

BEST PRACTICES OF CLIMATE EDUCATION

Learning from Teachers and Classrooms
across Africa.



A Blueprint from the Pan-
African Climate Education
(PACE) Network.

“Setting the pace of Climate Education in Africa”

Learning from classrooms and teachers

Table Of Content

- ◆ 1. Before engaging in climate education, reflect on your motivation and vision for this work
- ◆ 2. Don't start from scratch but connect with other climate educators and build off examples
- ◆ 3. Climate education should be holistic and integrated in subject learning areas
- ◆ 4. Promote collaborative leadership of teachers and students
- ◆ 5. Build student agency and empower students
- ◆ 6. Build foundational climate literacy
- ◆ 7. Contextualize climate education
- ◆ 8. Find sources of expertise that can help your climate education design or work
- ◆ 9. Build community and allyship with others
- ◆ 10. Focus on local action, rooted in the lived daily experiences of students
- ◆ 11. Engage with the wider community, including in identifying local challenges and solutions
- ◆ 12. Connect climate education to real world needs and vital related issue areas
- ◆ 13. Build on indigenous and traditional knowledge
- ◆ 14. Make climate education hopeful and concrete
- ◆ 15. Make climate education problem-based & solutions based
- ◆ 16. Encourage creativity in students for expressing themselves about climate change
- ◆ 17. Engage learners in hands-on experiences
- ◆ 18. Provide children with a physical place to complement learning of theory
- ◆ 19. Develop ways of monitoring and evaluating the impact of climate education on students
- ◆ 20. Continue evolving your climate education with an innovative spirit and a sense of possibility



Introduction

Education is increasingly recognized for its critical role in building climate resilience, advancing sustainable practices, and preparing future generations to address the impacts of climate change. Many teachers, across the world and in Africa, feel the strong need for integrating climate education into their teaching to empower their students in confronting the harsh realities and impacts of climate change.

However, most of them don't feel ready and equipped to do this, and targeted, practical guidance for teachers is scarce.

This document aims to provide such guidance and respond to the question: how should climate education be designed and delivered to empower learners to have agency in confronting climate change and environmental risks?

Specifically, this document presents a blueprint for climate educators across Africa and the wider world, on aspects that constitute high-quality climate education that builds students' agency and leadership on climate change. It distills the experiences, learnings and reflections of over 100 climate educators across Africa, and zooms in on the aspects that characterize the type of climate education that is high-quality, empowering and impactful. In doing so, it aims to enable aspiring climate educators to not 'start from scratch' but build off the rich insights of other (African) climate educators in developing their climate education.

To give flavor to the different best practices, we are showing real-world examples (marked as "Spotlight") from inspiring African educators that embody the described aspects. We recognize that not all best practices / aspects can be present in all instances of climate education - which is fine; still, the whole set of best practices can serve as a North Star to aspire to. We also recognize that some of the best practices overlap - which is also fine; the best practices are necessarily interconnected and represent different angles to holistic climate education.

Great climate education is, most of all, great education - motivating, insightful and empowering for students! We hope this guide helps you in evolving your own climate education journey and, together with your students, building agency around tackling the climate crisis.

Best Practices of Climate Education: Learning from Teachers and Classrooms across Africa

1. Before engaging in climate education, reflect on your motivation and vision for this work

Climate education does not have to be big or daunting - it can 'simply' start by engaging students in an Ethics conversation around human impacts on the natural environment, using climate change data as an example for Math studies, or doing a creative writing or arts project with students around climate change. Yet, given how absent climate education is in most schools and classrooms, and how relatively few ready-to-use climate education materials are available, starting climate education activities can require strong imagination and leadership.

Thus, before engaging in this work, it can help to reflect on what motivates you to integrate climate education into your classes (for example, you might have relevant personal experiences or specific environmental effects in your community that motivate you to lead this work). This reflection can help you gain clarity on your vision for this work (i.e., what do you want students to learn, why, and how can you best support them in this process?). In some cases, such vision has helped teachers in Africa to transform whole schools towards climate change adaptation (e.g., through a blend of water conservation, school gardening/farming, a clean cookstove for school meals, a green playground - all driving up school attendance of children and their learning) - which is truly amazing.

2. Don't start from scratch but connect with other climate educators and build off examples

Beginning climate education in your school or community, might mean you are a lone pioneer in your context. This might seem daunting as starting something new always is. This is why it's important to connect with and learn from climate educators in other contexts.

While climate education is unique to each context, climate education approaches and activities are often similar. There are many educators (including all across the global Teach For All network) who have begun climate education work in their communities. They have relevant examples and experience and they are willing to share their insights. Such examples have already been captured and are available on Teach for All's [website](#) and [social media](#).

Building off examples and learnings of climate educators from other places creates a firm basis for contextualizing your own climate education work. It also helps to make climate education feel more accessible and less daunting.

By seeing what's possible and how it's done, you will realize you don't need to be a climate scientist or environmental expert to teach about climate change and its impacts - and that you all climate education leaders continue to be learners.

3. Climate education should be holistic and integrated in subject learning areas

Now that you have explored why (motivation) and learned from other climate educators, it is important to adopt the right mindset for climate education.

When beginning to engage learners in climate education, it is important to think of climate education as something that can be interwoven into all subject areas. Instead of thinking of climate education as an (extra-curricular) activity to be done after school hours, it is more beneficial to incorporate it across different areas of teaching and learning, like Math, English, Environmental Studies, Ethics, etc.

In English, for example, the learning outcome might be to improve reading proficiency; engaging students in creating a climate change text or story can empower them to access this important topic in a relatable way, while building their reading proficiency as well. To test comprehension, you can use a climate change related text; this way they learn more about climate change, and the academic outcome is not left behind.

Integrating climate education into learning areas also becomes easier when gaps in the curriculum have been identified. In Kenya, for example, the current school curriculum is the Competency Based Curriculum (CBC), adopted in 2017. In Grade 3, in Environmental Studies, learners are engaged in the topic Weather. This topic covers unfavorable weather conditions like droughts and floods, and how to keep safe during such events. The curriculum, however, fails to link such events to climate change and explain why they are getting harsher and lasting longer. When tailoring this lesson, integrating climate education means going a step further and bridging this gap, to empower learners to understand the topic in a holistic way.

Spotlight: Patrick Kamara (Teach For Sierra Leone alumnus)

Patrick implemented his climate education project in rural Sierra Leone. In his community, the notable climate impacts include flooding, mudslides, and food insecurity. He engaged his learners in climate education conversations and incorporated climate education into related topics. He found links in subjects like Science, Technology, Agriculture, English, and Math. In English, for example, Patrick engaged learners to read stories related to the environment to improve their reading proficiency and build a reading culture.

He used similar stories to test comprehension. This allowed him to meet required academic outcomes while empowering his learners to become environmental stewards. He encouraged learners to also implement their learnings in their school. Learners came up with a green compost manure school garden to address food poverty and planted trees to prevent mudslides and soil erosion. He also engaged teachers in capacity building, empowering them to incorporate climate education into their lessons.



4. Promote collaborative leadership of teachers and students

Climate education should embrace collaborative leadership. This approach allows teachers to co-construct climate education strategies and activities together with students.

In this approach, the teacher facilitates the classroom, co-learns with students, and ensures learners have the support they need when implementing the project and also have access to different sources of expertise. The essence is not to have teachers dictate climate education and its activities, but to allow learners to take ownership of their learning process. To research, explore, and question concepts together with the teacher acting as the support to this process. The teacher guides the learners in the right direction while allowing them to chart their own path.

The Teaching As Collective Leadership (TACL) framework illustrates this approach. The intended result of this approach is that students feel ownership of their own learning and they develop a sense of agency and leadership for shaping their future - this is absolutely vital for climate change.

5. Build student agency and empower students

Climate education should not stop at building student's knowledge about and mindsets towards climate action and sustainability - it should always go the additional step of developing students' agency for climate action.

This starts by, first, helping students recognize the collective human role in climate change (see above); next, we need to encourage students to experience their own role and self-efficacy for driving action. For example, let students come up with / choose projects, set goals, and make decisions. Vitrally, learners are all living in different climate realities - predominant impacts may be droughts, floods, rising water levels, forest fires, or heatwaves. Whatever the climate impact is, learners and their communities are being impacted dramatically - this is changing the trajectory of their lives, and young people know that.

Climate education needs to help learners channel the energy of students towards solutions to the issues, by exploring what is happening in their context and empowering them to come up with actions. This aspect stretches further than agency and self-efficacy for climate action: in the process, learners also develop critical thinking skills, problem solving, collaboration, and innovativeness that allow them to recognize the potential of having agency for their own future.

In addition to problem-based and solutions-oriented learning, this can also entail involving children in decisions about school infrastructure and governance and how to 'green' them (and, broadly, foster in students notions of informed citizenship and taking part in shaping public life).

💡 Spotlight: Edson Dongo (Teach for Zimbabwe)

One of the notable climate impacts in Chiredzi, a district in Zimbabwe, is severe drought which has led to water shortages and food poverty. This has severely affected the community and school going children as they sometimes come to school hungry and some, especially girls, dropout of school. Despite living through a harsh climate impact, the learners in Mwenje Primary School and the Chiredzi community did not know what climate change is, its impacts, or the human agency in this crisis. There is a knowledge gap as learners are not prepared to live and thrive in an increasingly climate-changed world. The vast majority of teachers don't have the knowledge, confidence or context specific materials to teach about climate change.

Edson addressed this gap by forming the club Learners in the Fight Against Climate Change. Learners are engaged to identify local climate challenges and come up with solutions. Learners do practical activities such as conservation agriculture, seed collection, tree planting and protection, fish farming, reuse of plastic bottles, clean up campaigns and water harvesting. These activities provide livelihood options for the community.

Edson has also trained teachers in climate education encouraging them to incorporate climate education into the classroom. At Mwenje Primary, teachers have adopted this approach and the school has embraced a holistic sustainability approach. The school has now installed solar power for renewable energy and rainwater harvesters to save water for dry seasons.



6. Build foundational climate literacy

Once you begin engaging learners in climate education conversations, it is important to first build their climate literacy. This will create a solid foundation for effective climate education.

Learners need to understand why climate change is happening, the impacts it is causing, and what the human role is. This will help learners begin to understand the causes and drivers of climate challenges in their own context, as well as the agency humans have in causing climate change but also in building solutions.

Yes, humans burn fossil fuels, destroy forest vegetation, dispose of waste irresponsibly; these actions are causing climate change. But, humans / each one of us also have a role to turn this around. Focusing on human agency and actions can lessen climate anxiety and foster agency and perceived self-efficacy in children.

In essence, allow learners to examine climate change impacts in their context, to identify human practices in their community that contribute to climate change and environmental risks, and allow them to together explore and experiment with solutions to these challenges.

Spotlight: Ivan Samuel Womala (Teach For Uganda)

In rural Uganda, one of the notable impacts of climate change is droughts. Given that most families in rural areas depend solely on agriculture, climate change has exacerbated poverty. This has in turn affected education as learners miss school and lack necessary resources needed.

In his community, Ivan Samuel engages learners to identify the various climate impacts in their community. Once learners identify the impacts, they identify the human practices that contribute to climate change.

In his setting, learners identified cutting trees, charcoal burning, brick burning, and poor agricultural practices as some of the activities that contribute to climate change. He then prompted the learners to come up with solutions to the impacts and the human practices. Learners in his school formed an environmental club and implemented greening schools and communities projects. They engaged other schools in 5 districts to collaborate on the project and planted over 150,000 trees. The schools partnered in organizations and communities in purchasing and maintaining these tree seedlings. Learners also set up a tree nursery for the community.

Learners also spread awareness about climate change through video creation. One of Ivan's learners, Gaali Shaban, participated in Videos for Change and the video won two awards. The video raises awareness about human practices that lead to climate change and highlights solutions that can be implemented. (see the video [here](#)).



7.Contextualize climate education

When engaging learners in climate education, it is important to tailor the lessons to their specific context. Start planning your climate education by asking: what is the learners' geographical context; what are the climate impacts witnessed in this region; what is their connection with the issue? If the learner resides in an area affected by droughts, it is most relevant to focus on droughts when explaining the impacts of climate change (rather than focus on rising sea levels or melting glaciers). This applies to many communities across Africa.

The key take-away is: climate education should be tailored to the local context of learners. It should be meaningful and relevant by taking into account their lived experiences and daily lives: what are the specific climate change impacts they live through or are at risk of experiencing. It should also address the specific climate-related needs and concerns of learners.

Spotlight: Esther Gacigi and Koima Josephine (Teach For Kenya fellows)

In Kenya, the most notable climate change impacts are droughts and floods. In 2020, Kenya experienced drought that lasted for three years. Kenya's rain fed agriculture was affected leading to low agricultural yields and high food prices. Underserved communities, like Mukuru kwa Njenga, were the most affected by food poverty; many were unable to afford three meals a day.

Esther Gacigi and Koima Josephine, educators in Kwa Njenga Primary engaged their learners in climate education conversations. There was a knowledge gap as learners and the community didn't know about climate change yet they were living through one of its impacts. They first built the knowledge of climate change with learners then prompted them to identify climate impacts in their community.

Learners identified food poverty and water shortages. The learners then came up with an innovative gardening solution that uses vertical gardens and reuses plastic waste as gardens. The parents support this project by providing seeds and plastic bottles to be reused, and some have adopted these gardens at home. Esther and Koima also developed a climate education module. They use it to train teachers to incorporate climate education into the classroom. ([See project video here](#)).



8. Find sources of expertise that can help your climate education design or work

Most teachers don't learn about climate change in their professional training, and the complexity of the topic can make teaching about it feel daunting and overwhelming. The good news is that there are many diverse sources of expertise around, that can help us through knowledge, insight or materials. Drawing on these sources of expertise is vital. This can include sourcing for accurate and up-to-date resources to help you engage learners in climate education more effectively. This can also mean seeking experts from the community, education sector, and even the government to support your work.

Building on the previous point around community engagement: Some community members may drive climate solutions, and be a role model and source of inspiration for students - get them involved, you may be surprised how eager people are to share and pass on their insight, especially when it comes to speaking with the students.

Expert sources can also lend credibility to climate education, and alleviate concerns over misinformation. When information comes from trusted experts, the community and the learners are more likely to accept it, and work on it. When experts are from the community you want to engage, this can also create a positive relationship with the community, and they will more easily accept and implement suggested solutions. Experts can also help to break down complex information and make it digestible to learners and the community.

A structured, sustainable way of finding sources of expertise is by building partnerships with climate change or environmental organizations. For example, with the local branch of the environmental management authority - this can also offer exciting additional opportunities (see example below).

💡 Spotlight: Teach for Zimbabwe Partners with Malilangwe Trust

Teach for Zimbabwe partnered with Malilangwe Trust, an NGO that is leading environmental conservation in Zimbabwe. Malilangwe aims to uplift communities by improving the quality of education and empowering learners to take climate action and live sustainably. This partnership entails that Malilangwe will support 10 Teach for Zimbabwe fellows to work in Chiredzi. The fellows lead climate education work at their schools by engaging learners and the community. These climate educators collaborate with learners and the community to identify climate related challenges and come up with solutions.

They also engage women to form climate groups that take climate action. Women have come up with projects like the Khomonani women's garden that addresses food poverty and women's financial empowerment. The climate educators partner with various stakeholders, including the Ministry of Education, in implementation of these projects.



9. Build community and allyship with others

Climate education can be a lonely business, given how little present it is in classrooms and schools. It requires persistence and lots of convincing work. To 'stay in the game', we advise you to build community with other climate educators who face similar challenges and who can be allies and sources of insight & inspiration for tackling the barriers. For example, the Teach For All Climate Education Community and the Pan-African Climate Education Network offer great spaces for building this community with like-minded others. Besides building community, you should also hone your own resilience to maintain your energy and passion for this work.

Climate education is most powerful and durable when it's integrated in a whole school approach to climate change/environmental sustainability. This means learning around climate change and environmental sustainability is embedded across the entire school and addresses the needs of learners, staff, and the wider community, not only within the curriculum, but across the whole school and learning environment. Creating such a whole school approach requires building support from school leadership, other teachers and the wider community - its impacts can be incredibly powerful, driving collective climate action in the whole wider community.

10. Focus on local action, rooted in the lived daily experiences of students

Climate education should be rooted in the daily experiences of learners and the community. This personalization creates a deeper understanding of climate change. While this is linked to contextualizing climate change, this allows learners to take a microscopic view of their life in relation to climate change. When students realize their own impact and agency in their context, they relate to the issue - otherwise, climate change often seems abstract, far away, and not relevant to one's own life.

Thus, start by highlighting local climate-related issues, events, and success stories. Use examples from the community to make the topic relevant and relatable to students' lives. This helps students see the direct impact of climate change on their surroundings. Recognize the cultural diversity within the community and how different cultural practices may intersect with climate issues. Embark on field trips and engage with local experts, activists, and community members in the educational process.

11. Engage with the wider community, including in identifying local challenges and solutions

Engaging the community transforms climate education from an isolated endeavor to a collective effort that encompasses the background and collective experiences of the community. The community is an incredible resource of knowledge and insights, but also of collective action and impact. In practical terms: think of ways to involve parents and other community members in the climate education work – how can they support by providing materials and resources, exploring local challenges, lending a hand in setting up a school garden, learning alongside the students on how we can all mitigate, and adapt to the impacts of climate change?

As indicated, climate education should not only align with the needs and impacts of climate change faced by the community, but also build collective action on these issues together with the community. This can be done by inviting community members to visit your learning activities with students, as co-learners; you could also encourage students to share what they learn about climate change and solutions with their families and relatives. If students understand that they are not alone in their action on climate change, that they can learn from others, and that what they do is relevant for others, this has a very empowering effect.

A vital aspect linked to this: impacts of climate change are often endangering livelihoods, for example in agriculture or forest services. Dialogues with the wider community should also address questions of alternative livelihoods and how the community can transition to these.

12. Connect climate education to real world needs and vital related issue areas

Climate education is not a fixed set of activities - rather, it's an approach that should be contextualized to the local needs and understand the relevance and connection of climate change for the community. For example, the key climate change impact in the community may be droughts that drive food insecurity and water shortages - it may be extreme heat leading to health challenges - it may be violent storms harming infrastructure and homes.

Whatever the predominant link may be, it is important to help students connect these dots, to help empower them and the wider community to make informed choices that contribute to climate resilience and overall well-being while also fostering sustainable practices.

For example, you can engage local health organizations, nutritionists, and environmental experts to provide practical insights on how climate change affects food production, food security, and public health. You can develop interdisciplinary lesson plans that connect climate change with subjects like biology (nutrition and ecosystems), chemistry (pollution and health), and geography (climate patterns). You can establish community gardens or local sustainable farming initiatives to learn together about sustainable agriculture practices. The key take-away is that related issues should be identified and the climate education connected with them.

13. Build on indigenous and traditional knowledge

Many communities have for many decades lived in balance with their natural environment. While the frequency and severity of extreme weather conditions has increased due to climate change, some degree of environmental challenges (like droughts or floods) have always existed, and communities have developed and tested ways of dealing with them. This traditional knowledge from within the community offers rich (, deeply contextual) insights that should be integrated in climate education.

Thus, in the exploration of problems and solutions linked to climate change, connect your students with local knowledge-bearers or with written indigenous accounts (for example, of land management and of our deep interconnectedness of us human beings with other elements of the natural world). Besides offering great insights, these sources of information also show students that they are not the first ones experiencing such impacts (while at different scales), that they don't have to "reinvent the wheel", connect them with their community and heritage, and create a great basis for building community-centered solutions.

Shiella Atto (Teach for Uganda fellow)

he is serving at St. Johns Nabuganyi Roman Catholic School in Kayunga, in her rural farming community, locals grossly practice deforestation for charcoal burning and as a
repel effect of this, there has been continuous unpredictable weather patterns including among
others prolonged dry spells and heavy rains at unpredictable intervals of the season.

These occurrences have led to food poverty and continuous water shortage among the locals and school going children, absurdly many children miss school and take long distances in search of water and food. Since over 80% of families in this community fully rely on agriculture for both income and supporting livelihoods, its cripplingly distressing now that most families and learners in communities have to worry more about the next meal and water caused by the above catastrophe as opposed to going to school thus a continuing and increased dropout rate.

To address this challenge, She engaged learners and the community about climate change. Shiella collaborated with the community to get water saving tanks for surplus water storage during rainy seasons and also mobilized resources collectively with the local stakeholders that has now erected a borehole for the school and community that learners now do not have to worry about finding water but concentrate in school. In a bid to restore the destroyed forests, Shiella has engaged her learners in tree planting but most importantly secured a wood fuel saving stove to curb the tree cutting pressure on local forests , she has embarked on a skilling drive where she is now training local people on building the same stoves in their homes to collectively reduce on the deforestation practice as she plants trees with the community too.

In response to the worrying food poverty for her learners, she and her learners started a nutritional garden on the school deserted field where they are now able to practicing organic farming and grow drought crops like sweet potatoes, maize, beans and cassava with rely on the community's indigenous knowledge to keep pests and diseases away.

Learners now eat cassava and porridge at the school as part of their feeding program. Shiella embraces that the fact that these Climate change response projects she has carried out have increased school enrollment, motivated concentrated learning among learners thereby improving their literacy and numeracy levels and also empowered her community in collectively addressing these issues. Promisingly, now communities and their children do not have to worry about water and food scarcity anymore but rather find purpose to come to school every day as a safe hub for collective solution finding to the arising climate challenges and livelihoods.



14. Make climate education hopeful and concrete

When you present climate change to learners, it can seem like such a vast and complex issue. Its impacts are devastating and learners can sometimes feel like they are too small to do anything about it - this potentially drives feelings of helplessness and anxiety in students. In the process of working with students to build their agency, instill in them the sense of hope and possibility that there are solutions we can all drive to tackle the issue. After all, hope is the virtue by which we transform systems. For example, you can build hope with students by sharing stories of what people (especially children) have been able to do on mitigating and adapting to climate change. These stories of impact can show what's possible and motivate children to believe in their agency. You can also connect your learners with learners in other contexts - this can give learners a sense that, even if contexts differ, we all seek to take action in our contexts.

15. Make climate education problem-based & solutions based

A problem-based approach allows students to explore and iterate on climate challenges and to make students' interest and curiosity the motor of learning. Ideally, start with a key climate change / environmental challenge in the student's community - for example: prolonged droughts leading to water and food shortages. Explore together with students the causes of this problem. Support them in discovering the connections between aspects (sticking to the example of droughts, you can explore together how the frequency and severity of droughts is linked to climate change). As outlined before, the student's interest and iterative discovery of the problem should be the driver of learning, making it relevant and connecting with the daily experiences and implicit (or explicit) knowledge of students.

Once students have explored the problem and connections with climate change and human activities, channel the conversation towards discussing solutions. Keep in mind that solutions should be realistic and attainable at the community level and that students should be able to see their own role in this solution. In the example of prolonged droughts, your students and you could discuss ways of water conservation, how the school community could do this, and how this water can be used, for example, for cultivating a school garden where food is grown.

Ideally, this discussion does not remain theoretical, but students are able to put their ideas into practice (for example, by building a small water tank and water capture mechanism; by cultivating a small school garden – great, illustrative examples of this abound, see the example below). Ultimately, interest is the greatest driver of discovery and deep learning, and practical application shows students their own role and self-efficacy in driving forward solutions.

Tip: if you lack understanding of certain climate change problems (we all do!), you can consult reputable resources (such as the Climate Education section of the Teach For All Learning & Insights Hub) or look for people in your community with expertise (See point 8 on this blueprint).

💡 Spotlight: Irene Nagudi (Teach for Uganda Fellow)

Irene serves in Nakivubo Primary school as a Cohort 5 fellow. In her community, over 900 learners are enrolled in primary school at the beginning of the school year. In primary four, only 163 out of 900 remain in school. In Primary 7, less than 50 learners sit for their national exams. These high dropout rates are linked to climate change as with erratic rainfall, there is hunger and malnutrition, and higher rates of poverty.

To address this challenge, Irene engaged her learners in climate education. The learners learn about climate change and its impacts, and they investigate how climate impacts are shaping their everyday life. They collaboratively came up with a nutritional garden that can serve learners while at school. The learners also engage in greening schools where they plant fruit trees and flowers to create a greener and more conducive learning space. They also engage the community in awareness campaigns. Irene founded Kichini Gardens Initiative to target more teachers and learners in Uganda to take climate action.



16. Encourage creativity in students for expressing themselves about climate change

An important way of recognizing one's agency on climate change is to have ways of expressing emotions and thoughts about the issues. For many students, creative ways of expression, like songs, poems, arts or creative writing allow them deep reflection and expression. Thus, for example, encourage students to write climate-related essays, short stories, or journals, to express their thoughts and emotions about the issue. Incorporate art projects that focus on climate themes - students can create paintings, sculptures, or digital art that convey their perspectives on climate change.

Host workshops where students can learn about songwriting and compose climate-themed songs - they can perform these songs in class or at school events. Organize poetry slams or spoken word events where students can share their climate-related poems - encourage them to explore different styles and themes. Many examples of African classrooms illustrate the deep learning and connected-ness with the issues for students when they have such means of expressions. What's more, they strengthen students' reading, writing and speaking skills more broadly, and strengthen their confidence.

17. Engage learners in hands-on experiences

Further to the focus on engaging students in solutions to climate change impacts, climate education should try to mix theory with hands-on experience - to not only engage the hearts and heads of students but also their hands. This triggers the learning of students in very different ways than purely cognitive learning, and also gives them a strong sense of agency / self-efficacy. Such hands-on activity can, for example, be creative (for example, creating art or toys from recycled materials, like Judith or Egoitz) or physical (like gardening or cultivating a fish pond). The examples from across the classrooms of our fellows show deep, connected learning and retention of information when students understand why different hands-on activities can help in addressing (adverse impacts of) climate change and then experience their own self-efficacy in realizing the activities. In addition, the examples show that students often experience hands-on learning as fun and feel motivated by the activities.

Spotlight: Emmanuel Kilaso (Teach for Nigeria alumnus)

Ita-iyalode is an underserved community in the heart of the city of Abeokuta, in Ogun State, Nigeria. High poverty rates in this community affects education where learners lack educational materials like books, bags, and uniforms. This leads to high absenteeism rates and affects the quality of education. In this community, waste management is also a huge challenge. It is characterized by roadside dumping and waste in rivers affecting the quality of life and leading to flooding and health implications. To address these challenges, Emmanuel engaged his learners in climate education in and out of the classroom.

Together they came up with a project that sells plastic waste to recycling companies. Learners liaise with the community to collect plastic and sell them. The funds acquired are used to buy educational materials like books and uniforms. Their project later evolved to include recycling old cloth materials like jeans and African print to create school bags. Learners collect these materials and they use it to create bags that are given freely to learners at the school. Emmanuel founded Securecycle to upscale this project in other schools. The initiative partners with schools to form eco-clubs where learners address climate related challenges like pollution and water sanitation and hygiene. Learners also participate in greening schools initiative where they plant trees to create conducive learning environments.



18. Provide children with a physical place to complement learning of theory

There are many options for designing outdoor spaces in ways that complement students' theoretical learning and to give them opportunities for hands-on learning. For example, a school garden for growing food, a water conservation tank, a fish pond or small school farm, a small renewable energy facility, trees, etc. (see [these examples from Zimbabwe](#) for inspiration). Bins and plastic recycling options in school also support the students' climate mindset.

Another critical aspect when it comes to physical places, is that children should always have spaces in school where they can play and be outside. This is especially relevant for climate education as it connects students with the outside world. Creating a green playground in school is a great way for students to connect play and outdoor activities - and it again fosters a vital form of expression for children that is not purely cognitive but creative.

19. Develop ways of monitoring and evaluating the impact of climate education on students

As described above, climate educators should continuously apply an entrepreneurial mindset and innovate their climate education in line with the needs and experiences of students. As part of this, it's advisable to develop ways to frequently monitor and evaluate the students' learning and whether key objectives are achieved - not purely in terms of test outcomes but of students' motivation, agency, grasp of the issues, and how the learning connects with their lives. For this, listening to the students is key - do they understand the relevance of their learning? What are they interested in exploring next and why? etc. Given that climate education is holistic (ultimately, good climate education is good holistic education), you should also observe how the realization of agency strengthens students' motivation, expression and growth in other areas.

If you want to go one step further, you could also seek to have frequent dialogues with community members to understand how the climate education done in school strengthens the climate awareness in the wider community and leads to behavior changes. All this 'data' from monitoring and evaluation helps you to continue evolving the work with students in meaningful ways and to make sure climate education is relevant and empowering.

20. Continue evolving your climate education with an innovative spirit and a sense of possibility

Climate education is widely absent from schools and classrooms, and in most contexts a fairly uncharted territory - leading climate education thus requires an entrepreneurial mindset that is both innovative and ambitious. That same spirit you want to awaken in students, so that they develop a sense of agency and realistic optimism for climate action that's rooted in a sense of possibility. This links to many of the other aspects identified here: for example, you should emphasize hands-on learning experiences that allow students to work on real climate-related challenges; if possible, collaborate with partners to provide students with access to practical projects and mentorship opportunities; encourage a long-term perspective in students, by involving the community and highlighting the enduring nature of climate challenges; and help students understand that sustainable solutions often require patience and persistence.

We encourage you to maintain this entrepreneurial mindset and to continue evolving your approach with students as well as your areas of focus in climate education. For example, you can reflect regularly about what aspects work well and what can be improved in your work with students, as well as what additional aspects or areas you would like to include in your work - from this reflection, you can set concrete intentions (remember, that these intentions / goals should ideally be SMART: specific, measurable, achievable, relevant, and time-bound).

Spotlight: Judith Chandia (Teach For Uganda alumnus)

Judith Chandia works in Luwero, a rural community in Uganda. Her community has been affected by erratic rainfall and droughts which led to food poverty. This challenge affects the school going children leading to malnutrition and high absenteeism rates. This affected educational outcomes leading to high illiteracy levels. To address this challenge, Judith engaged the community to come up with a solution. She started Greening Schools for Better Learning Initiative in Lusenke Primary School. Through the initiative, Judith engaged learners to form an environmental club. In the club, Judith together with her learners create songs, poems, and dances that spread awareness about climate change and environmental stewardship.

Learners have performed at community events to engage the community in their work. They also run a nutritional garden, plant trees, and recycle plastic. The initiative partnered with parents and the community to help run the program. The community provides tree and vegetable seedlings and helps in plastic collection for recycling. The community, seeing the effects of learning from outside under a tree, constructed a classroom for Chandia.

There is a sense of ownership with the community where she partners with them to identify challenges and come up with solutions. In Lusenke Primary, this initiative has improved attendance rates, academic outcomes, and learners are able to earn an income from selling their recycled goods.

Judith extended her initiative to other schools recognizing that all learners should be engaged in climate education. The initiative has now partnered with 5 schools in Luwero where Judith works with teachers and the parents to run the environmental clubs. She has also partnered with the local government and organizations to support her work.



Editorial Note: this Blueprint was compiled by Esther Gacigi, Patrick Mohamed Kamara, Ivan Samuel Womala, Emmanuel Kilaso and Edson Dongo, upon their joint Pan-African Climate Education Leaders learning experience in Uganda in September 2023. Guidance was provided by Lennart Kuntze (Teach For All). The group continues to regularly update the best practices in the Blueprint and add timely, illustrative examples from across African schools and classrooms. For any ideas and suggestions for how to further improve this Blueprint, please send an email to Esther Gacigi (esthergacigimunyingi@gmail.com).