

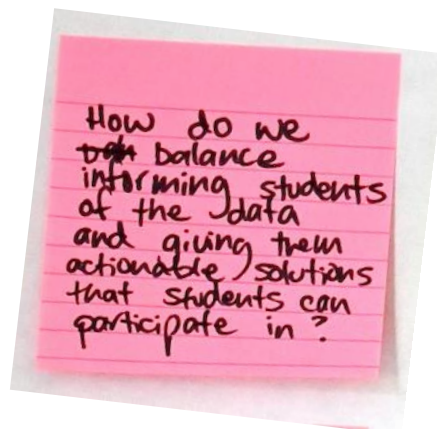
DIVING INTO CLIMATE CHANGE: TEACHERS CONCERNS AND NEEDS

Published: January 17th, 2024

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When we “take the leap” and try out ambitious climate change lessons, we often realize what else is needed to sustain students’ learning as well as our own professional growth. In this post we share what a group of teachers told us during a day of PD, and place their comments in the context of national data trends from other educators. Taken together, these findings can help us anticipate what peers who do this teaching are concerned about and can guide instructional coaches to select resources and experiences that directly address practitioners’ needs.

On a Saturday in the spring of 2023, at a nature reserve just outside Santa Barbara, we hosted an event for pre- and in-service teachers who were interested in learning more about climate change, sustainability, and environmental justice. After a day of activities and sharing, we asked participants to record on sticky notes 1) their *concerns* about teaching these topics and 2) what they felt they *needed to move forward*. Their comments give voice to the summary data of their counterparts across the country.



What are teachers concerned about?

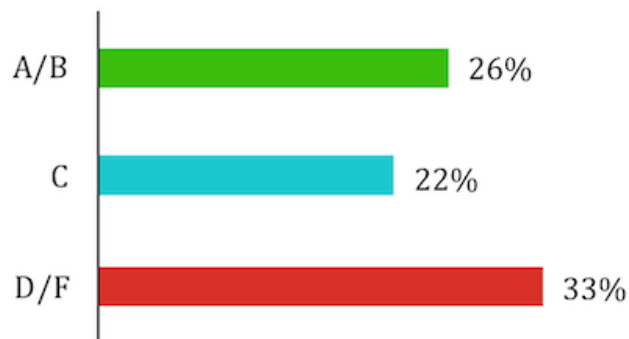
Dealing with the emotional impact on students

Many of our teachers were worried that climate change conversations could take a toll on students sense of well-being. They indicated their desire to address the climate crisis, but needed the skills to help students cope and to envision desirable future(s) (these are two different goals, both requiring support for teachers). Here were some of their comments when asked what concerned them:

- “Introducing a heavy topic to 5 & 6 year-olds.”
- “Sensitivity to guilt that students feel & their possible lack of ability to make change”
- “I need to feel prepared to hold space for eco-grief, but also have answers or solutions or at least realistic pathways for students to envision a healthier, more equitable world.”

- “I want to learn how to mitigate climate anxiety with my students, when I myself have a lot of climate anxiety.”
- “When talking about heritage students we are dealing/tackling literacy and realistically there are issues these communities face for more critical to them, how can we make this relevant to their situations? Why put it on their shoulders when they don’t have the privilege to think this way?”

Their comments reflect a national trend. In a recent nation-wide [survey by the North American Association for Environmental Education](#) (NAAEE), teachers were asked to grade their own schools’ efforts in addressing student needs related to climate change learning. When asked about attending to mental health support, 33% of respondents rated their schools a “D” or “F,” with only 26% giving grades of “A” or “B.”



Anxiety about life on earth is almost unavoidable when we follow the news. I (Kaylee) struggle with my own angst, especially when it comes to our glacial pace of progress toward a more sustainable global society. My own way to manage frustration is to consciously seek out solutions that are in the making. If we start looking, we can find them everywhere. That’s why I ask my students to bring “good news” regarding sustainability and resilience to class in order to make them pay attention to the progress and the [people who are supporting the change](#). Most importantly, you and your students are not alone, and feeling part of the movement can help us talk about our own anxieties and hopes, and to transform them into action. You’ll find good advice for starting conversations with students at the bottom of the page on the *Climate Change Educator* website for [Chapter 10a](#). These resources help young people cope with their anxiety, and there are suggestions for preserving your own well-being for the long haul.

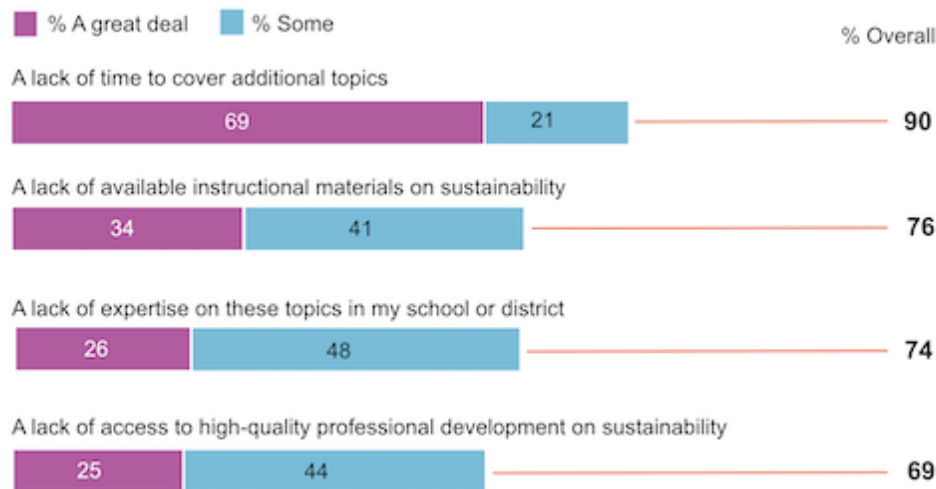
Finding the time: All subjects need to take a bite “off the big climate pie”

Many of our teachers wrote that climate change instruction can be viewed as “one more thing” to insert into an overcrowded curriculum. Here’s a sampling:

- “So much content I already need to get through!”
- “Given how many of the solutions to reducing carbon emission are cultural/political, rather than individualistic, how do we encourage students to act, and how much of that falls on our social science colleagues?”

- “I am concerned about the time it may take in only one classroom. We need every subject area to bite a bit off the big climate pie.”

These comments are reflective of national sentiment by U.S. educators. In a large-scale teacher survey by [The Smithsonian](#), respondents were asked to “indicate the extent to which each of the following poses a challenge to incorporating sustainability-related topics in your curriculum.” Lack of time to cover additional topics was rated as “somewhat” (21%) or “a great deal” of a challenge (69%) by 90% of participants, leading all other concerns such as lack of instructional materials or lack of expertise.



Although we need to pay attention to all the issues above (and how they are inter-related), lack of time can be a potential show-stopper. Lack of instructional materials likely exacerbates this problem because it often falls to teachers to spend precious time developing their own curricular materials.

There are resources circulating out there—many of them flashy but of questionable quality—and it is common to feel overwhelmed, unable to find a good way to start incorporating topics of climate change, mitigation, and adaptation into your curriculum. Because all climate change content we are teaching can be tied to justice, sustainability, and community resilience, it might be more a question of how to share responsibility for teaching these topics across different subjects, rather than expecting science educators to handle it all. Here are just a few ways sustainability and justice are so appropriate to integrate into different content areas.

The social studies inquire into relationships between human populations and the physical world. Included are issues of production, distribution, and consumption of goods across the world and the reality that people have wants that often exceed the limited resources available to them. In social studies students also investigate individual rights and responsibilities, the needs of social groups, the

exercise of democratic freedoms, and concepts of a just society. These topics have climate change written all over them.

English/language arts focuses on storytelling, creative expression, and emotion in ways that science or mathematics cannot. Tools for the work of public persuasion and enlightenment about environmental change are plentiful.

Visual arts, theater, and music provide spaces for imagination, experimentation, and perspective-taking. It empowers young people to create new scenarios for transformative action and social change.

The [NAAEE](#) survey found that sizable majorities of teachers across subject matter areas and grade levels would *prefer* teaching about climate change as *integrated* across these domains. This includes 70% of elementary teachers, 67% of MS and HS science teachers, 71% of MS and HS math teachers, 73% of MS and HS social studies teachers, and 80% of MS and HS English/language arts teachers.

It's not just that climate change and equitable solutions can find a niche within other subjects—it's that this story is too big and complicated to understand without interdisciplinary investigations. These subject areas feature core concepts and ways of being in the world that are aligned with climate change understanding and activism.

What did teachers feel they needed to move forward?

In terms of needs, we expected that most teachers would say they had to have an effective set of curriculum materials, but that is not all that turned up in our data. Most expressed the need to *learn more for themselves*. Some felt they had to understand some of the climate change content more deeply:

- "Learn more about: Climate Change through physics lens, often feels more closely related to Chem, Bio, Advanced placement environmental science. Tipping point examples & local examples."
- "Role of microbes in biodiversity."
- "Want to learn more about how biodiversity affects an area in regards to climate change."

Others expressed the need to understand climate change pedagogy and curriculum structures or how students understood that content:

- "I want to learn more about ways to apply climate change in the different subjects I teach."
- "Simplifying complex cycles and natural variations to make more accessible but still accurate."
- "I want to learn more about how to tie in climate change when your subject is not science and how to engage your students in the conversation."
- "Strategies and tools to help students develop system thinking."
- "How to incorporate CC in ELA? What is effective in persuading students to change their actions?"
- "Interdisciplinary connections with CC. How can I build connections?"

- “How to structure a CC class or unit.”
- “I need to learn more about students’ ideas about climate change.”
- “I need to learn more about how to leverage students funds of knowledge when teaching about climate change.”

As expected, several teachers indicated they did need high quality curriculum to work with:

- “Age appropriate content / lessons for littles. How to make it relatable to them & in a way they can comprehend?”
- “I need to see a lesson plan with what we are learning. Why are we learning it? How do I know I have learned it? Example of what to do in a math class.”
- “Hands on labs and demos for students to visualize effect.”
- “Simple and complex resources for teaching about natural as well as human contributions to greenhouse effect.”
- “Project-based learning for climate justice.”
- “Project-based solutions for student to take action.”

Again, these requests were indicative of larger U.S. trends. Compared with teachers in Brazil, Canada, France and India, U.S. teachers across different subjects report having less support and expertise to incorporate sustainable development into their curriculum ([Smithsonian survey](#)). On average, teachers in these four countries are more than three times as likely as American teachers to say they have the necessary support to incorporate sustainable development topics into their classes (60% vs. 17%).

What can we do?

From our teachers’ responses and from broader U.S. data, we can see where the friction comes in, slowing the uptake of climate change and sustainability education in our schools. But we can turn these speed bumps into opportunities for change. We can foster four conversations in our schools, based on these questions.

1) How can we learn more, together, about climate change, including its history, human impacts, the natural science of it, and issues of injustice related to the problems as well in the global turn toward sustainability ?

2) Where are the opportunities for ELA, Social Studies, Science, the Arts, Math to “bite off a slice of this pie”? How might we coordinate our efforts within schools, or districts?

3) Starting small, where is there curricula with potential that we can build on or adapt as we see fit? What are we looking for in these materials? Use content & curriculum specialists at the district or state level to guide you.

4) There already are effective resources for talking with children and adolescents about their well-being regarding climate change and their uncertain futures. Seek out resource on this website to get jump-started.

Above all—get started!

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