COVER

Title: Climate Change Education: Teachers' Perceptions and Practices in Brazil

Subtitle: Results from a national representative survey conducted by the Office for Climate Education (OCE) and Nova Escola.

Logos and date

OCE short description

The Office for Climate Education (OCE) is an organisation dedicated to promoting quality climate change education (CCE) worldwide. Recognised as the leading global expert in climate change education, OCE supports teachers, education and environmental authorities, and the scientific community through the development of educational resources, teacher training programs, and international cooperation projects. As a center under the auspices of UNESCO, OCE plays a key role in strengthening climate literacy, particularly in the Global South, by translating climate science into actionable knowledge for younger generations. Learn more at www.oce.global

Nova Escola short description

NOVA ESCOLA is a non-profit, social-impact organization whose mission is to empower educators to transform Brazilian public education and enable students to develop their full potential. An absolute benchmark in teacher-focused content since 1986—when it began as a print magazine in 2015, with the support of the Lemann Foundation, it evolved into a digital platform attracting over 3 million visits per month. It produces free investigative reports, self-paced courses, professional development programs, lesson plans, and educational materials to support teachers, pedagogical coordinators, and school principals working in Brazil's basic public education system. Learn more at www.novaescola.org.br.

Acknowledgements

The Office for Climate Education (OCE) and Nova Escola gratefully acknowledge the time, insights, and dedication of all those who contributed to the production of this report. We extend our deepest thanks to the teachers across Brazil who generously took the time to share their perspectives, practices, and challenges with us. Their voices are the foundation of this document.

This report was produced as a joint initiative between OCE and Nova Escola in the lead-up to COP30, with the shared goal of elevating climate change education as a strategic priority for Brazil's education system. It was coordinated by Djian Sadadou (OCE) and Cristiano Ferraz (Nova Escola). Scientific and editorial support was provided by Elena Pasquinelli (OCE), whose guidance was instrumental throughout the process.

This document would not have been possible without the dedication of the broader teams at OCE and Nova Escola, including technical, editorial, and communications staff, as well as the contributions of Nova Escola's data and engagement teams.

Inspired by UNESCO's 2021 publication *Getting Every School Climate-Ready: How Countries Are Integrating Climate Change Issues in Education*, this report seeks to mirror that global perspective with a national lens, offering a clearer picture of the Brazilian educational landscape in the context of climate change, and contributing to global efforts as Brazil prepares to host COP30 in 2025.

Data Source: OCE and Nova Escola's Survey of Brazilian Teachers on Climate Education (2025)
Cover photo credit: AdobeStock, under license
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Contents

Executive Summary

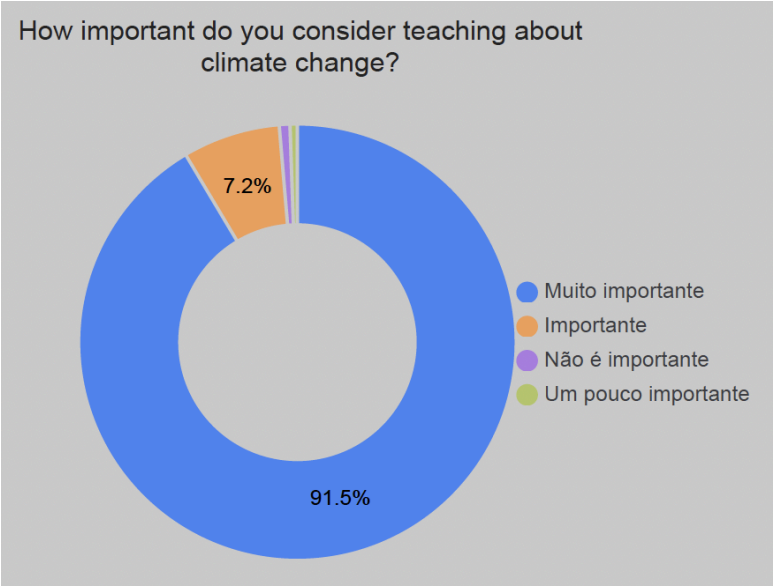
This report summarizes the findings of a national survey conducted by the Office for Climate Education (OCE) and Nova Escola to assess the perceptions, practices, and needs of Brazilian teachers in relation to climate change education. The study reveals a strong recognition among educators of the importance of climate education, alongside a substantial demand for more institutional support, training, and pedagogical resources. These findings echo global patterns identified by UNESCO (2021), while offering regionally specific insights into Brazil's educational landscape.

Key findings:

- 92% of teachers consider climate education "very important".
- Less than half integrate climate topics weekly.
- Over 40% report no climate-related action plan in their school.

- Teachers express high interest in training but feel unsupported.
- Many are personally involved in climate actions.

Graph: Importance of Climate Education
Perceived Importance



Introduction: Why Climate Change Education Matters

Brazil, as a country deeply affected by climate change and rich in biodiversity, plays a critical role in the global effort toward sustainability. Educators are key agents of transformation, and understanding their perspectives is key to help craft relevant strategies to strengthen national responses to the climate crisis. This survey, led by the OCE and Nova Escola, aims to gather actionable insights that can inform policy, teacher training, resources production and curricular reform.

Climate change is already affecting Brazilian communities through extreme weather events, deforestation, droughts, and loss of biodiversity. As such, empowering educators with the skills and knowledge to guide students through climate-related issues is essential.

Why Teachers' Preparation Matters

The results recently released by the IEA from the TIMSS 2023 Student Questionnaires (for fourth and eighth grades) on students' knowledge, attitudes toward the natural environment, and environmentally responsible behaviors indicate

wide variability both among and within countries. Brazil ranks in the bottom third when environmental knowledge is considered.

The data also show that teachers' reported classroom practices emphasizing environmental sustainability have only a limited relationship with students' environmental knowledge at both grade levels. This suggests that having motivated and engaged teachers is not enough to ensure that students acquire the knowledge necessary to respond appropriately to climate change.

The importance of teacher preparation in fostering student success cannot be overstated. Strong evidence (e.g., Darling-Hammond and Youngs, 2002, Hindman and Stronge, 2009, Staiger and Rockoff, 2010) consistently shows that teacher effectiveness is a key driver of student achievement across all education systems. In fact, it has a greater impact than factors such as class size, student background, or prior academic performance. The "teacher effect" (Nye, Konstantopoulos & Hedges, 2004; Manimozhi & Srinivasan, 2018; Ku & Kim, 2014; Ganishma, Guler & Karadag, 2019; Blazer, 2016) the influence of teacher quality on student outcomes, is a well-established phenomenon, with research linking it to improvements in students' academic achievement, social-emotional development, and behavior.

Among the various attributes that contribute to effective teaching, one stands out: a teacher's self-confidence, or sense of self-efficacy (Klassen & Tze, 2014). This characteristic has proven to be a significant predictor of teaching quality. For this reason, our analysis places particular emphasis on examining teacher self-efficacy.

Methodology

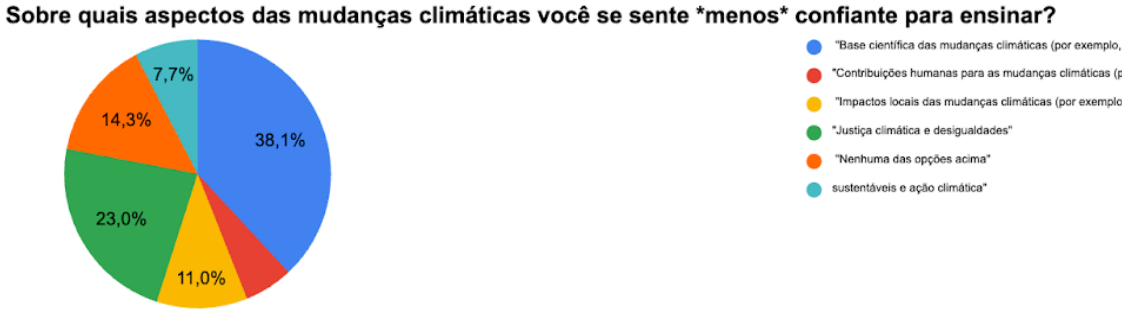
The survey was conducted online in early 2025 and reached a geographically diverse and representative sample of educators across Brazil. Teachers from all five macro-regions participated, including urban and rural schools, and across different teaching levels and disciplines. The questionnaire included multiple-choice and open-ended items addressing perceptions, practices, barriers, and recommendations.

A total of over 1,000 teachers were invited, and several hundred responses were validated for analysis. Responses were anonymized and analyzed using both quantitative and qualitative techniques.

What are Teachers' Perceptions and Attitudes towards Climate Change Education ?

The vast majority of respondents (92%) rated climate change education as "very important." This consensus was stable across regions and genders. However, **confidence** in teaching the topic varied widely. While many feel morally committed, few feel pedagogically prepared, with over 38% of teachers declaring not feeling confident in teaching the scientific bases of climate change. This number is

significantly higher than the proportion of teachers not feeling confident in teaching human contribution to climate change (6%), solutions to climate change (8%), local impacts (11%), climate justice (23%). This discrepancy underscores clearly the need for a sound basic scientific foundation for all teachers on climate change as the premise to higher implementation rates.



Teachers often referenced the emotional weight of climate education and the responsibility they feel, though some expressed concern over lacking scientific or pedagogical tools to engage students effectively.

This is a global trend observed on the ground by the team of the Office for Climate Education, and that echoes the result of studies conducted among youth around the world regarding their emotions in the face of climate change. Over 63% of 16-25 years old declare feeling anxious about climate change, according to a study published in *The Lancet* in 2021[1].

Action:

Teachers and education professionals can reference the pedagogical resource “The emotions of Climate Change” for insights on how to address this topic in the classroom.

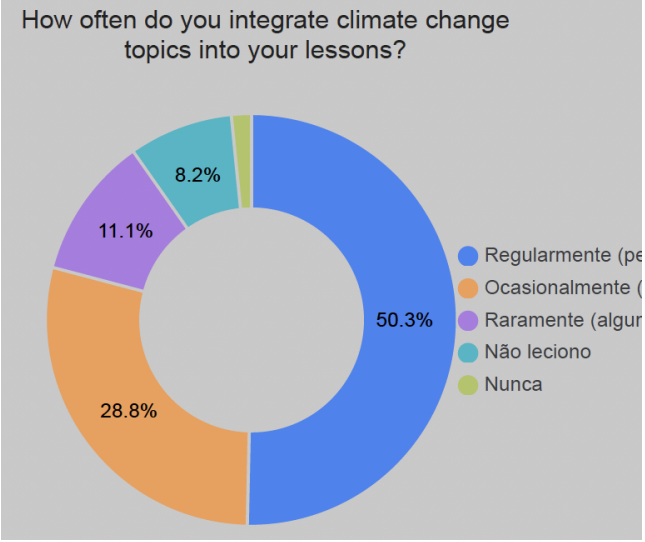
To what extent are teachers integrating climate topics in their practices?

While some teachers regularly integrate climate topics into their lessons, most do so only occasionally. Integration is most common in geography, science, and environmental studies. Teachers also express a need for interdisciplinary approaches and context-specific materials.

1

Marks, Elizabeth and Hickman, Caroline and Pihkala, Panu and Clayton, Susan and Lewandowski, Eric R. and Mayall, Elouise E. and Wray, Britt and Mellor, Catriona and van Susteren, Lise, Young People's Voices on Climate Anxiety, Government Betrayal and Moral Injury : A Global Phenomenon. Available at SSRN : https://ssrn.com/abstract=3918955 or http://dx.doi.org/10.2139/ssrn.3918955

Graph: Frequency of Teaching Climate Topics
Teaching Frequency



It is interesting to notice that there seems to be no notable discrepancy on the frequency of teaching climate change topics based on the geographical region of the teachers when we focus on the ones not doing it regularly.

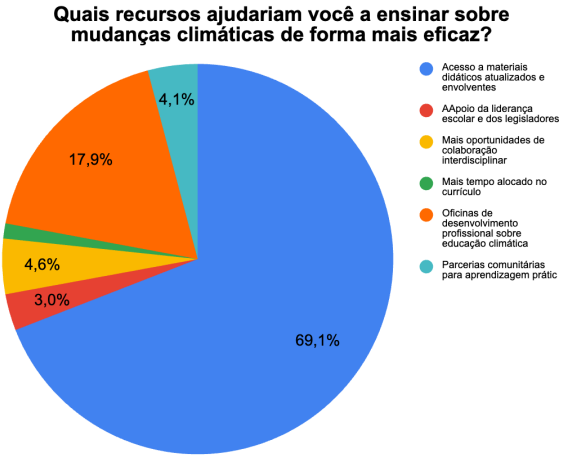
Region	Nunca	Ocasionalmente (pelo menos uma vez por mês)	Raramente (algumas vezes por ano)	Regularmente (pelo menos uma vez por semana)
Centro-Oeste	3.1	38.5	12.5	45.8
Nordeste	1.2	30.0	10.3	58.5
Norte	1.4	24.1	13.5	61.0
Sudeste	2.0	33.9	13.3	50.8
Sul	1.6	26.9	9.7	61.8

Table: Teaching Frequency by Region (%) (see attached visual summary in the print version)

Action:

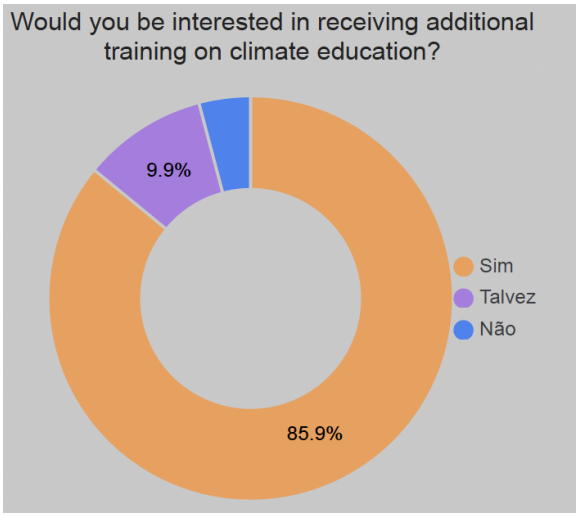
"Nova Escola has developed an AI-powered tool that helps teachers create lesson plans faster than ever, directly through WhatsApp. By sharing the skill or topic they want to work on, teachers receive in less than a minute a step-by-step guide with activity suggestions, allowing them to plan lessons anytime, anywhere.

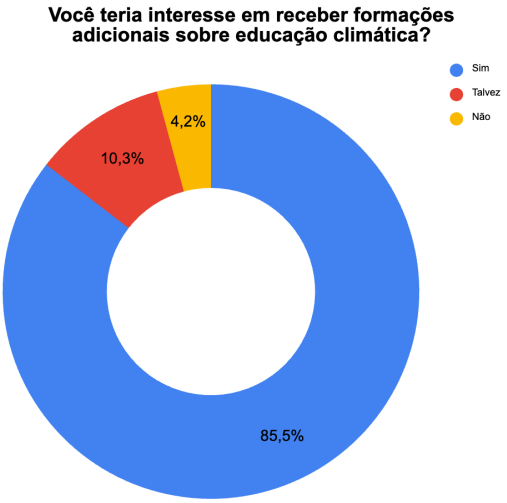
What are the barriers and needs of teachers to implement climate change into their practice?



In open responses, educators consistently called for curricular flexibility, and the inclusion of indigenous and local knowledge systems.

Additionally, 86% of teachers declared their interest in receiving professional development workshop on climate.





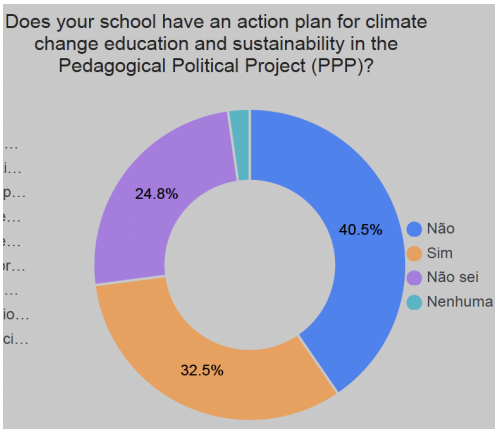
Action:

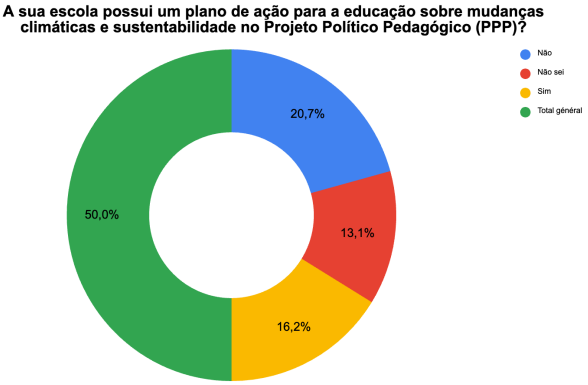
The Office for Climate Education (OCE) provides education systems with up-to-date, contextualizable open education resources as well as professional development workshops based on active pedagogies to support teachers in their climate change practices.

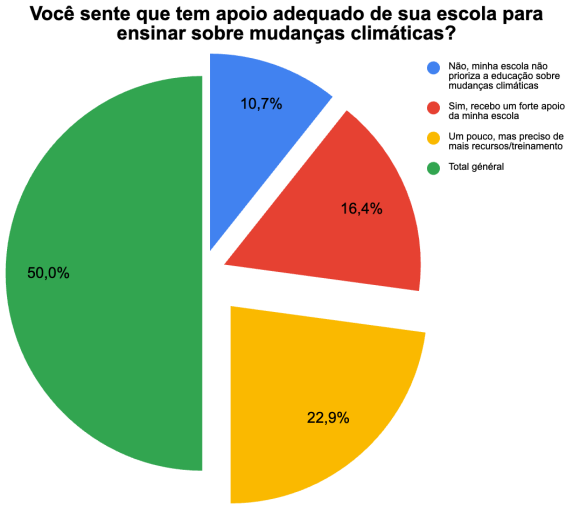
What local level institutional support is available for teachers on climate change education?

Only a minority of teachers reported having institutional backing for climate change education. Around 60% mentioned not knowing (24%) or working in a school which has a Political-Pedagogical Project (PPP) that includes climate action.

Graph: Climate Action Plan in Schools (PPP)
Has PPP Plan







In many cases, the inclusion of climate education depended on the initiative of individual educators or school principals.

Why is this important?

Providing resources or offering training alone is rarely sufficient to bring about meaningful and lasting changes in teaching practices. Successful implementation efforts consistently rely on the presence of a dedicated team that acts as the active driving force behind the process. This team serves as a catalyst raising awareness, mobilizing stakeholders (such as teachers and school leaders), and coordinating the various activities needed for effective implementation.

Crucially, this implementation team plays a supportive role for teachers, offering not only training but also ongoing coaching, data collection, and feedback. While existing models vary in terms of who selects the team members, there are clear indications that thoughtful selection is key. These teams typically consist of 3 to 5 individuals, and maintaining the same team over several years is recommended, as the accumulated knowledge and experience become valuable assets when scaling or replicating the intervention across different contexts.

To be effective, the team must span different levels of the educational system bringing together representatives from schools, local education authorities, and research institutions. This ensures that when a teacher or team member encounters a challenge beyond their capacity to solve, they can turn to someone within the team who has the necessary resources or authority to address it.

Institutions that invest in this kind of active implementation send a strong signal that a genuine cultural shift is underway (Ryan Jackson et al., 2018). Teachers are no longer left to navigate change alone within the confines of their classrooms. Instead, the responsibility for improving teaching practices is shared across a team that provides ongoing, structured support. This collective approach not only increases the likelihood of success but also fosters a deeper, more sustainable transformation in teaching culture.

Action:

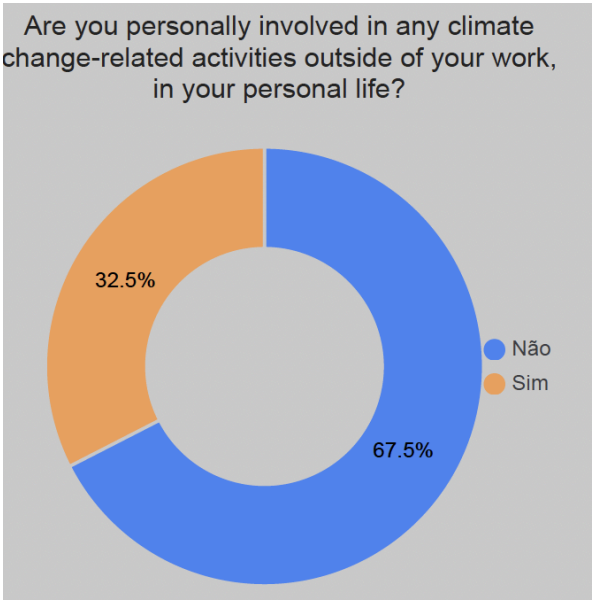
Nova Escola supports teachers in the development of PPPs, to ensure widespread integration of topics within schools. More information on this support can be found here:
https://novaescola.org.br/conteudo/22096/como-integrar-a-educacao-climatica-ao-projeto-pedagogico-das-escolas

Are teachers climate agents at all times?

Despite professional barriers, many teachers believe schools can be catalysts for community awareness.

However, although 92% of teachers consider climate change education important, a majority of them, 67%, do not engage with climate change in their personal life outside their working hours. This underscores the need to further integrate climate change education aspects such as professional development programs, within their working hours and formal education systems, instead of relying in the voluntary extra-hours commitment of teachers.

Graph: Personal Engagement in Climate-Related Activities
Personal Engagement



Policy Recommendations – Grounded in Teachers' Voices

Our analysis of survey responses reveals a strong alignment between what Brazilian teachers are asking for and what is needed to strengthen climate change education nationally. The following recommendations reflect both international best practices and the lived experiences of educators across Brazil.

1. Integrate Climate Change into the Curriculum

Teachers consistently called for climate change education to be embedded formally in the school curriculum, starting from early education and sustained through all levels.

> "Leis mais eficientes e a obrigatoriedade de trabalhar educação ambiental em todas as escolas." - *Professor(a), Ensino Fundamental Anos Finais, Região Nordeste*
>
> "Incluir esse tema no PPP." - *Professor(a), Ensino Fundamental Anos Iniciais, Região Nordeste*
>
> "Deixar disponível no currículo uma carga horária só para tratar do tema junto aos alunos e professores" - *Professor(a), Ensino Fundamental Anos Iniciais, Região Nordeste*
>
> "Intensificar a abordagem sobre mudanças climáticas dentro dos currículo escolar. Procurar sistematizar o tema de forma prática e objetiva. Trabalhar questões ambientais de modo geral é extremamente importante dentro do contexto escolar, mas ultrapassa os muros da escola, pois envolve ações individuais e coletivas, desse modo criar políticas públicas/sociais é

essencial para colocar em prática a educação sobre mudanças climáticas.” - *Professor(a), Ensino fundamental Anos Finais, Região Sudeste*

“Integrar o tema ao currículo escolar, pois sempre que falamos sobre o assunto parece que trata-se apenas de uma questão governamental, muito distante das pessoas. Trazer o diálogo, as discussões para perto é muito importante a meu ver.” - *Professor(a), Ensino fundamental Anos iniciais, Região Sudeste*

“Práticas obrigatórias e diárias nas escolas acerca de contribuições para cuidar do planeta, no que se refere ao clima, como : coleta de lixo seletivo, aproveitamento total de casca de alimentos para realização de comidas,...” - *Professor(a), Ensino Médio, Região Nordeste*

2. Adopt an Interdisciplinary Approach

Respondents highlighted the need for climate change to be addressed across disciplines, ensuring students develop both scientific understanding and socio-environmental awareness.

“Eu solicitaria a inclusão obrigatória da educação climática nos currículos escolares de forma interdisciplinar, desde o ensino básico até o superior.” - *Professor(a), Ensino Infantil, Região Nordeste*

“Incluir o tema no currículo de forma transversal e interdisciplinar.”

“Inclusão de sociologia, filosofia para que os alunos tivessem espaço para discutir mais sobre as questões climaticas que afetam o proprio ser” - *Professor(a), Ensino fundamental Anos Finais, Região Sudeste*

3. Support Teachers with Quality Professional Development

“Investimento em formação profissional docente na área da educação ambiental independente da formação do profissional” - *Professor(a), Ensino fundamental Anos Finais, Região Norte*

“mais apoio financeiros, para incentivar os estudantes como o uso de novas tecnologia.” - *Professor(a), Ensino fundamental Anos iniciais, Região Norte*

“Estudos em parcerias com escolas e secretarias de educação para levar profissionais da área para trabalhar com as crianças em dentro e fora do espaço escolar” - *Professor(a), Ensino fundamental Anos iniciais e Finais, Região Sul*

Teachers emphasized that professional development opportunities are essential for building their confidence and competence in climate change education.

> “Mais investimento para os professores.” - *Professor(a), Ensino fundamental Anos iniciais e Finais, Região Sul*
>
> “Deixar disponível no currículo uma carga horária só para tratar do tema junto aos alunos e professores.” - *Professor(a), Ensino fundamental Anos iniciais, Região Nordeste*

4. Provide High-Quality, Science-Based, Locally Relevant Resources

Educators stressed the importance of having access to well-designed, scientifically vetted, and contextually adapted resources.

> “Disponibilizar mais recursos e incentivos para as escolas municipais utilizarem em atividades voltadas para o meio ambiente e a sustentabilidade.” - *Professor(a), Ensino fundamental Anos iniciais, Região Nordeste*
>
> “Mais projetos para trabalhar em sala de aula.” - *Professor(a), Ensino fundamental Anos iniciais, Região Centro-Oeste*

- Integrate climate change into the curriculum
- Have an interdisciplinary approach to climate change education
- Support teachers by providing quality science based professional development opportunities
- Support teachers by having an offer of high-quality, scientifically vetted and locally relevant pedagogical resources

Alignment with Global Frameworks

This report echoes key findings from UNESCO’s 2021 Getting Every School Climate-Ready survey, highlighting a familiar pattern: Brazilian educators are highly motivated to teach about climate change but often lack the training, resources, and institutional support needed to do so effectively. This gap closely mirrors global trends, reinforcing the urgency of targeting capacity building and school-level infrastructure to bridge motivation and readiness.

The findings also align with Brazil’s broader climate policy commitments. Through its Nationally Determined Contribution (NDC) under the Paris Agreement, Brazil has pledged to enhance public awareness and education on climate, recognizing that informed citizens and youth are critical for sustainable transformation. Embedding robust, quality-focused climate education within school systems directly supports this pledge, strengthening Brazil’s fulfillment of international responsibilities.

By situating these national findings within global priorities including SDG 4.7 on Education for Sustainable Development and the UNFCCC's Action for Climate Empowerment (ACE) agenda this report highlights the opportunity for Brazil to advance its education policies in a way that contributes both to domestic resilience and to international climate commitments, especially in the run-up to COP30.

Further reading

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- OCE. The Emotions of Climate Change – Pedagogical Resource. Link

• Jackson, R., et al. (2018). Building effective implementation teams in education.