer scaffolding and invitations to get involved where you can, but if this is not effective, don't push.
- **Empower learners to adapt things creatively to meet their needs:** Make it clear that you are open to ideas and suggestions for how to engage in exercises or work with tools. Repeat this when you see learners struggle to engage. Ask: "*how WOULD you be able to do it*?" Learners often have an innate sense of their needs, and where they do not, giving them permission to experiment will help them build more self- knowledge rooted in experience.

Continued from previous page

- **Keep instructions clear and visible:** Presenting instructions both verbally and visually – on a screen, board, or handout – can significantly reduce the cognitive load on learners. Make sure not to ask them to attend to both at the same time. Rather leave instructions on the board or on an accessible handout as the exercise is being executed. When learners don't have to rely solely on memory to recall steps, more of their working memory is available for engaging with the task itself.

- **Emotional scaffolding:** Emotional safety is foundational for learning. Neurodivergent learners may process or express emotions differently. They may deal with alexithymia (difficulty identifying and describing feelings, see Glossary), reduced interoception (the ability to consciously feel, identify and name bodily sensations), or get easily emotionally overwhelmed. As a result, they may need support navigating climate-related content that can be intense or overwhelming. You can support emotional safety by modelling emotional vocabulary – this can be done through storytelling, spoken examples, or visual aids like emotion cards or feeling charts like the climate emotions wheel. Be mindful of signalling positive expectations around learnings starting where they are. Recognise that checking on our emotions is strongly tied to having good interoception (awareness of bodily sensations) and learners who struggle with focus – or easily hyperfocus! – need time and safety to transition into and out of exercises that call on these skills. Avoid putting learners on the spot without preparation; offer time and options for reflection and sharing.

Continued from previous page

- **Reflect and revise:** Try an adaptation, then reflect, if possible, with your learners. What worked? What needs tweaking? Give learners express permission to be critical and creative with alternatives if you want to make it safe for them to contribute.

By approaching each activity with these questions in mind – for whom, when, why, where and how – you not only meet learners' needs, but also model the adaptive and inclusive mindset that is called for by transformative climate resilience education.

Emotional engagement and the inner dimensions of climate change

The increasing incidence of anxiety, depression, and grief triggered by climate change is an indication that coping capacities are required not only in the physical realm but also in the emotional and psychological realms. Working with emotions is therefore a necessary part of integrating climate knowledge into everyday life. Research has shown that in order to create behaviour change one must not just teach about core concepts, but also consider emotional and cognitive mechanisms in order for the learners to integrate knowledge into their future actions (Trolliet, Barbier & Jacquet, 2018).

These emotional and cognitive mechanisms are part of what are often referred to as the inner dimensions of climate change and sustainability. These dimensions involve our individual and collective mindsets, beliefs, values, worldviews, and associated inner capacities – including cognitive, emotional, and relational capacities.

Emergent research in the field shows that the disconnection from self, others, and nature is the root cause of today's climate crisis. Re-making these connections is thus central to climate education, and can be achieved through experiences of nurturing relationships: with oneself, with other people, and with the world of animals, fungi and plants. Numerous tools are suggested to create and build upon such experiences.

At the root of transformation lies how we relate to ourselves, others, and nature; how we understand the values that drive our actions; and whether we are open to make changes. These are all topics addressed in CLARITY, and they are areas where education – and teachers – can make a significant contribution.

DIVE DEEPER

The Educational Tree

Dive deeper and watch professor Christine Wamsler talk about The Educational Tree: about how integrating questions concerning Inner-Outer Transformation supports you in teaching and creating courses that accelerate sustainability and regeneration. It addresses the need for a transformative education that promotes a safe space, practical guidance for action taking, and quality assurance. (Length 16:38)

More to read: an article on Revolutionising sustainability leadership and education. And also Club of Rome has published an interesting book on The system within: Addressing the inner dimensions of sustainability and systems transformation.

The educator's role in teaching for climate resilience

The CLARITY program has been co-designed *for* and *with* educators – teachers who care deeply about the unfolding planetary crises, including climate change. You, the educators, not only guide learners through complexity, but also need support yourself: to prevent stress and burnout, and to cultivate a resilient mindset in your learners. Many of the tools designed for learners are also practices the educator needs to explore or embody in order to facilitate them meaningfully.

In this section, we explore key challenges educators face: the dilemmas of when and how to introduce climate issues, the emotional weight of teaching in uncertain times, the shift in role required by transformative education, and strategies for working with climate emotions in the classroom. We also offer guidance on how to make use of the CLARITY tools in practice.

The climate-teaching dilemma

Questions of climate change inevitably arouse emotions. Indeed, the growing prevalence of eco-anxiety and mental ill-health among young people, poorly addressed by most curricula, was the direct impulse for CLARITY.

As an educator, you may feel that eliciting and coping with learners' troublesome emotions is not your job, either in principle or because of negative attitudes by colleagues or parents. Certainly, a teacher is not a psychotherapist. Nonetheless we believe that *acting as a teacher* it's possible to have an important positive influence on the mental health and wellbeing of the learners, not least by making clear how learners' own wellbeing is intrinsically linked with collective and planetary wellbeing.

Challenges for educators

When is the right time?

Teachers often wonder: when is the right time to talk to my learners about climate change? What is the appropriate age? How should I approach it?

Sometimes such a decision is overtaken by events, such as heatwaves, forest fires, and flooding, that are tangible experiences for many children and where there is an immediate need to both discuss and to navigate emotions, in particular as proposed in the chapter on Competence area 1.

Given a choice, however, it can be fruitful to build on recommendations for environmental education concerning aligning with children's developmental stages (Sobel, 1996). By focussing on sensory and emotional connections with "nature", we enable children to form a strong emotional basis for climate education.

Developmental stages of environmental readiness

The appropriate level of climate information depends on many factors, not least on the age of the learners. Sobel (1996) gives some pointers:

- Early Childhood (3–7): Focus on sensory and emotional connections through play and exploration.
- Middle Childhood (7–12): Encourage curiosity through local ecosystems, gardening, and nature journalling.
- Adolescence (12–18): Engage in activism, community projects, and global challenges.

For learners of any age who have begun to grasp the consequences of climate change, it's especially important to address feelings of powerlessness and to reassure children that solving this crisis is primarily the responsibility of adults today. Introducing climate change scenarios and scientific data about the projected impacts of climate change too early can have negative consequences. So can one-sided presentation of the problems: share examples of positive actions being taken by individuals and communities to demonstrate progress and inspire hope.

A shift in the role of the educator

Transformative learning requires a shift from teacher-centred to learner-centred education. This shift calls not only for a reorientation of pedagogical methods but also for a deepening of the relational space between teacher and learner – one that is grounded in warmth, presence, and connection. It is an approach that recognises the importance of emotional engagement and relational depth in the learning process.

Such transformation places significant demands on the educator, both personally and professionally. It requires the confidence to move beyond the traditional confines of the teachers' role, and the courage to relinquish the assumption of total control in the classroom. The teachers' challenge is to accept that everything will not go right all of the time, but that mistakes are also learning opportunities – for the educator as well as the learner.

Professionally, this entails the capacity to facilitate collective processes of inquiry and exploration, emotional stability to support learners in accessing and working with their own emotional responses, and a willingness to critically reflect upon

and reimagine established practices of evaluation and assessment. While the transition towards a more transformative and emotionally attuned pedagogy may be met with hesitation – either internally or from colleagues and institutional frameworks – it nonetheless represents a necessary evolution in preparing learners to face the complexity, uncertainty, and emotional weight of the world they are inheriting.

DIVE DEEPER

Transformative learning

A distinction is often made between *knowledge transfer* and *transformative learning*. Both are necessary in education, including in climate education. In teacher training, much attention is paid to knowledge transfer but usually comparatively little to transformative learning. And yet, in periods such as ours of complex crises and rapid change, transformative education can offer the most essential skills, enabling learners to survive and thrive.

Simply put: there are no absolute certainties. In today's world, no-one – not even the most brilliant scientists – can accurately describe *all* the mechanisms at play, let alone predict the future with any confidence. So while there are some indubitable facts concerning the climate, we cannot *teach* about climate change *only* in the sense of knowledge transfer. For more about transformative learning, see A Transformative Edge (Biester & Mehlmann, 2020).

Safety first

Creating conditions for transformative learning builds upon the fundamental ability to create a space where learners feel welcome, able and (mostly) willing to express opinions, acknowledge feelings, and engage in non-judgmental dialogue. This is particularly important with a topic like climate change, where both opinions and feelings may reach high levels of intensity.

Continued from previous page

A key element is trust, the importance of which is often underestimated. The more daring a transformation process is and the more it challenges the learners, the more indispensable it is: trust in the group, trust in the educator, trust in oneself and one's own place, as well as trust in the efficacy of the learning process (Goldammer & Goldammer, 2022).

While it's vital to support learners in expressing and trusting their emotions, it's equally important to help them understand that emotions, though valid, aren't always accurate reflections of reality. Emotions can be influenced by past experiences, fear, or distorted thinking. Encouraging learners to feel their emotions, while pausing and reflecting before taking action can build both emotional resilience and critical awareness. Help learners see that emotions are signals to explore, not commands to obey.

It takes time

In one sense, transformative learning takes place instantaneously: there is a "eureka" or "Aha!" moment, after which the world looks different. Unlike ordinary changes of opinion or view, transformation cannot easily be reversed: it's difficult to "un-see" what has been seen.

On the other hand, the timing is unpredictable. That Aha! may come today, next week, next year, in ten years' time, depending upon circumstances and the learner's capacity to cope with new insights.

The third temporal dimension of transformative learning comes after the Aha! and refers to the establishment of new habits of thought and behaviour as well as new relationships consonant with the new insights. For example, a new insight into the socio-economic aspects of vulnerability to climate change may lead me to listen respectfully to people I might have looked down upon before understanding their vulnerability. This part of the transformation process can be difficult as it leads to redefining identities and our sense of belonging to various communities.

Continued from previous page

Such new insights on the part of learners may come at any point, and give rise to the need for corresponding new behaviours and relationships. The Toolbox is intended to help teachers support learners when this happens.

Navigating climate emotions

The educator can support learners to live with or navigate a variety of climate emotions through:

- Acknowledging emotions.
- Creative exercises.
- Movement and action.
- Meaningful engagement.

Most important is to ensure that emotional expression is validated and heard. This promotes healing and personal growth. Group activities that build emotional regulation over time support learners in avoiding overwhelm and developing resilience.

Enabling conscious choice

Introducing activities – especially those that may be novel or otherwise challenging – can be a fruitful moment to enable learners to experience conscious choice. To do this, an activity is introduced in three stages:

- Description of the activity, including motivation for using it, with an opportunity to ask clarifying questions.
- "*This is my invitation to you. Is it clear what I am inviting you to do?*" (This may lead to a need for further clarification.)
- "*Would you like to do it?*"

If one or more people say "no", this is to be respected. They may be offered an alternative activity, if most other learners still want to go ahead.

A trauma-informed pedagogy

The rapid increase in reported climate anxiety points to the negative emotional impact of climate change. Climate anxiety can be more difficult to navigate for people with preexisting trauma, while climate change can trigger potentially traumatic experiences. This calls for trauma-informed pedagogy, beginning with allowing and acknowledging emotions.

If you feel hesitant about bringing emotions into the classroom, remember this principle: all activities should be voluntary. Offering learners the choice to participate or not is crucial in establishing trust and safety. Creating a classroom culture of safety and acceptance is part of building a trusting environment where expression is welcomed, but never demanded. As such, it should be seen as a quality aspect of all education, not only as a response to the demands of climate education.

Your own "emotional regulation"

Facing a class or a group of learners who are acting out difficult emotions can be a challenge for any educator. We suggest that you take the time to explore some of the Toolbox activities in Competence area 1, to start work with your own emotional regulation, in order to build confidence before introducing selected activities to your learners. We encourage you to practice all activities in tool 1.1, *Fostering a trauma-informed learning environment*, as well as activity 1.2.1 *The Climate emotions wheel* and 1.2.2 *Emotions checks*. You may also find it useful to share your experience with other educators on the online learning platform, a valuable opportunity for collective learning.

Finally, please remember that you are *not* being called upon to become an amateur psychotherapist. The focus of this guide is upon what you can effectively do *within the role of an educator.* In the best case you will experience an improvement in your own working environment. But if either you or any of your learners are struggling, it may be time to call for professional help.

Learning outcomes and assessment

How can we address learning objectives in transformative education? Is assessing a transformative journey even possible? While formal assessment can be challenging, self-assessment is one route. With older learners, consider evaluating projects that showcase their applied understanding.

DIVE DEEPER

Assessing transformative learning

If, as a teacher, you are expected to assess learning outcomes, there is a very real dilemma posed when working to create space for transformative learning.

New insights and perspectives are a prerequisite – though no guarantee – for transformative learning, which in itself is not a "learning outcome" that can be validated against a set of criteria. Indeed, transformative learning is an individual process very much linked to values, personal life history, and the emotional state of the learner.

As Mälkki (2019) argues, assessment of transformative learning should focus less on finding out whether or not "transformation" has happened; more on how the process worked, which aspects triggered learning, how the learners felt, and whether their level of engagement in transformative action increased, including their use of self-assessment.

Thus, self-assessment is central in transformative learning as it is an integral part of the transformation journey for both teachers and learners. It engenders a critical distance towards their own insights and perspective, in order to understand whether and how they changed. There are many, many ways to stimulate self-reflection. But it can be as simple as scaling themselves on a 0-10 point scale for where they were and where they are now with regard to a theme or topic. And then getting curious about what each number means and what the difference is between now and then.

Another option is to have learners deploy their knowledge and capacities to build projects – project-based learning (PBL, see Competence area 5) – and to mark the projects. Clearly, then, the learners need some basic knowledge about project identification and design.

Continued from previous page

With regard to what can be assessed, some potential indicators that transformative learning has been or is taking place are:

- Enhanced self-knowledge; a change in the connection to oneself.
- Enhanced social competence; a change in the connection to others and to nature.
- Enhanced action competence; a change in the ability to conceive of actions to take, and the ability to take them.
- Enhanced tolerance for uncertainty; less procrastination and staying stuck in states of hyper- or hypoarousal. (Hyper and hypoarousal are not bad in themselves, but staying stuck in these states for prolonged periods is.)
- Satisfaction and feelings: an increased ability to express satisfaction and dissatisfaction, and to identify and express feelings.

This framework is compatible with the UNESCO ESD Learning Assessment Framework.

Facts and reflections

This chapter offers background information and some definitions concerning the two focal topics of CLARITY, namely climate resilience and climate emotions.

The climate change situation today

Climate change is happening, and its impacts are already disrupting lives. Over the past years, we have witnessed ever more frequent and intense extreme events such as storms, floodings, heatwaves and forest fires. As a result, numerous humans, as well as animals, plants and fungi, have lost their lives, been hurt, become sick, or been damaged. Some had to migrate. We have also seen increases in food prices, reducing access to food for some individuals and communities, as well as reduced availability of fresh water in certain regions. The destruction of infrastructure for power, transportation, housing and economic production has negatively affected the health and well-being of diverse population groups. The most vulnerable in society – and their direct caregivers – are the worst affected. We are beginning to feel the direct effects of climate change on our lives in Europe, but the situation is more dire in many other regions.

Scientists have noted the acceleration of slow onset phenomena related to global warming, such as ice sheet melting, glacier retreat, permafrost thawing, sea-level rise, ocean acidification, desertification, and biodiversity losses. These changes may be less visible to those who are not very familiar with the ecosystems around them, yet they signal profound and ongoing disruptions. If we continue to emit far more greenhouse gases into the atmosphere than our ecosystems can absorb, global temperatures will keep rising, and impacts of climate change will worsen everywhere. We could even soon reach some of the *tipping points* of the Earth system, which would further amplify global warming and disrupt ecosystems in ways that are impossible to reverse. This means that beyond a certain level of warming, climate change could become "unmanageable" for our societies and ecosystems. Last, no matter how much carbon emissions are cut or sequestered now, we will still have to deal with more frequent and intense extreme weather events in the decades ahead. Sea-levels will continue to rise, and the ice will continue to melt at the poles and on

mountains. As a result, diverse territories, ecosystems, and important cultural sites are already disappearing, along with the histories, languages and cosmologies of various peoples.

Yet, few people know about or acknowledge this global warming inertia, and even fewer are equipped to take action to address the ongoing impacts of climate change. This is why education to help build resilience to climate change impacts is critical today. It is about empowering ourselves to live flourishing lives in solidarity with each other and other species, in a world of climate instability.

What is climate resilience and why do we need it now?

> *"Avoiding the unmanageable and managing the unavoidable"*
>
> *UN Foundation, 2007*

Climate resilience is the capacity of our society, economy and ecosystems to anticipate, limit and cope with the multiple impacts of climate change. It requires and encompasses climate mitigation as well as adaptation to the impacts of climate change.

Climate change mitigation is essential to reducing the impacts of climate change. Its objective is to stabilize and then reduce the concentration of greenhouse gases in the atmosphere, in order to avoid unmanageable impacts of climate change.

However, some impacts of climate change are unavoidable. This is why it is critical to build our capacity to anticipate, limit and better cope with those impacts. This is what we call climate change adaptation or climate resilience. It requires taking action for social, economic and ecological systems to respond or reorganize, in ways that may necessitate not just adjustments but fundamental change. This kind of change is sometimes referred to, e.g. by the Intergovernmental Panel on Climate Change, IPCC (2023), as transformative or transformational climate resilience.

The transformative aspect takes us beyond sustainable development, implies a transformation of the systems and structures we depend upon, and involves ecosystem regeneration (i.e. restoring the health of ecosystems that have been damaged). Regenerated ecosystems can provide services that contribute to the resilience of the surrounding area. For instance, they can help absorb heavy rainfalls and limit flooding; trees and green spaces can help cool a city and provide shade in heatwaves, they can ensure regular water flows and maintain rain patterns. Healthy ecosystems can also better absorb greenhouse gas emissions, including in the soil, and play a critical part in limiting global climate change.

There is no universal recipe for regeneration; different ecosystems call for different regenerative processes and practices. Some examples: reforestation with native tree species, and/or with species better adapted to changed climate conditions; agroforestry, silviculture; wetland restoration, seagrass meadow restoration, river restoration including by removing dams and creating fish passages, rewilding urban parks or green corridors with native species.

What a community needs to regenerate should be informed by science and defined by the community itself through dialogues, participatory decision-making and/or community-led initiatives. Therefore, in addition to the ecosystem regeneration activities suggested above, regeneration should include social regeneration, by creating spaces for social interaction, fostering equity and inclusion, and improving access to services such as healthcare and education; economic regeneration along circular economy principles, with a focus on sustainable employment and local production; cultural regeneration by revitalizing traditions and heritage, as well as by fostering creativity and innovation.

DIVE DEEPER

Climate Resilience

How can we reduce the impacts of climate change locally?

Climate adaptation at the local level has primarily been about "managing the unavoidable" in incremental ways. This includes developing disaster risk reduction strategies such as:

- Preparedness for response (e.g. early warning systems).
- Preparedness for recovery (e.g. insurance systems).
- Vulnerability reduction (e.g. no living areas on ground floors in flood zones).
- Hazard reduction (e.g. greening slopes to reduce hazard risk related to landslides).
- Hazard avoidance (e.g. urban planning not allowing to move into risk areas).

What are the issues with the incremental approach – and why is transformative resilience needed?

The challenge with incremental climate resilience or adaptation actions is that many will need to be repeated each time flooding happens, for instance. People in the city may become more experienced at re-directing some of the water flow, evacuating or at rebuilding over time. However, some costs will be incurred for each extreme event, insurance schemes may have difficulty covering increasing impacts over time, and as quality of life and opportunities decrease in the city, a vicious circle affecting health, prosperity, and community fabric could start, and harm the city in the medium to long run.

Continued from previous page

To prevent such a downward spiral, a parallel transformative approach to climate resilience is needed, to address the root causes of vulnerability to flooding. Vulnerability is a result of exposure to the impacts of flooding, sensitivity to the impacts, and not least, the capacity of diverse individuals, population groups and communities to cope. Addressing the root causes of vulnerability requires local decision-makers to challenge their own assumptions and beliefs in order to rethink cities and human-nature relationships.

What does transformative climate resilience look like?

Continuing with of our example of a city vulnerable to flooding, transformative climate action to reduce exposure might include displacing inhabitants or businesses that border the river so as to extend the riverbed; some paved areas such as parking lots may need to be repurposed so as to turn the city into a "sponge" and limit water concentration.

Moreover, measures need to be taken to address the sensitivity and coping capacity of various population groups to the impacts of climate change. Some people and other living beings are more exposed or sensitive than others to the impact of events like flooding. Vulnerability arising from physical or geographical circumstances is easy to understand; but much vulnerability arises from social and economic factors that are taken for granted. Our cultures tend to give more value to some beings than to others, and to marginalise certain people and groups. Any path to a thriveable society for all needs to include challenging such assumptions and building new relationships.

To explain further, coping capacities are determined by access to the various resources we need to recover, rebuild and bounce forward, individually and collectively. Groups that are marginalized because of race and ethnicity, sexual orientation, mental health issues, or their socio-economic status, are less likely to have access to those resources, including money, information, and societal support.

Continued from previous page

Conversely, societies that address the historical causes of marginalization, and are committed to justice, equity and care in their culture, politics, law, economy and education could greatly enhance the capacity to cope among marginalized individuals, groups and communities.

The sensitivity of certain population groups to climate change impacts cannot be changed: for example, infants and the elderly, people with limited mobility, and people experiencing (mental) health challenges are all likely to be disproportionately vulnerable when a flood comes. This sensitivity can be better addressed in communities that understand the importance of taking care of their various members on a continuous basis, and take appropriate action.

What is it that makes people pull together and share resources? It is relationships, community belonging, knowledge and capacity. This is at the heart of why relationships and belonging are key to climate resilience. Actions to increase climate resilience thus include, for example, long-term community building exercises and collective care to increase the likelihood that people will have both the will and the skills to work together.

Why does transformative climate resilience include regeneration?

Regeneration refers to processes and practices aimed at restoring and revitalizing ecosystems and communities. Regeneration efforts aim to create systems that are not only resilient in the face of climate challenges but also capable of actively reversing environmental and social damage, and contributing to a healthier and more equitable planet.

Continued from previous page

Ecosystem regeneration contributes to enhancing biodiversity, restoring natural cycles, and increasing resilience to climate impacts. In turn, healthier climate-resilient ecosystems can provide ecosystem services that contribute to the climate-resilience of the surrounding area. For instance, they can help absorb heavy rainfalls and limit flooding, trees and green spaces can help cool off a city and provide shade in the event of heatwaves, they can ensure regular water flows and maintain rain patterns. Healthy ecosystems can also better absorb greenhouse gas emissions, including in the soil and play a critical part in limiting global warming.

The regeneration of communities complements the regeneration of ecosystems. Its goal is to create a virtuous cycle of renewal where environmental health, social cohesion, economic vitality and cultural renewal reinforce each other, and create an environment where all people and nature can thrive. Relationships and emotional resilience are key factors in this work. Some examples of community regeneration include transition towns, eco-villages, and urban revitalization projects focused on circular economy or rewilding. Regenerating communities is critical to ensure the continued regeneration of ecological and social systems in a chaotic climate where the conditions in which we take actions are constantly shifting. It also implies building inner capacities to engage with others in transforming how we support each other, work and create.

What makes transformative resilience building difficult?

Designing for transformative resilience and regeneration has no one-size-fits-all approach. There is no single vision of what an individual, a community, a city or a village engaged in transformative climate resilience should look like, as it is a new field to explore and co-create - and depends on each place, in all its dimensions: geography, biodiversity, culture, people, ways of working and organizing.

Continued from previous page

Besides, transformation is likely to modify not only how the community looks, how its people live, and how its economy operates, but also how its people think and feel.

Relevant knowledge sources for transformative climate resilience include various climate projections and scenarios, the latest science on complex and interconnected systems, natural intelligence and biomimicry, as well as research on the nexus of inner and outer transformation, psychology and trauma, cultural change, and collective intelligence processes. Besides, citizen's science and traditional ecological knowledge can highlight gaps and blind spots of modern science, while offering different visions and perspectives to explore and research. Yet, since modern science and significant parts of traditional ecological knowledge were developed during the Holocene era (i.e. the past 11,700 years) that was relatively stable from a climatic standpoint, our new era of climate instability requires us to mobilize our scientific minds to address new challenges, and to question many past assumptions. Such assumptions can also be questioned through the arts, and new ideas can emerge from individual and collective imagination.

Many successful locally-led, community-based and/or nature-based projects to build climate resilience not only in Europe but also – not least – in Africa, Asia, Oceania or the Americas, can provide critical knowledge and inspiration. Therefore, we will need to connect many different people to rethink, explore and co-create a climate-resilient world in transformative ways.

Continued from previous page

To better understand transformative climate resilience: *watch this video* on Growing resilience to the unavoidable effects of climate change by Laureline Simon from One Resilient Earth. (Length: 16:27)

Learn more by watching *this video* on "*Increasing Urban Resilience: Mainstreaming Climate Change Adaptation in Urban Planning and Governance*" by Professor Christine Wamsler talking about different types of measures like hazard avoidance, hazard reduction, vulnerability reduction, response preparedness and preparing for recovery and examples. The video explores the link between local implementation and the development of long-term resilience. (Length: 40:06)

More on nature based solutions in Urban areas, but also about the need for action at local, institutional and trans-institutional level – learn more in this video: *Sustainable Urban transformation for Climate Change Adaptation* by professor Christine Wamsler, LUCSUS, Lund University. (Length: 12:11)

Climate emotions

> *"Climate change poses an "existential threat to humanity".*
>
> *António Guterres, Secretary General of the United Nations*

The ability to skilfully navigate climate emotions – both the educators' and the learners' – is central to CLARITY and is touched upon throughout this guide, with particular emphasis in the chapter *Competence area 1: Taking care of climate emotions and trauma.* Here we introduce some of the basic concepts, for those who are new to this area.

What is climate anxiety?

Climate anxiety is a form of distress related to the climate crisis. Emotions can include those related to fear (e.g. overwhelm, panic, powerlessness, worry), sadness (e.g. despair, loneliness, loss, depression, grief, shame, guilt) and anger (e.g. indignation, outrage, betrayal, frustration, disappointment). It can lead to symptoms such as panic attacks, loss of appetite, irritability, weakness and sleeplessness.

You may also have heard about climate grief or eco-grief: a longing and sadness experienced when noticing or anticipating the loss of species, ecosystems and meaningful landscapes due to acute or chronic environmental change.

Young people are vulnerable to climate anxiety

In a study of more than 10,000 people aged 16–25, 60 percent described themselves as very worried about the climate and nearly half said the anxiety affects their daily functioning (Hickman et al., 2021). An important factor is intergenerational pain: young people feel that adults are betraying them. Recent articles have also pointed to increased levels of environmental stress and anxiety in younger children.

While some children and young people can develop climate anxiety because of direct exposure to extreme climate events, for many others it comes as a result of mundane circumstances, such as watching the news, overhearing conversations among older people, finding climate change-related information online. It can also be aggravated by attending climate change education, especially if presented with intention to "scare" learners into action – a strategy that does more harm than good.

Feeling fear and distress when discovering the existential threat that climate change constitutes is healthy, rational, and to some extent unavoidable, considering the reality and scale of this global challenge.

Is it better not to know?

It could be argued that for younger children it would be better to avoid the topic of climate change altogether, to avoid triggering anxiety. However, this is of course not tenable in the event of an extreme local event. And even in many other cases, young children will likely hear about climate change and may have

questions for the teacher that will need to be addressed in age-appropriate ways. Meanwhile, older children are likely to silently experience climate anxiety in a variety of ways that may not be visible or recognizable for the onlooker. For instance, climate denial is a common coping strategy to avoid feeling anxiety associated with climate change. Both climate psychologists and researchers working on climate change and mental health recommend having open conversations.

It's not that anxiety in itself is bad

Emotions may be welcome or troublesome, but they are what they are: neither good nor bad. If climate anxiety is a rational and valid response to learning about climate change, there are different approaches and tools that teachers and educators can mobilize to prevent it from damaging mental health.

What we wish to avoid is a child or youth getting "stuck" in a state of chronic or debilitating climate anxiety that disrupts their daily life, and makes them feel either restless or apathetic and powerless. What we further wish to avoid is a child or youth being unable to talk about climate anxiety and get the support they need, because of shame and stigma around "negativity" in their family or society, or simply because there is no space for climate emotions at school or university.

As the world around us becomes more chaotic and unpredictable, the role of the teacher needs to evolve from merely sharing scientific knowledge to acknowledging the distress that this knowledge-sharing may cause. This is a simple way to limit the damage that climate change can cause to the emotional and mental health and wellbeing of children and youth.

What causes the most harm is feeling alone with the anxiety. The simple act of acknowledging emotions and allowing them to be expressed does not require training in psychology. More challenging, but even more impactful and indeed rewarding, is the ability to accompany young people in their emotional response: to make warm relationships part of everyday school culture.

Teachers can also mobilise complementary tools that foster empowerment, curiosity and creativity without over-promising quick technological fixes or miraculous solutions to the climate crisis. Such tools are included in the CLARITY Toolbox.

The nature of trauma

A traumatic experience is one that provokes shock, fear and other immediately troublesome emotions. The experience is not always direct: it can be anticipatory, expressed as fear of future developments, or witnessed (for instance, witnessing a disaster, a physical assault, an accident). The impact on the individual or a group can never be assessed from "outside": what may seem trivial to some will be hugely debilitating for others, and vice versa.

It's safe to say that everyone at some time has had a traumatic experience. Clearly the incidence will be higher in people exposed to, say, climate disasters or acts of war; but while each experience is unique, the exposure is universal – and rapidly becoming more so, with daily witnessing via social media of disasters and crises worldwide.

Depending on the inner strength and external support available to each person, such experiences can have either negative or positive long-term effects. Negative effects can include PTSD (Post-Traumatic Stress Disorder), a clinical diagnosis of an incapacitating condition. There are many shades between PTSD and "normal" anxiety. For instance, it's normal to grieve over a loss; but for some people the grief becomes pathological and disabling, either temporarily or permanently.

At the other end of the scale, researchers have also described positive effects that can follow adversity, sometimes referred to as Post-Traumatic Growth (PTG). PTG highlights that some individuals may experience personal growth after difficult or traumatic events**.** At the same time, trauma can have deep and lasting impacts, and not everyone experiences growth in its aftermath. PTG is therefore not an expectation, but a reminder that meaningful and transformative learning can sometimes arise alongside hardship.

"There is a crack, a crack in everything.
That's how the light gets in."

Leonard Cohen, Anthem

Pedagogical implications

As noted above in the section on "The educators' role", teaching climate resilience calls upon teachers to embrace the principles of transformative learning. The methods and tools recommended in CLARITY also build upon the emergent studies of "trauma-informed pedagogy", a body of knowledge focused on enabling teachers to better understand and cope with behaviour and emotions arising from learners' exposure to potentially traumatic experiences.

The two approaches have much in common. For instance, both emphasise

- The central importance of trust, and of safe and supportive environments.
- A focus on the learners' own perspectives and choices.
- A validation of the learners' emotions, coupled with emotional regulation.
- Support for the educator's own wellbeing.

A trauma-informed pedagogy, TIP, can be looked upon as a new framework for professional educator development to include the ability to

- Recognize the signs of trauma.
- Improve the classroom environment.
- Reduce risk for re-traumatization.

Safety, transparency, and empowerment are prioritized, fostering a culture where learners feel heard and valued. The incorporation of TIP is essential, as it helps learners build emotional regulation, empathy, and coping skills – tools that are vital for climate resilience.

When such trauma-informed practices are observed, educators can help their learners not only to heal, where necessary, but to thrive, turning education into a vehicle for emotional resilience as well as enhancing learning.

For more about TIP, see Annexe A.

Competence area 1 – Taking care of climate emotions and trauma

Key competences

Emotional literacy, emotional regulation, self-compassion, compassion, trauma-informed leadership, community-building.

In this chapter we return to the key question of climate emotions and offer guidance on how to support improved emotional resilience.

Why do this?

Most of us are faced daily with news about climate change, and disasters occurring due to climate change. Climate issues can impact most school activities: from language teaching and analysing news texts, to science subjects, or dealing with learners taking part in civil society actions focused on climate change.

Most of us – teachers and learners alike – experience strong emotions when faced with information about the changing global climate. These emotions can cover a wide spectrum, ranging from those that empower us to take action, to those that induce feelings of powerlessness. All reactions are normal and can shift either with the help of specific activities or over time. See also *Is it better not to know?* above.

As a teacher, you should be aware that those emotions exist, in you and in your learners. They are there no matter what you do, and they are important to acknowledge. Simply daring to see and acknowledge them, and making it safe for learners to do the same, can be one of your most powerful tools.

In this chapter we also offer many methods and activities you can engage with yourself, and with others, to be able to better work with your own feelings and emotions over time. If the emotions make it difficult to manage your or your learner's daily life, it is important to consider seeking appropriate professional help; *see also section 1.4.*

What is the difference between climate emotions and climate trauma?

Climate change and its current impacts elicit multiple emotions in people. Such emotions are normal and to some extent unavoidable, so that our focus is on helping you as a teacher and educator, as well as the children and youth you work with, to better navigate those emotions. Different climate emotions are listed in the wheel below.

This Climate Emotions Wheel, developed by the Climate Mental Health Network, illustrates a wide range of emotions that people may experience in response to climate change.

In addition, climate change can give rise to potentially traumatic experiences in different ways:

- Experiencing an extreme event, such as a storm, flooding, or forest fire, leading to loss of lives, injuries, massive destruction or displacements.
- A "vicarious trauma", which results from "empathetic engagement with trauma survivors". This can happen as a result of dialogues or by reading stories or watching documentaries about survivors of extreme events associated with climate change.
- The awareness of living in a climate emergency, or entering a world of climate chaos that is not being adequately addressed, can also trigger a form of chronic or general "climate trauma" born out of anticipation of future devastating events.

Some of the immediate trauma responses include shock and denial. Trauma can also produce effects such as feelings of helplessness, diminished sense of self, or an impaired ability to feel a full range of emotions. People who have experienced trauma in the past, particularly in their childhood, are more likely to experience such a traumatic response.

There are multiple constructive ways to deal with trauma, which generally entail fostering connection and safety. Different methods and practices can help move from trauma in the direction of psychological growth (see Glossary: ASD, PTSD, PTG).

As a teacher or educator, you are not expected to acquire the knowledge or develop the skills to deal with the trauma that the learners you work with may be experiencing: you should not expect of yourself that you take on the role of a psychotherapist.

However, by knowing about the reality of climate trauma and some of its manifestations, you have the opportunity to work in a trauma-informed way that provides the conditions for resilience and recovery. As a minimum, you may be able to maintain a form of connection and safety that will support learners.

Why not just focus on hope? And what is meant by toxic positivity?

You may wonder why we are not just focusing on hope and being positive. Hope is indeed an important component of wellbeing.

Hope differs from optimism, which expects the best, and from blind optimism or "toxic positivity," which suppresses feelings like sadness or fear, particularly about climate change.

Young people facing hurricanes, floods, and other climate impacts may shift from hope to "blind pessimism," which can manifest as denial ("*This isn't happening*"), apathy, or despair ("*We're doomed*"). Climate psychologists view despair as a coping mechanism to regain control amid uncertainty, even if it involves accepting a grim future.

To shift to an experience of "active hope", it's necessary to acknowledge the emotions engendered by the current climate crisis while creating space to recognise the potential for personal, collective, and systemic transformation.

Space for making a difference can be created in a variety of ways. For instance, through attention to other communities and organisations working for change and regeneration, or through your own commitment to learn more about living with climate change and to shaping a climate-resilient and regenerative future. It calls for patience: the process of change takes time and can be painful; but every cultural transformation was started by a small group of people who believed and did not give up.

> *"Change is something that happens when there is a reasonable balance between hope and dissatisfaction."*
>
> *Warren Ziegler*

That space might be what is needed to create the spark for engaging in action – a space and balance between hope and dissatisfaction. This is what is meant by "active hope", including the aspiration to manifest our full potential, trust that this is possible, and an energy that is engaged in serving this unfolding for individual, collective, and planetary wellbeing. Active hope is about finding our

best way to respond when facing challenges like climate change (Macy & Johnstone, 2022).

A BIT MORE...

Active hope

Active hope – a quick description of Active Hope in *a video* by Joanna Macy. (Length: 2:04).

You can support active hope, for both yourself and the learners, by for example

- Engaging in understanding information about climate change and its causes.
- Being part of a community that is working to create change.
- Believing that society can change.
- Welcoming all the emotions that arise in the process.

In the Toolbox you find exercises that contribute to one or more of these areas. But most important is to take your own as well as your learners' feelings about climate change seriously.

Try this:
Practice emotion checks. Start by taking a few breaths breathing in through your nose and out through your mouth. Then ask yourself: how do I feel about climate change? And let the question stay with you for a couple of minutes. It can be helpful to then look at the climate emotions wheel, to sort and express the emotions. You can note your feelings, or express them by drawing a symbol, and revisit the exercise. (More inspiration in tool 1.2 and activities 1.2.1, 1.2.2 and 1.2.3)

Why is it not enough to address the symptoms?

Addressing only the symptoms of climate anxiety, such as stress or fear, overlooks the deeper issues that contribute to climate vulnerability. Tackling the causes – like environmental degradation, social inequality, marginalization, and our illusion of separation from nature – at the same time contributes to long-term resilience and wellbeing. By focusing on the systemic factors behind climate vulnerability, we empower communities to mitigate risks, adapt to changes, and reduce anxiety in meaningful ways. This holistic approach builds not only emotional resilience but also a sustainable future, addressing both personal and planetary health.

How to work with this topic

This section includes questions related to

- Wellbeing and (self-)empowerment.
- Different ways to support learners to become aware of their emotional state (emotional literacy).
- Methods and tools to help regulate emotions caused by climate change as well as emotions triggered when faced with the prospect of transformative change (emotional regulation).
- Acknowledging learners' emotions in trauma-informed ways (compassion, trauma-informed pedagogy).

Tool 1.1 – How can I foster a trauma-informed learning environment?

As a teacher beginning to work on climate emotions and climate trauma, you may feel a need for support in the form of additional information, learning material, specific training sessions, or groups. A lot of this support can be found online today, thanks to the Mental Health First Aid network, the Climate Psychology Alliance, the Climate Mental Health Network, and other global and local organisations working on mental health and young people or on climate change and mental health.

It can also be beneficial for you to join climate circles or climate cafés, grief circles or climate wayfinding courses so as to become more comfortable with navigating the emotions that you feel in relation to climate change.

Beyond that, if climate emotions make it difficult for any of your learners or for you to function in daily life, then professional help should be called in.

Perhaps your school already has a support system in place, so that you can call upon a psychologist or other professional when needed. If not, your best option is to refer the issue to your school principal to research the need and the opportunities.

If you wish to explore for yourself, you will find some resources listed on the community platform, as well as more detailed information in the activity cards.

However, as important to equipping yourself with new knowledge and resources, is your commitment to care for yourself and for your learners' health and wellbeing. Care does not require perfection. Care implies daily gestures that show kindness, compassion, openness and presence, particularly in challenging times.

Taking care may feel at odds with your own habits, your institution's culture, or your view of the teachers' profession. This cultural shift can cause resistance at first. Yet, without fully engaging in taking care of yourself and in creating a culture of safety and care among your learners, it will be impossible to support their mental wellbeing. Furthermore, all the activities we suggest below could become ineffective at best and (re-)traumatizing at worst.

Creating a culture of safety and care

In order to foster a trauma-informed learning environment, it is essential for the teachers to start establishing a culture of safety and care with their learners. This implies both modelling this care for themselves, as well as acknowledging the learners, and being present for them on a daily basis. The teacher will also need to deepen their understanding of emotional wellbeing, of how their own nervous system can become overwhelmed, and of the resources they can mobilize to restore and maintain their own emotional wellbeing. Having strong emotional support systems in place, both for the teachers and for the learners, is critical to helping everyone navigate climate emotions and climate trauma safely. Hence,

the teacher will have to research, access and/or establish such support systems within the school and beyond.

Recognising and tackling your own dysregulation

If you are experiencing severe stress and acute nervous system dysregulation yourself, it will be almost impossible to support your learners in navigating their own anxiety or overwhelm. Yet, it can be difficult to be calm and centred when a learner is experiencing acute emotional dysregulation. This activity gives multiple ideas of quick actions you can take discreetly, while in the classroom, or with your group of learners, so as to self-regulate in one minute. However, practicing those actions, as well as some complementary exercises often, including outside of crisis situations, is key to undertaking those actions rapidly and effectively when self-regulation is needed.

Helpful scripts

The *helpful scripts* activity card is meant to support you in a number of possible situations related to emotional dysregulation, including as a result of climate trauma. The scripts help maintain connection and a feeling of safety with the learner experiencing the trauma symptoms. It will also ensure that the other learners feel safe while you are taking care of the traumatized learner, in case you need to do so during class. They are not meant to address every situation but to give you some guidance regarding the language you could use to make the situation less stressful for all involved.

Tool 1.2 – How can I help limit climate anxiety among learners?

As a teacher tackling climate change, your role is not to monitor the possible climate anxiety of your learners but to acknowledge emotional responses that come with the topic, and provide safe spaces for learners to connect with and express their own emotions. Those moments of emotional awareness, expression and/or release in a space where they experience safety and connection is one way to limit stress and the build-up of anxiety. It also fosters empowerment.

"Safe space" implies that you, the teacher, are comfortable talking about emotions, feeling emotions and allowing others to express emotions. It entails that you are aware of your own capacity for emotional regulation. It also implies choice: learners should be given the opportunity to engage or not engage in those activities, as well as whether they would like to share their emotions with the group or keep them for themselves.

This is important. There should be neither judgement, nor pressure for any learner to express emotions publicly. Neither should there be any hint of punishment or coercion if or when a learner expresses emotion or distress in ways that might disrupt the usual expectations of behaviour.

Climate emotions wheel

The climate emotions wheel can support learners in building emotional literacy in relation to climate change by providing a clear representation of the range of emotions they may experience. Working with climate emotions in this way can reduce stress when learners encounter climate-related topics, helping them understand their emotional responses. The wheel also opens up for acknowledging emotional differences between learners as well as how feelings may change over time. As a foundational tool, it supports the development of emotional literacy, allowing learners to recognize and process their emotions more effectively.

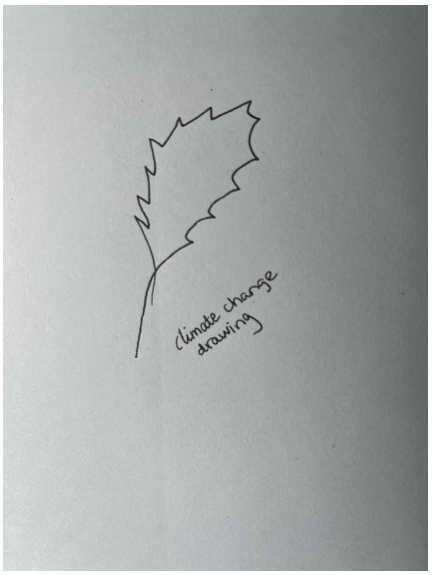
As a simple graphic representation of climate emotions, the climate emotions wheel could also be put up in the classroom during classes related to climate change.

Teachers working together with the climate emotions wheel in their local Community of Practice (CoP).

Photo: Tetiana Byts

Emotion checks

The emotion check is the first step to emotional awareness. It enables learners to familiarise themselves with the emotions that are emerging in their body and that are likely to influence their actions and relationship with others whether they are aware of them or not. It also highlights the importance of this awareness for them when interpreting a situation or making decisions.



An example of a climate emotion symbol.

Photo: Marte Maurabakken

Emotion symbols

The emotion symbol activity is a playful way to explore climate emotions. It should only be practiced among learners who are willing to share symbols of their emotions, and interpret those symbols; or in small groups created by the learners based on affinity. Because of its creative nature, and the fact that interpretations are expressed, it can help include learners who may feel they have no emotion to share. The activity also contains an element of novelty and improvisation that can pique learners' curiosity and trigger a sense of wonder.

Emotion embodiment

Emotion embodiment is a powerful exercise for feeling and expressing deeply held or hard-to-articulate emotions. It is one of the most intense activities in the Toolbox and should only be used with learners aged 18+ who are comfortable sharing emotions with the group. The teacher should have practiced the exercise and be prepared for its emotional intensity.

Learners should be warned about the emotional intensity and given the option to stop at any time. It is essential that they are familiar with breathing exercises and other emotional regulation techniques. Information about community care or medical support should also be provided.

It is worth considering this approach despite the "warnings" because for some, it can be an important liberating experience.

Tool 1.3 – How can I support learners' emotional regulation?

General support

In order to build solid foundations for emotional and mental wellbeing, it is critical to share practices that can be implemented on the spot to help regulate strong emotions, or calm down stress and anxiety.

We should also emphasise the importance of taking care of one's own emotional and mental wellbeing through more regular practices. Teachers have an important *co-regulation* role: a calm nervous system shown through kindness and warmth creates safety and regulation for the learners without even talking about feelings. The atmosphere in the relationship and the everyday response that learners receive from teachers is the most foundational part of offering support for climate emotions.

The activities described in the 1.3 tool have multiple benefits for children, youth and ourselves as teachers and educators, as they can help address any situation of emotional dysregulation, whether related to climate change or to other crises. They are easy to implement as a group when time is limited. They complement each other, and contribute to building individual skills for each learner to do what is best for them to keep their nervous system regulated.

This contributes to acknowledging that different learners will have different levels of sensitivity to various types of information about climate change, and different emotional reactions to such information, as a result of multiple factors including neurodiversity and past trauma. For more on this topic, see Annexe A: Trauma-informed education.

Before or after the activities in tool 1.3, it's important to provide a space for learners to bring up what they are experiencing, and to give them access to additional resources when relevant.

Breathing and other contemplative practices

Contemplative practices help to familiarise us with our own mental processes, understand the link between head, heart and body, and how this relates to external factors and processes. Such practices exist in all cultures and traditions. Simple breathing exercises are concrete examples. With intentional breathing, when our outbreath is longer than our inbreath, we can calm our nervous system. More advanced practices, including meditation, can increase our awareness, insight, connection, purpose and agency, all contributing to transformative learning.

If some learners resist taking part in a breathing exercise, their choice should be respected. Trauma can make it feel unsafe to breathe deeply, particularly in a group. Learners should be free to stop participating in such an exercise at any time.

DIVE DEEPER

Contemplative practices, mindfulness, and education

Contemplative practices – including mindfulness – can help both teachers and students cultivate presence, emotional regulation, attention, and compassion. These abilities are central to climate-resilient learning: they strengthen wellbeing, deepen connection, and support wise, grounded action in times of uncertainty.

The following resources offer clear introductions to the field:
Mindfulness and sustainability – scientific and educational perspectives
An online session featuring Jon Kabat-Zinn, including a presentation on the scientific links between mindfulness and sustainability, as well as related educational initiatives. Watch here. (Length: 1h 51 minutes)

Mindfulness and sustainability – policy insights
A policy report from The Mindfulness Initiative, outlining how contemplative practices can support behavioural change, collective wellbeing, and long-term sustainability. Read more here.

Calming body movements

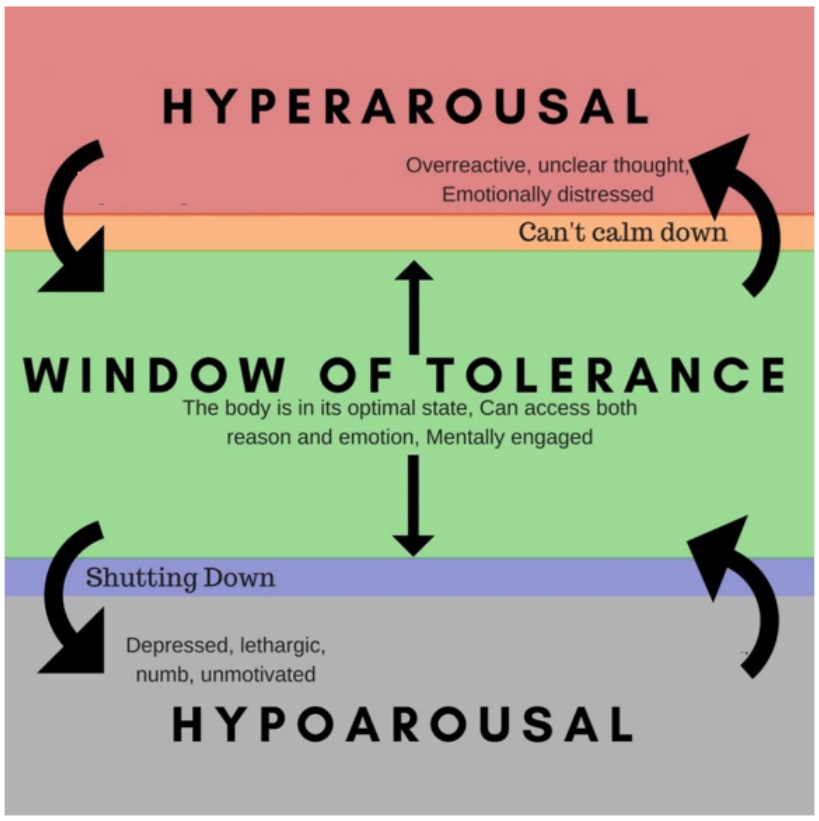
Calming body movements are very effective in regulating our nervous systems when little time is available, and are safer than breathing exercises with learners who have been exposed to potentially traumatic experiences, and who could experience enhanced nervous system dysregulation as a result of deep breathing. They are also helpful for children and youth who may have difficulties being still, sitting down, or engaging in contemplative practices. Because they engage the body, those activities may need to be adapted for learners with physical disabilities.

Tool 1.4 – How can I help foster emotional regulation in the long term?

Bad news associated with climate change will no doubt continue to reach your learners. To prevent this from affecting their ability to engage in the world, you can help them to build regular individual practices of emotional regulation.

Some activities tailored to specifically address the climate change/mental health nexus can help. The activities in 1.4.2 *Creative practices* are accessible to all age groups; activities such as Climate Circles and Grief practices are better for older learners.

Over time, these activities coupled with those covered under 1.3 *Moving to reduce climate anxiety* are meant to help expand our *window of tolerance* for new information and multiple emotions associated with climate change, as shown below.



Source: Richard Bamford 2019, by Dan Siegel

The activities and practices listed below should ideally be undertaken regularly to enhance their results, although it is human to revert to them only when being in distress. As a teacher, it could be beneficial to schedule them regularly for your learners and for yourself. Learners can also be enrolled to help organise and run some of them for their peers (e.g. climate circles or cafes).

Climate circles/cafés

Climate circles or cafes can be undertaken with older learners who choose to engage with climate emotions through open sharing and deep listening. The activity gives space for exploring emotions, which is a key to developing empathy and compassion towards oneself and others. Artistic practices can easily be integrated into climate circles.

Such circles should be run by a host or facilitator who has been trained or at least has participated in multiple climate circles themselves; and who has access to support or supervision.

Creative practices

Creative practices can be integrated into climate circles/cafes, complement them, or – for younger groups – replace them. They open a space for any emotion related to climate change to be expressed, through various arts-based techniques and creative means. They can remain an individual exercise in groups where vulnerable sharing could be difficult or problematic. They can help provide an overall picture of the emotions of the whole group, and if conducted regularly, can offer a glimpse into the evolution of the emotional and mental wellbeing of the group.

In this regard, it should be noted that expressing emotions through the arts is meant to be cathartic and not judged for aesthetic or other qualities. The fact that some representations of emotions can be very dark can be seen as a healthy process of navigating complex emotions, and should be looked at within a broader context of the learner's engagement or disengagement with activities and the group.

Grief practices

Climate grief, often experienced as a deep sorrow for the loss of the natural world, is a powerful emotion many learners and teachers may face. This grief can be linked to solastalgia, a term that describes the distress people feel when their environment is degraded or changing rapidly. Acknowledging and expressing this grief is vital for emotional wellbeing, as it helps individuals process potentially overwhelming feelings of loss and helplessness.

Creating space for learners to explore and express their grief fosters resilience, empathy, and a sense of empowerment, encouraging them to develop healthy practices for coping with the emotional impact of climate change. It can also liberate new energy to engage in exploring ideas and actions for more just, climate-resilient and biodiverse worlds.

Competence area 2 – Nurturing relationships

Key competences

Empathy, presence, self-reflection, interconnectedness thinking, critical thinking, systems thinking, compassion, authenticity, nature connectedness.

In this chapter, we provide guidance on how to deepen relationships, not least those with animals and other more-than-humans; and improve skills that contribute to wellbeing and cooperation.

Connectedness is key to this Competence area – and it's about understanding that one of the root causes of the sustainability crises lies in a culturally entrenched story of separation: in the separation between mind/heart/body, culture and nature, and between human beings. To better address these crises, it is essential to not only focus on outer solutions but to nurture inner qualities and abilities that are crucial to connect with oneself, others and nature. Addressing these aspects of connectedness supports cooperation, which is critical to resilience.

There are many ways of coping with anxiety, but a universal recommendation is to build and maintain positive relationships – whether with oneself, with other people, or with all other living beings. This chapter introduces methods and tools to support you and your learners in nurturing your relationship to yourself as well as to other beings for building climate resilience and regeneration – topics that are deepened in *Competence area 1 – Taking care of climate emotions and trauma*.

Why do this?

The practice of nurturing relationships is indeed not only useful for coping with anxiety. Many studies show that connections, including human ones, are the strongest determinants of happiness and wellbeing. The understanding of

interconnectedness and interbeing can fundamentally transform not only our drive towards climate action but also our capacity for joy and wellbeing.

Try this:
For nurturing your own relationships – practice a "sit spot". Make time for yourself and find a safe place where you can sit undisturbed. Ideally you have access to a spot outdoors, a forest, a meadow, a lake or a park. Or choose to stay in a quiet corner with some plants.

Close your eyes and take three deep breaths. Then slowly open your eyes and observe your surroundings, noticing the sounds, the ground beneath you, the leaves on the plants. Note your observations in a journal. (This is a short "just-test it" version of the Sit Spot practice, activity 2.4.2.)

By practicing this kind of activity, we get the opportunity to nurture the relationship between the thinking mind, our feelings and our bodily emotions – and it is also a way to bridge the separation between ourselves and nature over time. It reminds us that we are a part of nature, as are the leaves of the trees, the fish in the lake and the gravel beneath our feet.

DIVE DEEPER

Nurturing inner development

Watch Christine Wamsler talking about "*Nurturing Inner Development for Sustainability*" (Length: 5:50) and learn more about how inner personal development contributes to collective and system change by addressing three key aspects:

- The nature of our current sustainability crisis.
- The nature of the complex systems involved.
- The associated mind-sustainability nexus.

Continued from previous page

For educators who wish to delve deeper into the scientific foundations of contemplative practices, sustainability, and climate resilience, you can explore a curated list of academic articles and research summaries in an overview of scientific work on contemplative practices and sustainability.

This collection provides an accessible entry point into the growing body of research connecting inner capacities – such as attention, emotion regulation, and compassion – to transformative learning and sustainable futures.

How to work with this topic

The ways of nurturing relationships are many, from the primarily mental (critical thinking, active listening) to the action-oriented, as well as making space for emotional and spiritual aspects.

We offer guidance on ways to support learners to:

- Explore information about the climate crisis, and question narratives of separation through relational stories.
- Engage in creative activities in groups, and/or hands-on activities in nature, allowing them to experience interconnectedness.
- Share their own authentic stories to be able to grow their agency and access their inner strengths, as a path to increased compassion and nurturing relationships.

The guidance is related to sections 2.1–2.4 in the CLARITY Toolbox.

Tool 2.1 – How can journalling support nurturing relationships?

Not only the earth has a climate: within each of us also exists a "climate" that is composed of thoughts, emotions, and lived experiences. It is often the case that inner climates remain unseen, unheard, and unacknowledged, which can lead to

a disconnect between the individual's inner self and that which is "outside" of oneself. When the inner climate is turbulent, a person might find it difficult to connect with the outer climate, and also have difficulties with nurturing their connections to others.

Inner climate journalling is a tool that can help those struggling with their inner climate by allowing them to express their thoughts, emotions, and lived experiences in a way that allows for self-acknowledgement and self-reflection. In this way, it serves as a bridge between that which resides within, and that which resides without.

Learners journalling in nature.
Photo: Carmelo Zamora

Gratitude journalling is another powerful tool, enabling a focus on the positive and contributing to better relationships. Showing gratitude is not about ignoring difficult issues and emotions in life and pretending that everything is fine, but about also appreciating and recognising (small) positive things in life. Writing a gratitude journal regularly opens up for an opportunity to change mindset and build resilience towards stress.

Tool 2.2 – What is the role of storytelling in teaching about climate change?

Storytelling allows us to make sense of ourselves and the world. Through storytelling we get to experience bodily sensations, raw emotions, and personal memories. In this way, storytelling helps us see the larger picture and share our experience. This process is especially important for children and youth when they are experiencing strong emotions, such as climate anxiety.

Simply naming a feeling helps calm down the emotional activity in our brain. When experiencing strong emotions, we need to activate our brain to understand how we feel, and move towards a place where we experience less emotional stress. This way, storytelling can help us deal with climate anxiety and find hope in times of crisis.

Listening to compelling stories grows our capacity to empathise with others. Your brainwaves actually start to synchronise with those of the storyteller as the story unfolds. Climate change is a justice issue, where marginalised people – not least women, children, and minorities in or from the Global South – are contributing little to the problem while they are hardest hit by the consequences. People across the world connect through stories, and in such storytelling can grow the learners' understanding of climate justice.

Learners working on and telling their climate emotion stories.

Photo: Marte Maurabakken

Storytelling also allows us to be imaginative and create change. While all cultures tell stories, stories also shape culture – it's a two-way process. We cannot create what we cannot imagine. So, to create a climate-resilient and regenerative future, we can use our imagination to tell new

stories about desirable futures where people and the planet thrive. Telling stories of impossible or incredible worlds can also help us identify the assumptions and biases we hold about the future and that are preventing us from creating regenerative worlds in the present.

Tool 2.3 – Why is it important to relate to animals?

Many of us – even those who would typically consider ourselves empathetic individuals – have only an instrumental relationship with animals. Unlike the worldview of most Indigenous Peoples, we recognise primarily animals that people eat, animals that people own as pets, and animals that people keep in zoos or watch in documentaries. There is no general outrage over the fact that on average, one animal species goes extinct every single day.

The practice of relating to animals cannot yet limit this loss, but it can help people understand both their own position in this world, and the importance of the interconnectedness that exists between all living beings.

The notion that humans are apart from nature is strong in many cultures, to the extent that children will sometimes refuse to believe that humans are animals too.

Through developing a closer relationship to specific animals or species we come to see that other animals express emotions and intelligence too. We see the curiosity of a newborn lamb, the problem-solving skills of a magpie reaching for berries through a net, or the ingenious dance of bees communicating with their co-workers. Reflecting on such observations, we come to see these animals less as "others" and more as our relatives. In the big evolutionary tree of life, we are family after all.

And we have a lot to learn from our animal relatives. For example: can you imagine what it might be like for a polar bear to prowl through the arctic ice? How does that experience change as their icy home melts and their territory to find food shrinks along with it? The people living in a low-elevation coastal area can perhaps empathise with the polar bear, as both are forced to watch as their homes are flooded due to climate change.

Tool 2.4 – Finding new ways to spend time and connect with nature

For personal health and wellbeing

Physical activities in natural settings boost energy levels, support cardiovascular health, and enhance immune function. Activities such as hiking, canoeing, or climbing a tree encourage individuals to step out of their comfort zones. These experiences build inner strength, adaptability, and resilience.

Spending time in nature can take many forms – sitting quietly and observing, breathing with the rhythms around us, or creating art with natural materials. Each practice helps us slow down, notice more, and deepen our sense of connection with the living world that we are a part of.

Photo: Tetiana Byts

Nature experiences also help reduce stress, anxiety, and depression by promoting relaxation, contemplative practices and mindfulness. They foster emotional resilience and enhance self-awareness by providing a calming environment to reflect.

Exposure to nature has also been linked to improved cognitive function, creativity, and focus. Practicing forest bathing has been proven to improve our immune systems thanks to phytoncides produced by trees. Ultimately, time in nature nurtures both emotional balance and overall health.

Building an active relationship to planetary health

Being outdoors is likely to deepen a commitment to nature conservation and climate action by fostering a direct, tangible experience of nature's beauty and fragility. Time spent regularly in nature enhances our understanding of environmental changes, such as biodiversity loss or extreme weather events. Witnessing these changes first hand strengthens our emotional bond to the planet and motivates us to protect it. Time outdoors also encourages sustainable practices, as we become more mindful of the ecosystems we impact and the need for collective action to preserve them for future generations.

Learners spending time in nature and giving voice to trees:
„When you protect me, you protect yourself" and „You can have a rest under my shadow, protect me".

Photo: Ivanna Budivska

Competence area 3 – Values that sustain all living beings

Key competences

Self-reflection, presence, deep-listening, active listening, humility, integrity, inner compass, perspective-taking, authenticity, empathy.

In this chapter we offer guidance on how to broaden mindsets and support learners to experience and appreciate cultural and other differences.

The activities suggested here are most appropriate in lessons on civics, ethics, or similar subjects. However, there are also opportunities for fruitful integration into other subjects, as listed in the Toolbox.

Why do this?

Tackling climate change is not only a matter of science and policy; it is the result of deeply embedded values and beliefs. Values, at their core, shape how we perceive the world and nature, how we interact with it, and what we prioritise. How we understand and relate to nature is determined by the values we hold, whether explicit or unconscious.

When we refer to the "inner dimensions" of sustainability or climate change, we are talking about our mindsets, that is: the individual and collective values, beliefs, and worldviews that guide our behaviour, and the inner capacities (cognitive, emotional, relational) that influence these. Our inner dimensions influence how we perceive our role in nature and how we choose to act – or not act – in the face of ecological crises. Building awareness of our values is thus crucial, because our deeper, often invisible values determine how we act in situations of uncertainty and volatility, or when there is no blueprint for action.

This chapter is intended to help address the value–action gap: the discrepancy between what people believe is important, and their actual behaviour. Many of us recognise the importance of nature, the urgency of climate action, and the

need to protect our planet, yet our behaviours often fail to align with these beliefs.

Another question to address is why we wish to protect nature or take climate action. Who will benefit from our actions? Whose and which lifestyles and social order are we trying to maintain? How much are we ready to give to stand for our values related to environmental protection as opposed to other values that determine our actions?

For instance, many modern societies operate under a worldview and associated values that positions humans as separate from and superior to nature, which is viewed as an external entity to be controlled and exploited. Moreover, colonialism and other belief systems have assigned different values to individuals based on skin colour, gender, age and ability. This mindset not only perpetuates environmental degradation but also fosters a sense of disconnect that makes it difficult to relate to the planet's needs and connect with other people with respect. In contrast, Indigenous Peoples tend to hold values that emphasise interconnectedness, reciprocity, and respect for the earth. Understanding what those values rest upon, and how they are transmitted and embodied, can be very helpful in addressing climate change because they enable a more holistic and sustainable relationship with the environment.

By reflecting on our own worldviews and associated values, we can begin to unearth the assumptions that guide our choices. The Toolbox contains *The Iceberg Model*, which posits that visible behaviour is just the tip of the iceberg while individual and collective inner dimensions lie beneath the surface; a metaphor that can help us to understand the root causes of what we "see" in the world, that is: the various sustainability issues and crises we see, and the values, assumptions and beliefs we and others hold that underlie them. By examining the layers of the iceberg – from observable actions to deeply held values – we can gain a clearer understanding of how our inner dimensions influence the actions we take.

At the same time, we need to recognise that other people may hold different values. As we explore our own values, we need also to practice openness and acceptance of others' perspectives. Large-scale climate action can only be achieved by bringing people together; it requires collective effort and understanding. Engaging in dialogue about values, whether through listening or

questioning, creates space for more inclusive, diverse approaches to sustainability, and builds our ability to work within this diversity of approaches.

Exploring and reflecting on values also plays a critical role in fostering resilience in the face of climate anxiety. When we are able to align our actions with deeply held values, it fosters a sense of agency and purpose that can help alleviate feelings of helplessness. By recognising that our individual and collective values determine the actions we take in the present and thus shape the future we want to create, we can build the inner strength to face the challenges of climate change with a sense of hope and determination.

Try this:
Listen to your own values.
To do this, you can listen to this guided introduction to Deep Listening. Listen to your own values – or to another question of your choosing.

In brief, working with values is not just about changing what we do, but transforming how we see and relate to the world around us.

How to work with this topic

In this section we offer guidance on:

- Ways to explore the values that matter to learners and how individual values are linked to intrinsic values (e.g. fairness, justice, compassion) that support transformative resilience (self-reflection).
- How to encourage deep or active listening in the learning environment to grasp the learners' needs and best support their health and wellbeing (presence, deep listening).
- How to respect learners' intrinsic values and commitment to doing what is right even when it is difficult or unpopular (integrity, inner compass).

Tool 3.1 – How can we re-connect with nature?

We have not taken other life forms into account when designing our modern social, economic and political systems, beyond their use to meet our needs. This fact highlights one of the root causes of the environmental crisis that we are experiencing today.

There is, as noted earlier, a disconnect between "modern" humans and the living creatures around us. And yet we are all dependent upon each other. The air that humans breathe is the same air that plants have "breathed out" through photosynthesis. The water that humans drink is the same water that flows through springs, rivers, aquifers, and falls as rain. Everything that humans eat and gain sustenance from, is another life form, which has lived and shared that same experience of existing with us on earth. Every product that humans own or use has come from the earth in one way or another.

Our cities and houses are no more separate from nature than the wolf's den, or the rabbit's burrow. Humans belong to nature – and the systems and cycles which sustain it – just as every other creature and life form that exists on this planet. Our technologies require massive amounts of energy and create life-threatening pollution, yet still cannot replace the services that ecosystems provide.

Tool 3.2 – What makes Indigenous Peoples indigenous and what can we learn?

Indigenous Peoples are communities who have experienced colonisation but still carry a deep sense of responsibility for the lands they have inherited from their ancestors – both ecosystems that have been exploited and those that have remained relatively intact. It is important not to exoticise Indigenous cultures, but rather acknowledge diverse knowledge systems and practices as an essential part of our shared efforts toward a greener, more climate-resilient and regenerative world. Knowledge shared with us by Indigenous Peoples should be valued deeply, and acknowledged for its multiple benefits.

As outlined in the Martínez Cobo Study (1986), a commonly referenced working definition of Indigenous Peoples was developed under the auspices of the United Nations describing them as peoples who:

- Have a historical continuity with societies that lived in a territory before it was invaded or colonised by others.
- Consider themselves distinct from the dominant populations now living in that territory.
- Seek to preserve, develop and transmit their ancestral territories and ethnic identity to future generations.

From a teaching perspective, learning from Indigenous Peoples can be a critical moment in opening up to new ways of being, relating, working and organizing in the world. However, it also requires learning from histories of colonialism, and how they translate into our current relationships with Indigenous Peoples and their knowledge systems and practices.

There is still a tendency to approach Indigenous Peoples' knowledge systems and practices in ways that fail to acknowledge their fundamental difference from modern knowledge systems and practices. We are invited to learn from Indigenous Peoples – but not to extract, appropriate, or colonise their knowledge. Indigenous knowledge is collectively held and expressed through diverse forms: oral traditions, storytelling, land-based practices, art, and increasingly through academic research, including by Indigenous scholars with advanced degrees. It is living, evolving, and grounded in specific communities. Much can be lost in translation – both linguistically and culturally – so true learning must be rooted in respect, humility, and consent.

Helping learners to connect with the reality of the roles and worldviews of Indigenous Peoples can be a powerful pedagogical moment, as long as the teacher is able to transmit their current situation rather than perpetuating old or new stereotypes and oppressive dynamics. The onus is upon the teacher to learn about the histories of colonialism, and how they translate into our relationships with Indigenous Peoples and their knowledge systems, before engaging with them.

The preparatory work needed for these activities should be carried out by teachers and educators and by no means expected to be performed for free by Indigenous Peoples themselves.

DIVE DEEPER

Indigenous communities worldwide

Before exploring Sámi, Inuit and other Indigenous stories, it's important to understand what connects Indigenous communities worldwide:

Connection to land

Indigenous Peoples have a special relationship to the land and waters, a relationship that other societies often lack. Rather than viewing land as property to be owned, bought, and sold, Indigenous communities understand themselves as being in reciprocity. As one way to think about it: you don't own your parents and grandparents, but they are yours through deep, unbreakable bonds of relationship and responsibility. This relationship-based understanding of land has enabled Indigenous communities to be such effective guardians of the world's biodiversity.

The impact of colonisation

What unites Indigenous Peoples across the globe is the shared experience of colonisation – the process by which outside governmental powers took control of their lands, imposed foreign systems of governance, religion, and education, and attempted to erase Indigenous languages, cultures, and ways of life. This common experience of dispossession and cultural suppression is why we use the term "Indigenous Peoples" to describe diverse communities from the Sámi of northern Europe to Aboriginal Peoples in Australasia to Indigenous Peoples of the Americas.

Continued from previous page

Such colonisation has often brought with it another kind of abuse, at the hands of people and organisations: for instance, anthropologists who make money by unauthorised publication of knowledge from the communities they study, companies exploiting plants known by Indigenous Peoples for their medicinal properties and damaging precious ecosystems, and entrepreneurs who create and benefit from tourist attractions based on local festivals.

Traditional mobility and seasonal living

Many Indigenous communities traditionally followed seasonal patterns of movement, following animal migrations, seasonal plants, or weather patterns. This nomadic or semi-nomadic lifestyle reflected deep knowledge of the land and sustainable ways of living that supported both human communities and the natural world for thousands of years. These traditional practices demonstrate sophisticated understanding of ecological relationships that modern environmental science is only beginning to appreciate.

Why listen to Indigenous stories?

Indigenous Peoples maintain knowledge systems developed over millennia about living sustainably with the land. Their stories carry wisdom about relationships – between people, between humans and other beings as part of nature, and between past and future generations. In a time of environmental crisis, these perspectives offer crucial insights about caring for our shared planet.

As communities that have successfully maintained ecological balance for thousands of years, Indigenous Peoples hold knowledge that may be vital for addressing climate change and environmental degradation. Listening to their stories is a privilege that brings with it a responsibility to use their knowledge for the wellbeing of all.

Watch videos to dive deeper

Watch this 5-min video to dive even deeper, a TEDx-talk given by Laureline Simon on transformative climate resilience and the importance of building "right relationships" with Indigenous Peoples when working together. (Length: 5:57)

Jihan Gearon builds upon her experience as an Indigenous artist and activist to highlight all that we need to unlearn from an Indigenous perspective – *watch it and maybe think about what you need to unlearn* and practice. (Length: 13:55)

Tool 3.3 – Why and how can we learn to be better listeners?

Probably everyone has had the experience of telling another person something really important, and then realising that the other person is not really listening. They may be distracted, playing with their phone; or interrupt to tell you about how they had "just the same experience" (it wasn't), or start giving you advice that you didn't ask for.

Many people have also experienced a really good listener. What a difference it makes! When someone truly listens, your story takes shape. You begin to see things differently, you begin to feel differently. When we listen deeply, we can tap into the speaker's and our own deepest/ intrinsic value.

Listening to other people meets basic human needs for relationship, promoting belonging and safety, and offering some support in case of anxiety and trauma. Our common experiences underscore the immense value of effective listening – a skill that can transform our teaching practices: not only enhancing communication but also nurturing a richer and more supportive classroom environment.

We can all learn to be better listeners. The key techniques offered in the Toolbox are useful in different situations: Active Listening, Deep Listening to others, and Deep Listening to oneself.

Incorporating these techniques into our practices as educators not only strengthens our ability to connect with learners, but also equips them with essential skills for navigating their own relationships. Ultimately, by committing to becoming better listeners, we pave the way for a more compassionate and understanding educational experience, one that opens to honour the voices of all beings. Every voice is valued, and every story matters.

A BIT MORE...

Listening techniques explained

A short *video* (Length: 3:05) introducing listening techniques.

Active listening

Active Listening is a practical and accessible skill that can be employed with learners of all ages. It is quick to teach and easy for learners to grasp. It is an approach that not only models' effective communication but also reinforces a sense of community in the classroom.

Deep Listening to others

Deep Listening to others goes beyond initial responses, fostering a deeper understanding between the speaker and

Learners listening to each other.
Photo: Marte Maurabakken

the listener. It is basically for adults but has been successfully used with groups of teenagers (from 14 years old) who were particularly motivated. This technique helps educators and learners alike to explore complex emotions and thoughts, leading to deeper insights and relationships.

Deep Listening to oneself

Deep Listening to oneself enables direct access to what is sometimes called intuition, or inner wisdom. Such access can otherwise take time or seem out of reach. Many languages have an expression like "I'll sleep on it". An experienced deep-listening practitioner can both find quicker "answers", and feel greater confidence in their relevance. Deep Listening to oneself, independent of others, is an effective practice for self-awareness. We suggest that you as an educator practice this by yourself before using it with others.

Tool 3.4 – Why are worldviews part of the problem?

Our worldviews help to explain why the way we address crises today is part of the problem, leading to ever more exploitation of nature and people.

Exploring our worldviews, including our individual and collective values, assumptions, and beliefs, helps us understand why we think and act the way we do. This self-awareness allows us to recognize biases and blind spots, promoting more open-mindedness and critical thinking.

DIVE DEEPER

Confronting climate colonialism

Watch this video where Dr. Sharon Stein, a member of the Gesturing Towards Decolonial Futures collective, introduces pedagogies for confronting climate colonialism and imagining other possibilities. (Length: 14:47)

By challenging unexamined worldviews we can adapt to new information, become more empathetic towards others, and make more informed, conscious decisions. In contexts like climate change, exploring our worldview empowers us to challenge the systems and structures limiting transformative climate action, reframe the climate crisis, and see new solutions, fostering personal growth and positive change.

Many young people feel powerless when faced with huge challenges like climate change, holding the belief that "there is nothing we can do about it". Exploring our assumptions about what "power" is can help learners to think differently.

> *"Power is not brute force and money; power is in your spirit. Power is in your soul. It is what your ancestors, your old people gave you.*
>
> *Power is in the earth; it is in your relationship to the earth."*
>
> *Winona LaDuke*

The Iceberg Model illustrates that what we can see – the part of the iceberg that is visible above the surface – are the events or crises that define our world today. But much more – around 90% – of the iceberg is invisible to us. In human terms, what is hidden beneath the surface are the underlying aspects (patterns of behaviour, systems, and mindsets – the "inner dimension") responsible for creating the events or crises that characterise our world today.

Tool 3.5 – Cognitive dissonance, and ways to avoid it

What happens when you hold cherished values – for example about the sanctity of human (or other) life – but your actions don't live up to your values? To some extent this is true of almost everyone: the systems and structures in which we are entangled often promote or reward dissonant behaviour. When the dissonance becomes too great, or continues for too long, there may be consequences in terms of, for example, depression or anxiety. People who

experience dissonance but have no way to address it may also feel powerless or guilty.

Avoiding, delegitimizing, and limiting the impact of cognitive dissonance may result in a person not acknowledging their behaviour and thus not taking steps to understand and address the dissonance. By doing so, they are likely to continue to cause harm to themselves or others.

However, cognitive dissonance can also be a tool for personal and social change. Drawing a person's attention to the dissonance between their behaviour and their values may increase their awareness of the inconsistency, empower them to examine the limits of their own responsibility, and to take action within those limits – or to push those limits collectively.

Practising strengths

The real strength of superheroes is not their supernatural abilities, but the values that guide their actions. Martha and Jonnathan Kent taught Clark to act from love and compassion, as an antidote to greed and dominance. Humans do not have Superman's speed or X-ray vision, which makes it even more inspiring to see ordinary people act from a place of compassion, even in the most dire of circumstances. Practicing our values - our strengths - in our everyday life, is what prepares us for those situations in life where we are given the opportunity to step up and into roles of great responsibility.

The value-action gap

The unreflecting adoption of values rewarded by society is hardly surprising but has two seriously negative consequences. Firstly, it reinforces the existing culture even when that – as now, in most countries – is failing to grapple successfully with ongoing crises. Secondly, it is a source of individual and collective stress reflected in the so-called value-action gap: for instance, when schools teach about climate yet seem only to focus on knowledge transfer, telling young people that their whole future depends on exam results.

Many young people today spend a great amount of time on their smartphones, engaging with like-minded individuals on social media or other online communities. A consequence is that for many children and youth, school may be one of the few arenas where they meet people who challenge their views.

Opening up to learners expressing their values can stir controversy in the classroom, and it is important to meet the expression of controversial values with non-aggressive dialogue.

Supporting the search for purpose

Each of us has a different role to play when it comes to fostering climate resilience and regeneration. We are long past trying to decide on THE most impactful action to limit greenhouse gas emissions. We already know that the more we strive to reduce emissions in all areas of our lives, the better it will be for all (including plants and animals) since every fraction of a degree of global warming has massive impacts.

Similarly, we will need to lead our lives differently, perform our jobs otherwise, and invent multiple new careers to give life to more climate-resilient and regenerative communities and ecosystems.

Ikigai is a Japanese concept that can be interpreted as "life's purpose" or "what makes life worth living". The ikigai method focuses on identifying the intersection of what we love, what we are good at, what we can be paid for and what the world needs.

It offers a creative way to help young people as well as teachers and educators identify how they can contribute to deep societal transformation.

Working with Ikigai invites us to explore the meeting point between our passions, our strengths, and what brings meaning to others – a space where purpose and wellbeing can grow together. This illustration draws on the many visual interpretations of Ikigai found around the world.

Having a clear picture of our purpose, and reconnecting with our original drive, enables long-term engagement while limiting risks of burn-out.

Try this:

Whenever you have a moment, spend a little time reflecting on each of the four main questions and jotting down your answers:

a. What are you passionate about? What do you love?
b. What does the world need?
c. What are you good at?
d. What can you be paid for or find resources for?

When you summarize your jottings into the ikigai structure you may find it useful to verbalise the central field, the ikigai. Reflect on how you might have responded to these questions when you were the same age as your learners.

Competence area 4 – Opening up to diverse futures

Key competences

Futures literacy, imagination, originality, adaptability, regenerative thinking, exploratory thinking, perspective-taking, active hope.

In this chapter we explore *futures literacy* as a way to support learners in using their imagination to expand their own perspectives on reality.

Futures literacy develops our ability to "play" with different perspectives, including parallel worlds and alternative futures. Imagination is a key competence for transformative learning as well as for transformative climate resilience. Learners who are able to identify and challenge their own assumptions, whether about the future, the present, or the past, are less likely to fall into apathy or despair. Moreover, they can feel inspired by the possibility of creating the desirable future they dream about. They could also develop a more playful approach to exploring futures or being in situations that do not go as planned, by experiencing spontaneous opportunities for connection and learning.

Why do this?

It's tempting to sit back and wait for scientists and experts to tell us what the world will look like in the future under the impacts of climate change, and what to do about it.

While climate science is indeed essential to understanding various climate change risks and possible future developments, it can't show us "THE future": in a situation of such complexity and such rapid change, forecasting is even harder than usual.

We ourselves are part of that complexity. Our actions, our choices, are factors to be reckoned with. We have the opportunity to transform our current realities leading to different trends altogether. "What to do" is both an individual and a

collective choice, which should be informed by modern science, and other knowledge systems and practices when relevant, but cannot be answered by science alone.

This chapter offers support to explore and create different visions of the future contributing to climate resilience and regeneration. Understanding that there is not *one* future already existing outside of us, which a few experts know about, but only visions of the future stemming from our dreams and shaped by our actions, can feel liberating and exciting at all ages.

Try this:

Try This short exercise to spark your imagination and imagine a beautiful future.

Close your eyes. Then picture the most beautiful future you'd love to live in. Think of your life, your community, and nature – locally and globally. Choose one aspect and capture it: draw it or write it – whatever helps you express your vision.

Optional: If you want to, you can use a photo of your neighbourhood and express your vision in relation to that picture.

This short exercise relates to futures work and especially to activity 4.2.1 Envisioning the most beautiful future, and 4.1.2. A photograph of the future.

How to work with this topic

In this section we offer guidance on:

- How it is possible to expand learners' imagination through futures thinking, integrating the arts and other creative approaches.
- How to help learners identify and acknowledge the unavoidable impacts of climate change, while developing collective strategies to adapt to and respond to these impacts.
- Empowering learners by exposing them to imaginaries, immersive art, new perspectives and experiences, and traditional ecological knowledge.

Tool 4.1 – How can art bring imaginary worlds to life?

Many of us have trouble imagining what a different, climate-resilient and regenerative world could look like. Both mainstream media and scientific literature offer us multiple images of destruction, pollution and war, while examples of actual regenerative living, successful rewilding initiatives and supporting communities are scarce and less well publicised. There is an acute need to enrich our imagination. This includes both sharing beautiful existing stories and working with the arts to broaden our perspectives.

Working with the arts and artists is meaningful in several ways. The arts, such as Solarpunk art, can give a glimpse into possible climate-resilient realities and thus make transformation tangible. Some artists enjoy exploring questions and challenges that emerge from deep cultural changes, such as giving rivers legal rights. Other artists can help make emotions related to connection or interbeing palpable, which can help create inner shifts or enhance inspiration. Moreover, working with the arts while promoting learners' creativity and sharing creativity-boosting techniques (e.g. collages) can give learners tools to explore their own imaginary worlds and grow their imagination.

Tool 4.2 – Why work with imagining alternative futures or parallel worlds?

Exploring futures does not need to encompass the whole of society. Insights and competence can be gained by working with a specific focus; for instance, by exploring the future of "our river" or "our school; or "skills in demand by employers"; or the future of farms or industries in our community, or of AI, or biomedicine.

In addition to exploring probable futures, we can identify *desired or desirable* futures, especially if we invite learners to express values and beliefs as part of the exploration. These in turn can be used to investigate realistic opportunities

for personal and group action: and can help deepen the exploration of what desirable futures can look like, if the activity is repeated a few times with growing awareness of assumptions and biases.

Parallel worlds can sometimes be easier to work with than futures, if the learners have already concluded that their future is bleak. They can also help learners transition from exploration to action as the linearity of time between present and future is questioned.

Learners working with futures – here exploring the values that would be important in their futures.

Photo: Olena Zarychna

When learners begin working with parallel worlds or future scenarios, they may not immediately grasp what a desirable and resilient future involves. It is important to allow room for exploration, imagination, and play, as these open-ended processes help learners gradually build their own understanding.

Imagining parallel worlds or different futures can also make the variety of possible futures tangible both individually and collectively, while highlighting opportunities for choice and exercising agency. Moreover, it can lead us to realise how the actions we take in the present are influenced by what we anticipate for the future. It also underlines the importance of cultivating openness and curiosity about futures.

A BIT MORE...

More inspiration on Futures Literacy

Watch *this video*, a TEDxTalk on Futures Literacy: shaping your present by reimagining futures by Loes Damhof. (Length: 9:10)

Tool 4.3 – How does imagination support transformation?

Getting from imaginary futures to today's reality

Imagination is a powerful tool with limitless potential. From art to architecture, literature to government, mathematical formulae to scientific inventions: it is what we imagine that ends up becoming reality. Within the context of climate change, examining imaginary worlds is a powerful practice that can help in many ways, including (but not limited to) envisioning a world where humans live in harmony with nature, conceptualising a sustainable and climate-resilient future, expanding our individual worldview, and giving greater insight into our own internal perspectives, biases, strengths, and weaknesses.

What would a world look like, where all energy was produced locally and renewably? Or where regenerative urban agriculture was a standard in all major metropolises? What can we as individuals offer to turn these imaginary worlds into local realities?

Considering imaginary scenarios can serve to help "stretch" the creative muscles by exploring outside the normally defined rules and boundaries. The stretching involves expanding time perspectives, deepening connections (self, others, nature), and enhancing agency to create meaning and purpose.

This can help us relate to ideas or viewpoints that were not previously our own, and that challenge the limits of our current worldview. Envisioning a world or future where certain problems are solved in ways that do not damage ecosystems can serve as a force for positive transformational change.

Using futures games

Playing *futures games* is a great way to stretch our imagination and explore the limits of the boxes within which we habitually think. By exploring a multitude of future scenarios in the form of "what if" questions, we can develop intellectual agility, while diving into deep explorations related to values and engagement.

By fostering conditions that promote collective creativity – such as enhancing connectivity, encouraging collaboration, and supporting local innovation – communities can develop more dynamic responses to the challenges posed by climate change.

How can improvisation contribute to climate education?

Improvisation is an act or an art of creating something in an unplanned way. The process and results are unforeseen. It is an innovative process where you let go of control and trust your intuition to guide you. This is a valuable component of climate resilience education because it puts learners in a new situation where they need to mobilize all their knowledge, skills and competences, which is very similar to taking action in a chaotic climate. It enables an experience of embodying different values and belief systems, either to build empathy toward others or to refine our sense of alignment. Last, it helps build trust in our abilities to make decisions and take action in a situation of not-knowing.

Improvisation, often shortened to impro or improv, is used by artists performing music, theatre, dance, and even sculpture and writing. It can be done in many ways, but always requires a set of limitations or rules, because they encourage us to be creative:

- A short deadline can make you follow your gut feeling.
- Boundaries such as a word limit can help you get to the essence of what you want to communicate.

Impro writing can be an individual exercise, like responding to a question or prompt within a limited time or space; or it can be a collective process. Within this limit, you are free to write whatever you want in whatever way you want. This might be challenging for learners who want to do things "right", and is in direct opposition to how writing is traditionally taught in schools.

While improvising can be challenging for some, it is also rewarding. The results are often surprising and innovative. In collective improvisation, e.g. storytelling, you can encourage learners to contribute to the story by adopting a yes-and-attitude, welcoming and building on any idea shared. This helps create a safe space where more people find the courage to speak up. Activity 2.2.2 *Tell your climate connection story* and 4.3.2 *Improvisational storytelling* use impro and offer good opportunities to try it.

When introducing impro to your learners, the most important thing to convey is that they cannot go wrong, as there is no right or wrong way to write freely. This may be easier said than done, since many young people feel vulnerable among their peers. Fostering a collaborative rather than competitive culture is important – and very different from most school cultures today.

Competence area 5 – Taking collective action

Key competences

Societal agency, courage, innovation, collaboration, accountability, humility, care.

In this chapter we offer guidance and examples to support the use of collective action as part of climate education.

Why do this?

From a learning perspective, taking action is critical to acquiring new knowledge and building competences. It helps learners transition from learning to age-appropriate action as a way to boost their confidence and sense of initiative. Moreover, by focusing on taking collective action, as opposed to individual action, we are building the learners' ability to foster transformative shifts in society, as opposed to incremental change.

As political theorist Kenneth Waltz reminds us, collective efforts are needed if common problems are to be solved or somehow managed. Climate change is one of the most pressing global threats of our time, and addressing it requires the cooperation of communities and individuals.

In this chapter, we provide guidance on how to nurture collective action for climate resilience and regeneration: within your school community, group, club, neighbourhood, or even on a global scale.

Every step we take towards climate resilience, ecosystem regeneration, and societal transformation creates endless opportunities for learning and growth. By engaging in collective action, we empower our learners with the skills, knowledge, and mindsets they need to shape a brighter, more sustainable future, equipping them for life beyond the classroom.

What is "collective action" and why is it important?

The challenges posed by climate change are too big for any one person, community, or country to tackle alone. They require teamwork at all levels – local, national, and global. When a team consists of people who are not only individually but also collectively empowered to take action, they can accomplish far more than when acting alone.

Coordinated global action is particularly relevant to greenhouse gas reduction efforts that are critical to reduce loss and damage, and limit the climate variability that we need to adapt to or cope with. However, when it comes to building resilience to the impacts of climate change, actions need to be designed and implemented locally, with and by local communities, including with resources that can come from different parts of the world. Therefore, both climate mitigation and climate resilience efforts call for collective action, but differently.

In schools, collective action can be a powerful way to build climate resilience. For example, learners can work together to start a school composting program to reduce waste while enriching the soil. The school garden is full of potential, there we can plant native trees to restore local biodiversity or create rain gardens and rainwater harvesting systems to conserve water and prevent damage from heavy rains. Those in drought-affected regions could experiment with growing climate-resilient crops among a variety of local crops in food gardens. Schools could even partner with local experts to design projects like drought-resistant gardens, installing climate-resilient green roofs or planting living walls that reduce urban heat and improve air quality.

Learners creating a compost.

Photo: Carmelo Zamora

These initiatives do not just address socio-environmental challenges – they also teach valuable lessons about teamwork, problem-solving, and the power of community. By coming together around shared goals, schools can become hubs for sustainable practices and inspire a brighter, more resilient future.

Collective action is about more than working together – it's about developing the inner attributes that are essential for tackling complex challenges, including nonviolent communication, empathy, accountability, courage. When learners engage in collective, hands-on experiences, they also take ownership of their learning, develop empathy for others, and sharpen their critical thinking – all of which are vital for creating climate resilience and regenerating ecosystems.

How does collective action address climate anxiety?

Engaging in collective action can help to navigate uncomfortable emotions or anxiety by tapping into a sense of purpose and shared responsibility. When learners work together on projects like planting trees, creating rain gardens, or advocating for renewable energy in their community, they experience both individual and collective agency – they see that their efforts, combined with others, can make a real difference.

Collective action also fosters a sense of connection and safety. Being part of a group that shares a vision for a better future can ease feelings of isolation and provide emotional support.

It's also important to create space for learners to express and process their climate emotions, whether fear, anger, or grief, which may emerge while they take action. This space enables the learners to feel heard and understood within a supportive group, which in itself fosters resilience. When educators also emphasise empowerment, while focusing on possible actions, they help learners navigate climate anxiety. One basic element of empowerment is to be non-judgemental; which in turn means refraining from the temptation to see projects as tasks to be graded.

DIVE DEEPER

Project-based learning

Project-based learning (PBL) brings collective action to the classroom by empowering learners to tackle real-world climate challenges collaboratively, fostering resilience and regeneration through tangible actions.

It fosters skills, empowerment, and a collaborative spirit, preparing learners to address climate change with creativity, resilience, and action. By working together on real-world challenges, learners develop not only the skills to tackle climate change, but also a deep sense of empowerment and connection. These experiences extend beyond the classroom, shaping future community leaders and innovators.

How PBL supports collective action

- Shared purpose: Learners unite around issues like reducing waste or regenerating ecosystems.
- Teamwork: Climate challenges require diverse perspectives and skills. PBL is inherently collaborative, allowing learners to pool their unique talents and ideas.
- Real-World Impact: Projects like school compost or permaculture gardens address local challenges and have a real-life impact.
- Agency: When learners realize that they have the tools and skills to make a difference, their sense of agency grows. This empowerment is reinforced as they collaborate on projects and witness their impact. It reduces feelings of helplessness and fosters hope and determination.

Continued from previous page

Steps to implement PBL for collective action

1. *Start with enquiry*: Guide learners to explore climate issues through questions, research, interviews, fieldtrips and experiences.
2. *Design collaborative projects*: Examples include compost systems, permaculture gardens, or awareness-raising art installations.
3. *Encourage transdisciplinary work*: Integrate science, art, ethics, and more for innovative ideas. This cross-disciplinary approach reinforces the idea that collective action can come from diverse fields of expertise.
4. *Support reflection*: Allow time to evaluate challenges, results, and teamwork.
5. *Celebrate success*: When the project is complete, celebrate the collective achievement – whether it's presenting their project to the community or publishing findings in a local newspaper.

Taking action through social media: pros and cons

Social media already play an important, if informal, role in climate education. This is a reality confronting educators, and can be for both good and ill.

On the one hand, social media can be effective for raising awareness, sharing resources, and inspiring action among diverse audiences. They provide access to real-time updates on climate research, policies, and community initiatives. They facilitate community-building and collective action by connecting individuals globally, allowing them to unite around climate education and activism. Platforms amplify voices, create movements, and spread climate knowledge quickly.

On the other hand, social media can oversimplify complex climate issues, leading to misinformation or "slacktivism" (performative activism without meaningful action). Additionally, exposure to alarming climate news can worsen climate anxiety, particularly for younger users, creating vicarious trauma, apathy, or

feelings of helplessness rather than empowerment; and, without guidance, can even lead to addiction and impaired cognitive development.

If your learners want to engage with social media as part of their collective action, they will need guidance. Effective use of social media requires balancing engagement with critical thinking, using the platforms to foster dialogue and provide actionable solutions while addressing potential mental health impacts, including as a result of addiction.

How can cultivating care promote climate justice and decolonisation?

Everyone cares about someone or something. Most of us care about ourselves, our family and our home, for example. You can think of what you care and don't care about as a "circle of care", with all you care about being located inside the circle.

By cultivating care, we can expand this circle to go beyond those individuals and places we know personally. Historically, people in distant countries and minority groups have been kept on the outside of the circle. This materialises in different ways; for example, news coverage of climate-change induced disasters tend to bring us personal stories by people in countries close to us, while people in distant countries are referred to by using numbers and statistics.

The impacts experienced by those most affected by climate change often don't make the news at all in the countries most responsible for the crisis. Caring about others is a strong motivation to work for climate justice and engage in the process of confronting colonial continuities and climate colonialism.

DIVE DEEPER

Care for all living beings

Go deeper and *watch this video* about Shifting towards care for all living beings to grow climate resilience by Jane Chun. (Length: 12:08)

Try this:
What's the climate story of your clothes?
Pick one item you're wearing today – your shirt, shoes, or jacket and ask yourself: Where was it made? How was it made? How did it get all the way to me? Then reflect briefly:
What does this item say about climate and about me?

An option for this exercise is to write or draw its climate story: You might consider its social story (e.g. fair labour, local vs. global production) and the personal value (e.g. why you chose it, how long you'll keep it).

This activity is inspired by activity 5.3.1 Creating an intergenerational garment from the CLARITY Toolbox.

How to work with this topic

In this section we offer guidance on ways to:

- Support learners mobilise their resources to engage in collective action for climate resilience and regeneration, while developing a deep sense of empowerment and connection: from concepts to implementation (e.g. through project-based learning).
- Explore interconnectedness through community activities (e.g. school gardening) in the local physical environment and its elements (e.g. food, compost, soil), promoting systems- and regenerative thinking.
- Cultivate care by fostering solidarity through intergenerational activities and learning exchanges across geographies as well as by promoting climate justice and decolonisation.
- Explore how dilemmas can be approached through different channels (e.g. art, storytelling, social media) and ways (non-violent, non-judgemental) of communication fostering courage, care and perspective-taking.

Tool 5.1 – Why should we work to regenerate the soil?

Some negative developments

Deforestation and large-scale monoculture farming (whether of plants or animals) deplete the soil because they are strongly related to overuse of chemical fertilisers and toxic pest control, which kill the soil microbes and other organisms – like earthworms – that are necessary for soil health.

- Depleted soil is easily eroded – blown away or washed away.
- Depleted soil has reduced capacity to "hold" rainwater until it can be absorbed, multiplying the impact of flooding and reducing the underground sources of fresh water.
- Depleted soil cannot sequester carbon in the ground through deep roots, mycelium and microorganisms, and contributes to biodiversity losses.
- Food grown on depleted soil is less nutritious.
- Depleted soil dries out quicker, leading in the long term to poor harvests and even to desertification.

Schools can set a good example

Schools can set a good example, and influence a whole community, through such activities as composting and growing healthy vegetables.

Tool 5.2 – Local action – climate-resilience?

While actions to reduce emissions of greenhouse gases are generic and can be implemented in many parts of the world (e.g. taking public transportation, consuming less electricity, having a plant-based diet, creating a carbon tax), actions to build climate resilience need to be tailored to a specific ecosystem and to the situation of local individuals, population groups and communities. Hence the approach towards taking collective action for transformative climate resilience is to know the local ecosystems, understand possible challenges and opportunities related to climate resilience locally, and research actions that are already implemented towards climate adaptation and addressing loss and damage.

Explore and support ecosystems

A first step for teachers or educators and their learners is thus to explore and get to know the local ecosystem(s) that they wish to make more resilient. It is critical to know about the various species of plants, fungi and animals that constitute the ecosystem, as well as about the soil, forests, waterways, marshes, sea or ocean on which they depend. It is also important to note that the ecosystem should be considered beyond the administrative boundaries of the village or city, so as to address such boundary-crossing issues as watershed management or biodiversity corridors.

Local cartographies

A second step is to map each ecosystem in relation to challenges and opportunities to build climate resilience in transformative ways. Such mapping exercises can help learners develop a stronger emotional connection to their local ecosystems, as well as learn about the different species and elements that constitute their ecosystems and contribute to interconnectedness.

By integrating elements related to ecological and social systems, as well as by addressing both climate challenges and solutions, the mapping exercise can help reflect on the different feedback loops that need to be considered when building climate resilience. This in-depth understanding provides a basis for considering possible actions to be taken locally.

Learners and teachers take part in a local tree-planting action – a small, hands-on step that strengthens community resilience, supports regeneration, and builds a sense of shared responsibility for the places we live in.

Photo: Tetiana Byts

Supporting local climate resilience actions

A third step is to learn about climate adaptation plans, programs, projects and initiatives that are already implemented locally, before

considering launching a new action. What are the current activities that can be joined, supported, expanded or transformed to foster climate resilience? How can we learn from past successes and failures to foster change more effectively? Taking collective action is about having the humility and the skills to join existing endeavours, where such exist and are accessible, in order to learn from them and help improve them.

Tool 5.3 – Simple ways to foster solidarity for action

An intergenerational artefact

Working with recycled materials and building upon the experience of elders, young people can create something expressing the meeting of old and new: in this example tool-card, an intergenerational garment.

Solidarity movements

There are many local, national, and international civil society organisations (CSOs, NGOs) offering opportunities to join in advocacy and action for Global North-Global South solidarity.

This can sometimes be problematic: some such organisations contribute to reproducing power relationships and representations shaped by colonialism and white-saviourism. Some may be focused on promoting and supporting approaches, values and ideas that align with their own interests and do not respond to the needs of those in the Global South whom they claim to support. Some may also run projects in a way that excludes local communities from decision-making power, thus curtailing their ability to design and run projects that work for them.

Older learners can be encouraged to research what is on offer, and exercise critical thinking before engaging in initiatives that contribute to empowering local communities, and build their ability to serve in the process.

School exchanges

Learning exchanges can take place between schools in many different contexts – urban and rural, central and peripheral, and across the Global North and Global

South. They can take the form of sharing personal stories, the progress of school projects to enhance climate resilience and regeneration, and/or visions of the future. They could lead to some joint projects or actions.

Tool 5.4 – How can learners be helped to mobilise their resources for action?

It's easy for both individuals and groups to fall into an assumption that there is nothing they can do, because they lack resources: money, access to people and experience, materials, knowledge, other resources. However,

- The local cartography exercise should raise awareness of all the resources and opportunities that exist in their community and ecosystem.
- The project-based learning (PBL) approach described above promotes taking a small action, building upon what is available, and can help unblock learners and create a positive movement.

Why are art and storytelling supportive of collective action?

The role of art and storytelling in climate education is also addressed in Section 2.2.

Approaching action through art allows for creativity, fun and exploration, and works as an antidote to the moral attitude of "you must" or "you should". Art says: "You can!!!". The artistic process encourages us to make meaning out of materials, helping us to make sense of the world. This process gives plenty of opportunities for engaging with collective action. For example, making art out of trash allows the learners to:

- Take part in the collective act of cleaning a beach (or other area) to protect and care for nature.
- Make an art installation together as a group and develop shared meaning.
- Engage with and impact the wider community through showing the art installation.

An art installation can become the "talk of the town" or the "talk of the school" and create a space for reflection and dialogue.

Communicating across barriers

Sometimes resources are best mobilised by engaging in dialogue with people regarded as "other". Some examples could be senior citizens, politicians, migrants, people with physical disabilities, or the homeless. Two keys to initiating a positive dialogue are learning to communicate in a non-aggressive and non-judgemental way, and communicating with empathy.

Dialogue is also eased by learning "to walk in someone else's shoes", even if only briefly. For instance, a deliberate exposure to other points of view, also known as "bubble-hopping" (Stenström, preprint), has proven effective with higher education learners.

How can dilemmas be tackled?

When exploring global challenges like climate change, it's important for learners to grasp the complexity of ethical dilemmas.

In the classroom, learners can explore dilemmas through role-playing, which highlights the importance of collective action. The aim is not just to understand the issues but to practice listening to diverse viewpoints and working together toward fair, shared solutions. By engaging in these discussions, learners get the opportunity to "bubble-hop" and to develop critical thinking and communication skills that are essential for addressing complex ethical challenges.

Conclusions and outlook

A few words on the continuing climate path

Now you have almost reached the end of the Teachers' Guide and have experienced some of the tools in CLARITY's Toolbox for educators.

Thank you for your commitment. The future of our learners depends on how we, and then they, deal with the climate crisis and its impacts. Their feelings about climate change also affect their ability to respond to it. We think climate change is too important to be restricted to obligatory knowledge transfer: climate change affects every facet of our lives and our futures, and this needs to be reflected in education. This is why we provide activities that can be used in many different subjects, often across disciplines. All educators can address different aspects of climate change and support learners and, not least, each other. One can be strong, together we are stronger and can create a climate-resilient and regenerative future.

It's not just about climate

Working with climate emotions needs to grow out of the foundation of working with any emotions. The way we attend to and care for learners' emotions in all aspects of school/college life provides the collective resilience for facing climate change.

Dealing with emotions gets easier with practice

Navigating emotions can feel challenging at times, but it is a practice. The more we accept climate emotions, are open to feeling them, and regularly work with various methods, tools and activities to take care of our emotional and mental wellbeing, alongside our physical wellbeing, the easier it gets.

This includes: better understanding the emotions and why we feel them (Competence area 1); re-connecting to ourselves, others and nature (Competence area 2); exploring and adopting other perspectives that help us find grounding and inspiration in a world of climate instability (Competence area

3); opening up to a variety of futures, and the possibility of shaping a climate-resilient and regenerative world (Competence area 4); and taking action to nurture climate-resilience and regeneration locally (Competence area 5). Mobilizing the tools and engaging with the activities we offer is meant to help both address climate anxiety and tackle the root causes of climate change and of climate-vulnerability.

Nonetheless: if the activities you undertake or engage with are not enough for you or your learners, you may be dealing with mental health challenges and/or trauma for which medical support should be sought. Learners who have been exposed to potentially traumatic events associated with climate change are also likely to require extra support.

A mutual learning journey

Your own peace of mind

How do you, as an educator, feel about climate change? Do you yourself suffer from climate anxiety, or do you view the future with equanimity?

This is a highly practical question. All experience indicates that learners (of all ages) "read" and learn from educators' emotions as well as, or instead of, their words. The CLARITY program is also an invitation to embark upon or continue your own learning journey.

Science and certainty

Openness to learning also applies when it comes to knowledge transfer. Do you feel that you know enough, or too little, about climate science? If you reply "too little" you're in the company of the world's leading climate scientists, who continuously gather more data to model a continuously changing world. Their work is providing us with increasingly valuable and detailed knowledge about the processes involved in climate change, and overall the global scientific consensus on climate change impacts has been proved accurate as to effect if not always as to timing. But there is no crystal ball: certainty lies in the past, not in the future. All we can say with certainty about the future is that it will be very different. We are preparing our learners for futures that neither they nor we can currently imagine.

To some extent this has always been the case. The history of science is littered with declarations that "all" is now known about a given topic; only to be confounded by a new generation and a new wave of discoveries. Uncertainty is indeed the first condition for research – uncertainty together with curiosity. But in today's world, this process has accelerated beyond bounds. Acknowledgment of uncertainty is essential not only for researchers but also for educators.

Start or join a support network

If you're seeking to join or create a trauma-informed peer support group, you can benefit from some evidence-based basic principles (SAMHSA, 2014).

1. Shared purpose; for instance,

- Is the group a space for mutual emotional support?
- Is it for collaborative learning on trauma-informed practice?
- Is it for responding to shared experiences (e.g. vicarious trauma, stress, learners' behaviour)?

2. Prioritise safety – create simple ground rules. For instance,

- Confidentiality.
- Voluntary sharing (no pressure to disclose).
- Non-judgmental listening.
- Right to pass or pause.

3. For trust and transparency, be clear about the structure:

- Who facilitates?
- How often do you meet?
- How are decisions made?

4. Support voice, choice, and agency. Enable participants to:

- Choose what and how they share.
- Co-create group norms.
- Give input on topics or formats.

5. Be reflective, not perfect. This is a learning journey. You don't need to be a trauma expert – just trauma-aware and willing to give and take feedback. Encourage the group to reflect on:

- What's working.
- What's uncomfortable.
- How to adapt.

6. Be mindful of context and culture. Acknowledge how personal history, identity, and community shape people's experiences of trauma and resilience. Be inclusive of diverse perspectives and cautious of universal language like "safe space"– ask what safety means for you and your group.

Expand your community

You can also choose to use other, existing channels.

- Peer support: You can, for example, join the online forum that is part of the CLARITY package. This group is also a good place to share all the cool articles or new resources that you come across, for all to benefit from them.
- Engage parents: The parents of your learners can be powerful allies – or can unwittingly add to the learner's anxiety, for instance by espousing climate denial or by insisting on a consistently positive attitude.
- Engage colleagues: Some of the materials made available in the Toolbox are suitable for printing and using as posters or as information material to engage colleagues.
- School principals are important potential allies in the work of climate education. They can, for instance, ensure that professional support for either you or the learners is available when necessary; and can provide back-up in case of any difficulties with parents.

Explore training opportunities

The CLARITY package is freely accessible online as a self-paced learning journey. Individual or group coaching may be available on request.

Several CLARITY partner organisations offer additional training and coaching opportunities including:

- *One Resilient Earth*: tailor-made training on emotional wellbeing and climate change, or climate circle host training; a certified online course on Futures Literacy and the Arts for Transformative Climate Action; tailor-made training on Facing colonial continuities in climate action.
- *Legacy17*: Innertopia: a program for self-empowerment (in 12 languages), free to download for individual use, also available as a coached group program.
- *Lund University Centre for Sustainability Studies (LUCSUS)*: Masters' Programs on "Climate Change and Society" and "Environmental Studies and Sustainability" and related courses on "Sustainability and Inner Transformation" and "Psychology and Climate Change", as well as leadership courses that were co-created by LUCSUS and are offered by the Inner Green Deal (IGD), the Inner Development Goals (IDG), the UNDP Conscious Food Systems Alliance (CoFSA) and the United Nations Human Rights Office of the High Commissioner (OHCHR).

There are also other organisations that offer related courses and coaching opportunities that we recommend as they can be linked to the CLARITY tools and education. Detailed information is available in the "Resources to dive deeper" sections of the self-paced online course on the community platform.

Annexe A: Trauma-informed pedagogy

Exposure to traumatic events – such as displacement, disaster, abuse, or neglect – can have a profound impact on a child's brain development, emotional regulation, and overall wellbeing. These experiences can lead to challenges in academic performance, behaviour, and mental health (Maynard et al., 2019).

Trauma-Informed Education, TIE, is a relatively new and rapidly evolving field with aims to create safe, supportive learning environments for learners who have experienced trauma. It focuses on engaging whole schools in such work. Key frameworks such as SAMHSA's trauma-informed care principles (2014) influence the conceptualization of trauma-informed education, emphasizing safety, trustworthiness, choice, collaboration, and empowerment.

In CLARITY we have chosen to work with the even-newer concept of Trauma-informed pedagogy (TIP) because it focuses primarily on what can be done by an individual teacher. The underlying principles are similar, but more oriented towards practical classroom work.

Creating conditions for effective support

Access to support is a critical factor in trauma-informed practice.

Six key characteristics of a supportive environment have been defined as

- Safety.
- Trustworthiness and transparency.
- Peer support.
- Collaboration and mutuality.
- Empowerment, voice and choice.
- Attention to cultural, historical, and gender issues.

This could be viewed as a general set of principles for an excellent learning and teaching environment, especially one conducive to transformative learning –

principles that are of even greater importance in the presence of actual or suspected trauma.

"Safety" includes the principle that all exercises are undertaken voluntarily by each learner. On the one hand this principle is in sharp contrast to praxis in many schools: while modern pedagogical principles pay homage to the principle of "student-centred" education, schools still experience a need to impose some kind of conformity if only to be able to assess learning outcomes. On the other hand, it can also be challenging for the learner. To achieve high levels of participation, the learners need to *trust*: to trust the educator, and the educator's ability to maintain a supportive, non-judgmental environment that is also warm and kind.

Psychological resilience and wellbeing

Children, and adults, can acquire skills that contribute to their resilience and wellbeing. Important factors that can be taught or supported in an educational situation are:

- Reframe: challenge assumptions.
- Support from friends, family, or others.
- Feel OK with one's actions in response to a traumatic event.
- Have a strategy for getting through and learning from traumatic events.
- Pacing.

Reframe: change the story

Reframing is often talked about in two different ways. One is how teachers see and meet their learners. When we understand the developmental effects of trauma, we can re-interpret behaviour and re-frame our response (TREP Project, n.d.). This means designing classrooms and environments that are experienced as safe, predictable, and supportive – which also ensures that those carrying hidden trauma are more likely to be reached and supported.

The other draws on the fact that humans are storytellers. We continuously ask and answer – generally unconsciously – questions of identity. Identity builds upon beliefs about things like race/culture/history, gender, abilities/ disabilities, ethics/values, social and economic status.

Each of us also has a basic attitude that is generally optimistic or pessimistic; and a mindset that is either fixed or growth-oriented: beliefs about our fate in life (Dweck, 2006; Yeager & Dweck, 2023). These, as well as other aspects of identity, can be shifted or shaken by events, or turning points: a crisis, a traumatic experience, a sudden insight or "revelation". Research shows that making meaning of challenges is linked to stronger identity and emotional health (Lilgendahl, McLean & Mansfield, 2012; Mälkki & Green, 2018). Practices like storytelling or gratitude journalling can support meaning making and help us change how we understand our experiences, reframe when needed, and support wellbeing.

Support from friends, family, or others

A stable and trusting connection with a caring adult, friend, family or teacher, is often the most significant contributor to a child's resilience (National Scientific Council on the Developing Child, 2015). The educator is well placed and can create opportunities to experience positive interaction in very small groups. Teach and practise non-judgmental communication; invite expression of values concerning school environment and relationships.

Move on from self-blame

After a traumatic experience, it's easy to fall into blame and shame: was it all or partly "my fault"? For learners who have experienced trauma and struggle with self-blame, strategies that support compassionate self-talk – like helping them reframe situations in a more positive light or practice acceptance – can be especially helpful in restoring a sense of control (Sinnott, Park & Huedo-Medina, 2022). The educator can make space for discussions about responsibility, and about the negative effects of shame and blame.

Strategies for getting through and learning from traumatic events

The teacher can encourage development of a growth mindset (Dweck, 2006; Yeager & Dweck, 2023), for example through games or exercises that challenge assumptions and stereotypes. This benefits all learners, experiencing trauma or not, and supports both kinds of coping strategies.

The teacher can open for discussions about courage, and how fear and courage go hand in hand; and distinguish between *being afraid* (normal and indeed necessary for survival) and *acting from fear*. Such activities can be used for

developing strategies to respond to upsetting future events, despite feeling afraid.

Pacing

Enabling learners to travel at their own speed, to take the time they need to gain resilience.

The teacher is still a teacher

It's important to keep in mind that a teacher is not a psychotherapist. The role of an educator does not extend to "curing" PTSD, or even to diagnosing it. Nonetheless we believe that acting *as a teacher* it's possible to have an important positive influence on the mental health of the learners. This is the hypothesis behind the concept of a "trauma-informed pedagogy".

And, the teachers' own wellbeing is an important factor, not least in creating trust. Professional help is available in many schools, if it all becomes "too much". You can also create your own support using the CLARITY forum, where you can post your concerns and hear from your peers.

Annexe B: Glossary and reading list

Glossary

Alexithymia

A trait where a person has difficulty recognising and describing their own emotions. This can affect how learners' express feelings, respond to emotional content, or engage in social-emotional activities (American Psychological Association, n.d.). For more information, see Neurodivergentinsights.

Acute stress disorder, ASD

A short-term pathological condition occurring in response to experiencing a potentially traumatic event; typical duration less than one month (American Psychological Association, n.d.). https://dictionary.apa.org/acute-stress-disorder. More here (Fanai & Khan, 2023) and here (U.S. Department of Veterans Affairs, n.d.).

Brain strengths

A brain strength refers to a natural cognitive asset or mental skill that a person – especially someone who is neurodivergent – may excel at. These strengths include abilities such as exceptional focus, strong memory, creative problem-solving, spatial reasoning, pattern recognition, or hyper-awareness of details. For more information and materials, see Neurodiversity education academy.

Climate grief

A longing and sadness experienced when noticing or anticipating the loss of species, ecosystems and meaningful landscapes due to acute or chronic environmental change. Can encompass not only "nature grief" but also "social grief": loss of life expectations, ways of life, social conditions. More here, an article at American Psychology Association by Summer Allen.

Climate resilience

1. [external] The capacity of society, economy and ecosystems to anticipate, limit and cope with the multiple impacts of climate change (IPCC, 2022).
2. [internal] The inner capacity of individuals (human or otherwise, alone or collectively) to cope with the multiple impacts of climate change in their environment. See Resilience, below.

Edge emotions

Emotions (often strong emotions) engendered by exposure to any potentially traumatic event, including events that challenge dearly held beliefs (Mälkki, 2019).

Emotion

An initial, automatic reaction to a stimulus, involving biological or physical changes.

Empowerment

1. [state or condition of] The ability to call upon one's own strengths and to behave with integrity and authenticity.
2. [change process] a. The process of moving from a less empowered to a more empowered condition; b. Supporting another in such a process.

Feeling

[noun] An expression of how an emotion is experienced, over time.

Inner dimensions of climate work

Individual and collective mindsets, beliefs, values, worldviews and associated inner capacities/ competences (cognitive, emotional, relational) that influence how we perceive, feel, think and act in regard to climate change and other sustainability challenges.

Learning for environmental sustainability

In the context of GreenComp (Bianchi et al., 2022), learning for environmental sustainability aims to nurture a sustainability mindset from childhood to adulthood with the understanding that humans are part of and depend on nature. Learners are equipped with knowledge, skills and attitudes that help them become agents of change and contribute individually and collectively to shaping futures within planetary boundaries.

Planetary boundaries

Planetary boundaries refer to nine processes. These regulate the stability and resilience of the Earth system and the evidence-based limits within which humanity can stay safe, develop and thrive for generations to come. More here at Stockholm Resilience Centre.

Post-Traumatic Growth (PTG)

A psychological development (growth) pattern occurring in response to experiencing a potentially traumatic event. Emerges from the individual's struggle with the new reality in the aftermath of trauma, rather than directly from the traumatic event itself. Research i.a. by Calhoun and Tesdeschi (2014) indicates that up to 89% of trauma survivors report at least one aspect of post-traumatic growth.

Post-Traumatic Stress Disorder (PTSD)

A long-term pathological condition occurring in response to experiencing a traumatic event (American Psychological Association, n.d.).

Regeneration

Processes and practices aimed at restoring and revitalizing ecosystems and communities.

Resilience

Psychological resilience is a dynamic process of positive adaptation in the face of significant adversity, involving the capacity to "bounce forward" with flexibility, purpose, and emotional well-being (adapted from Southwick et al., 2014.)

Skills

Skills means the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills can be cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

Sustainability

In the context of GreenComp, sustainability means prioritising the needs of all life forms and of the planet by ensuring that human activity does not exceed planetary boundaries.

Toxic positivity
Forced optimism, e.g. regarding climate change, which suppresses feelings like sadness or fear.

Trauma
A stressor experienced either directly or indirectly, resulting in significant and severe subjective distress.

Traumatic event
A distressing or disturbing event that overwhelms an individual's ability to cope, causes feelings of helplessness, diminishes their sense of self, and impairs their ability to feel a full range of emotions and experiences.

References

For a complementary reading list, see the CLARITY Literature Review.

American Psychological Association. (n.d.). In *APA Dictionary of Psychology*. https://dictionary.apa.org

Bianchi, G., Pisiotis, U., & Cabrera Giraldez, M. (2022). *GreenComp – The European sustainability competence framework* (M. Bacigalupo & Y. Punie, Eds.; EUR 30955 EN). Publications Office of the European Union. https://doi.org/10.2760/13286

Bierbaum, R., Holdren, J. P., MacCracken, M., Moss, R. H., & Raven, P. H. (2007). *Confronting climate change: Avoiding the unmanageable and managing the unavoidable.* United Nations Foundation.

Biester, U., & Mehlmann, M. (Eds.). (2020). *A transformative edge*. Transformation Publishers.

Calhoun, L. G., & Tedeschi, R. G. (Eds.). (2014). *Handbook of post-traumatic growth: Research and practice*. Psychology Press. https://doi.org/10.4324/9781315805597

Dweck, C. S. (2006). *Mindset: The New Psychology of Success*. New York, NY: Random House.

European Commission: Joint Research Centre. (2022). *GreenComp, the European sustainability competence framework*. Publications Office of the European Union. https://data.europa.eu/doi/10.2760/13286

Fanai, M., & Khan, M. A. B. (2023). *Acute stress disorder*. In StatPearls. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK560815/

Goldammer, B., & Goldammer, J. (2022). Safe enough space: Or how can I build a basis of trust? In *OnLine Alchemy* (pp. 31–56). Transformation Publications. https://legacy17.org/project/online-alchemy/

Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health, 5*(12), e863–e873. https://doi.org/10.1016/S2542-5196(21)00278-3

Intergovernmental Panel on Climate Change (IPCC). (2023). Climate change 2023: Synthesis report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (H. Lee & J. Romero, Eds.). IPCC. https://doi.org/10.59327/IPCC/AR6-9789291691647

Lilgendahl, J. P., McLean, K. C., & Mansfield, C. D. (2012). When is meaning making unhealthy for the self? The roles of neuroticism, implicit theories, and memory telling in trauma and transgression memories. *Memory, 21*(1), 79–96. https://doi.org/10.1080/09658211.2012.706615

Macy, J., & Johnstone, C. (2022). Active hope: How to face the mess we're in with unexpected resilience and power (Rev. ed.). New World Library.

Martínez Cobo, J. R. (1986). *Study of the problem of discrimination against Indigenous populations* (E/CN.4/Sub.2/1986/7/Add.4). United Nations Economic and Social Council, Sub-Commission on Prevention of Discrimination and Protection of Minorities.

Mälkki, K. (2019). Coming to grips with edge-emotions : The gateway to critical reflection and transformative learning. In T. Fleming, A. Kokkos, & F. Finnegan (Eds.), *European Perspectives on Transformative Learning* (pp. 59-73). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-19159-7_5

Mälkki, K., & Green, L. (2018). Working with edge emotions as a means for uncovering problematic assumptions: Developing a practically sound theory. *Phronesis, 7*(3), 26–50. https://doi.org/10.7202/1054406ar

National Scientific Council on the Developing Child. (2015). *Supportive Relationships and Active Skill-Building Strengthen the Foundations of Resilience* (Working Paper No.13). Harvard University. http://www.developingchild.harvard.edu

SAMHSA (Substance Abuse and Mental Health Services Administration). (2014). *SAMHSA's concept of trauma and guidance for a trauma-informed approach* (Publication No. SMA14-4884). U.S. Department of Health and Human Services. https://ncsacw.acf.hhs.gov/userfiles/files/SAMHSA_Trauma.pdf

Sinnott, S. M., Park, C. L., & Huedo-Medina, T. B. (2022). Cognitive Coping Reduces Posttraumatic Stress Symptoms, Especially in the Context of Self-Blame. *Journal of Aggression, Maltreatment & Trauma*, *31*(8), 1108–1127. https://doi.org/10.1080/10926771.2022.2061879

Sobel, D. (1996). Beyond ecophobia: Reclaiming the heart in nature education (Vol. 1). Orion Society.

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology, 5*(1), 25338. https://doi.org/10.3402/ejpt.v5.25338

Stenström, E. (n.d.). *Bubble-hopping*. Handelshögskolan i Stockholm. Retrieved December 2024, from https://www.hhs.se/en/research/sweden-through-the-crisis/bubble-hopping/

TREP Project. (n.d.). *Trauma-Responsive Educational Practices (TREP)*. https://www.trepeducator.org/consistency-and-predictability

Trolliet, M., Barbier, T., & Jacquet, J. (2018). From awareness to action: Taking into consideration the role of emotions and cognition for a step toward a better communication of climate change. In W. Leal Filho, B. Lackner, & H. McGhie (Eds.), *Addressing the challenges in communicating climate change across various audiences* (pp. 47–64). Springer.

UN Foundation Expert Group. (2007, February). Report on climate change and sustainable development.

UNESCO. (n.d.). *ESD learning assessment framework*. Retrieved December 2024, from https://www.unesco-floods.eu/wp-content/uploads/2021/12/AdvHE_QAA_ESD_practice_guide_Sheffield_Uni_1637680461.pdf

Yeager, D.S., Dweck, C.S. Mindsets and adolescent mental health. *Nat. Mental Health* 1, 79–81 (2023). https://doi.org/10.1038/s44220-022-00009-5

Teachers' Guide: Teaching for Climate Resilience. CLARITY – Transformative Climate Resilience Education for Children and Youth: From Climate Anxiety to Resilience, Creativity and Regeneration by Marilyn Mehlmann, Nicole Diamantas, Gwendoline Ducros, Charlotte Karlsson, Bernadett Kiss, Marte Maurabakken, Laureline Simon, Signe Strøm Flugsrud, Carmelo Zamora, and Christine Wamsler

ISBN 978-91-8104-587-1

Graphic design by Nordicworking and Climate Creativity

Cover design by Colleta Kihumba (One Resilient Earth)

www.transforming-climate.education

contact@transforming-climate.education

All resources labelled as such by the Clarity Consortium are licensed under following Creative Commons License:
CC BY-SA 4.0

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA

Co-funded by the European Union