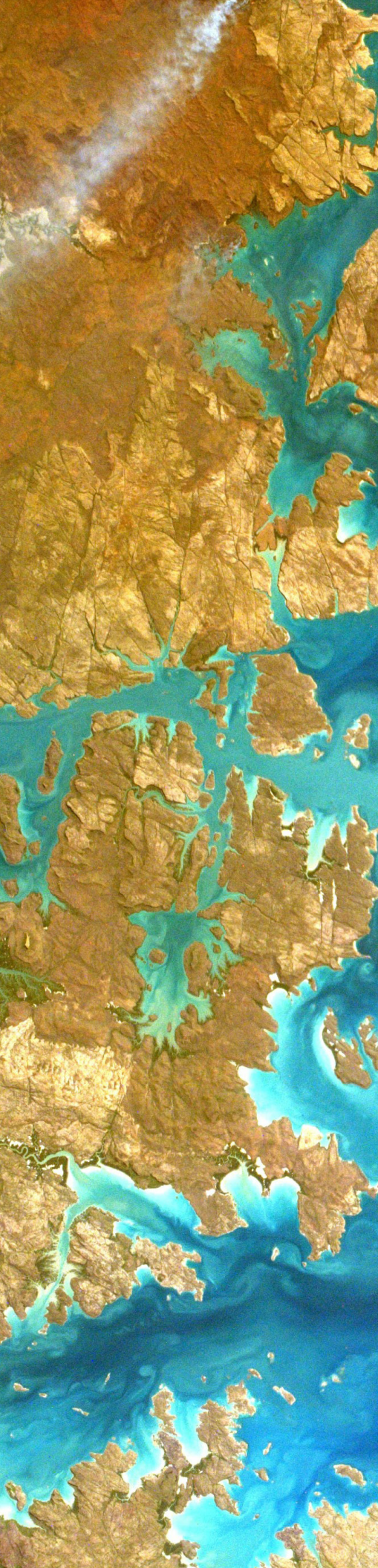




# ON CLIMATE JUSTICE

*Author: José G. González*

**CALIFORNIA JOURNAL OF SCIENCE EDUCATION:**  
*SPECIAL EDITION ON CLIMATE CHANGE*



“We came because we have a class called ‘climate change’ and we started to realize how big of an impact climate change has on our planet. We wanted to speak out about it and show that we care about the planet.”

- Tachmia, 17, Global Climate Strike, New York. Lange, Jeva. [“The climate strike kids, in their own words.”](#) The Week. Sept 20 2019.

“I’m out here today because we’re learning about climate change in class and I think it’s important that everybody’s aware of what they’re doing. Because if people don’t start acting now, then in a couple years it’ll be so bad that even if you act it will be a lot harder to fix it than it is now.”

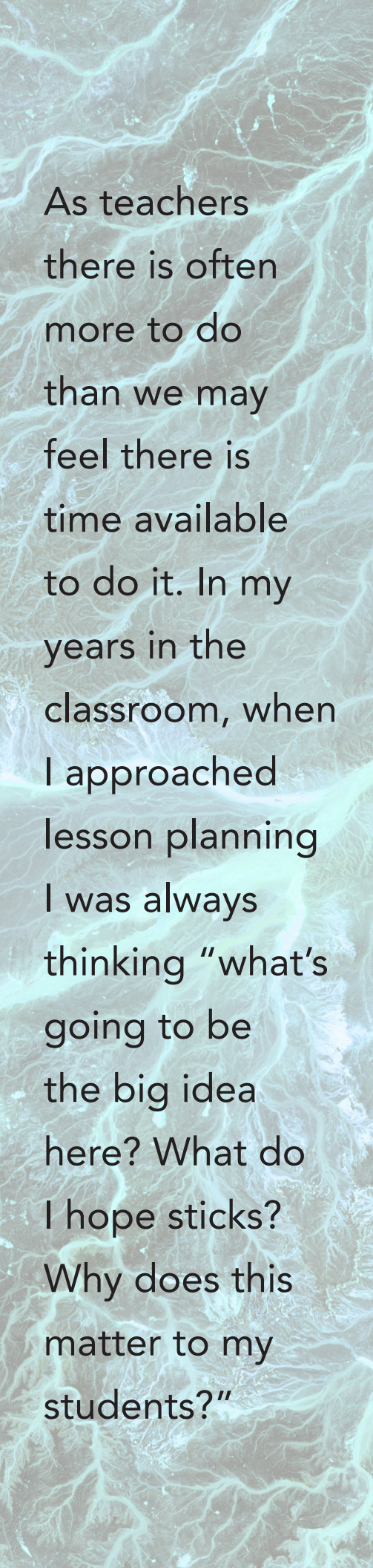
- Emmy, 11, Global Climate Strike, New York. Lange, Jeva. [“The climate strike kids, in their own words.”](#) The Week. Sept 20 2019.

While we promote a certain objective approach to science, it is still a practice that involves people, not just in the procedural practice of science, but also in who it engages and who it impacts. Being attentive to that spectrum of voices is critical to finding the answers to important problems. Connecting classroom learning to the everyday and unique lives of students has a profound impact on learning.

*“The actual doing of science or engineering can also pique students’ curiosity, capture their interest, and motivate their continued study; the insights thus gained help them recognize that the work of scientists and engineers is a creative endeavor [5, 6]—one that has deeply affected the world they live in. Students may then recognize that science and engineering can contribute to meeting many of the major challenges that confront society today, such as generating sufficient energy, preventing and treating disease, maintaining supplies of fresh water and food, and addressing climate change. Any education that focuses predominantly on the detailed products of scientific labor—the facts of science—without developing an understanding of how those facts were established or that ignores the many important applications of science in the world misrepresents science and marginalizes the importance of engineering.” (National Research Council 2012)*



In the world of science education, with a fallible pursuit of objectivity, we may talk of trying to “avoid political topics” or fear that we become “less objective” if we venture into matters of social studies and in particular social justice. Yet, connecting science with the lived experiences and inequities of our communities is a necessary, and I would argue, essential component of ensuring support and an understanding for science in general as a process and subject, while also contributing



As teachers there is often more to do than we may feel there is time available to do it. In my years in the classroom, when I approached lesson planning I was always thinking “what’s going to be the big idea here? What do I hope sticks? Why does this matter to my students?”

to providing for safer, healthier, and more equitable communities.

One clear example is expanding the comprehension and conversation on climate science to include **climate justice** and look at conceptual and practical ways to approach it in classroom settings, while also considering co-creation opportunities between teachers and students.

As teachers there is often more to do than we may feel there is time available to do it. In my years in the classroom, when I approached lesson planning I was always thinking “what’s going to be the big idea here? What do I hope sticks? Why does this matter to my students?”

As I dug deeper into environmental and science education work, those questions also connected to “How does this connect to climate change?”

As a high school student many years ago, my natural interest in science led me down an interest in understanding what we were then calling global warming. In college I became fascinated with environmental justice case studies, particularly in California, asking myself the question “How does this happen? And why are communities with people that look like me seem to be the most affected?”

Early in my career, I did not know that all of this would eventually connect together. First, as I was going through my teaching credential coursework, I focused my practice on social studies and looked for natural ways to apply science and environmental education. Years after that, while receiving my Masters in Natural Resources and Environmental Studies, I was really intrigued with the connection and application of education in climate change, particularly the understanding and communication of climate science. When I returned to teaching high school again after graduate school, I naturally looked for that interconnection, especially as I saw my students full of potential and able to engage with such issues.

I see that interconnection reflected today in the “face” of climate change activism, led by youth, and it makes me reflect how, in our responsibilities as teachers, we have the opportunity to prepare them for this real-life application of action and education that we so often profess in our classrooms. I believe it is our duty as educators to prepare our students to be equipped with the science and critical thinking skills that will help them

tackle the inequitable problems found in their local and global communities. This can be done within a framing of climate science and climate justice.

This is also not something limited to specific grades. The Next Generation Science Standards point to how we can introduce and build on conceptual understanding from the early grades. Through increased engagement and teacher-student innovation we can expect more direct examples from the classroom. For example as this teacher was reflecting on their [2nd grader inspired a Climate Justice curriculum](#):

*"I learned two valuable things throughout our study of climate justice that have continued to shape my teaching. I learned how to take a student's interest or inspiration and follow the crooked path to make meaning together. I didn't have all the answers: Often I was learning as I researched and explored how to teach climate justice to students hungry to learn about it. Secondly, I learned just how capable young people are of grappling with what seem like complicated ideas. It was clear to them that our current dependence on fossil fuels is not only unsustainable, it is unjust. Educators have a responsibility to start teaching about climate justice at an early age and to teach our youth that they have an important voice that deserves to be heard. It isn't just about their future. They live here now. This is their world too, and the impacts of climate change are already being felt. In order to combat despair, students need the tools to think critically and creatively about how to respond to the most important issue of our lifetime."*

*- Hanes, Rachel. "How One 2nd-Grader's Story Inspired Climate Justice Curriculum." Rethinking Schools. Volume 34, No. 2. Winter 2019-20.*

## **"HERE'S WHAT"— A FOUNDATIONAL AWARENESS**

I will defer the expanded explanations of climate science to other authors in this publication, but it is always useful to start with some operational definitions.

In defining climate justice for the purposes of this article, it is important to acknowledge that the "climate" component necessitates a foundational understanding of the science of **climate change**—from the causal factors to the disruptive impacts and effects on natural and social systems.

This is important to address conceptual misunderstandings, much like in science in general, that can range from the confusing of weather and climate to not grasping how an average global temperature increase results in more intense and disruptive climatological events while also affecting other ecological cycles and events (drought, wildfires, rainfall patterns, phenology, etc.). Simply put, just because the overall average surface global temperature is increasing, it does not mean it is hotter everywhere in the same way--and that it is not just about heat or changes in energy, but how it affects what grows where and when, how animals migrate, how the ocean

regulates itself and what is able to survive or not, the very chemistry of water and air, and more. This has also arrived with a sense of urgency and new terms that stress the point: *Climate Chaos*, *Climate Crisis*, and *Climate Breakdown*.

Part of the challenge in teaching about climate change, and having the general public feeling invested in both understanding it and doing something about it, is this complexity and nuance—



why climate change is often called a “**wicked problem**” by scientists and policy makers.<sup>1</sup> Nonetheless, inaction is a choice of great consequence.

N.A.S.A defines **Global Warming** as “the long-term heating of Earth’s climate system observed since the pre-industrial period (between 1850 and 1900) due to human activities, primarily fossil fuel burning, which increases heat-trapping greenhouse gas levels in Earth’s atmosphere” measured as the average increase in Earth’s global surface temperature. **Climate change** is defined as “a long-term change in the average weather patterns that have come to define Earth’s local, regional and global climates.” Often the terms are used interchangeably--here the general definition of climate change will suffice, especially as we look at the disparate impacts of such *changes*.

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<sup>1</sup> It doesn’t mean the problem is not tackable or solvable, just that it is not a relatively “tame” soluble problem like a simple puzzle.

As for the “justice” component of climate justice, there is an academic discourse on defining *justice* as a theory and practice, with its corresponding applications by government entities and mainstream environmental organizations—noting there is not always a simple way to arrive at a simple definition. However, it is important to acknowledge the contributions and foundational frameworks of grassroots organizations and movements, since that has served as a major propellant for the work. As Scholsberg and Collins note in [“From environmental to climate justice: climate change and the discourse of environmental justice”](#), the principles for climate justice are “clear and consistent” with a focus on “local impacts and experience, inequitable vulnerabilities, the importance of community voice, and demands for community sovereignty and functioning.”

Thus this discourse over what climate justice is, tends to center on the “human element” in terms of the “disparate impact,” the harmful unequal effects that result from a more chaotic and disrupted climate. This is not to discount the impact of climate change on all living things, but it does help to understand how “caring about the polar bears” is not sufficient in some cases and how focusing solely on cases such as that can be counterproductive if the impacts on marginalized human communities is ignored.<sup>2</sup>

Climate justice is rooted in the work of **environmental justice**, but it is not wholly defined by it, much the same as climate science exists in relation to environmental science. Climate justice can be seen as a focus and specialization within environmental justice, while still encompassing and affecting most if not all aspects as does climate change to all our ecological and human systems. While we were certainly at the beginnings of [gathering data for climate change in the 1970s into the 1980s](#), the prioritization of environmental justice, also in [its founding in the 1970s and 1980s](#), was more grounded in clean air, land, water, and the protest of pollution and toxic sitting. That prioritization continues for many communities to this day as they are still not afforded those basic essentials. Yet, just as climate change impacts all, there is a need to approach it with a social justice lens, hence a framing of climate justice.

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<sup>2</sup> *This has become a narrative example, as many conservation and environmental organizations made the polar bear an iconic species in danger to rally behind. While important, I would often hear from many activists something along the lines of “and what about us people of color?”—Even former EPA Administrator Gina McCarthy acknowledged this at a Congressional Black Foundation conference stating ““Climate change is not about polar bears, which I think are cute. It’s about people. It’s about water, wastewater, and the infrastructure that is under our water. It’s about the sewers that are backing up and overflowing all at the same time. It’s about our drinking water supplies.”*

In addition, climate justice does not solely look at and rely on a legal interpretation and application of justice (i.e going to court). Though the current legal system is a pathway to address concerns and grievances, often it is because there is a lack of ability and willingness to acknowledge or address such concerns and grievances (*procedural and distributive inequities*) through current legal applications or working agreements that justice-oriented movements incorporate other approaches.



With this, environmental justice can provide a grounding and examples for what climate justice can include. Furthermore, the environmental justice movement was and is not simply about protests, pollution, legal challenges, and calls for action on policy change. It has also included research and other systematic approaches of data gathering, interpretation, and dissemination. It has included science.<sup>3</sup> From the early days of “[Bucket Brigades](#)” to more recent [Citizen Science](#)<sup>4</sup> collaborations with federal agencies, environmental justice has produced and used research as a tool and process to make the case in how certain socioeconomic and ethnic groups tend to be “hit first and hit worst” by disparate environmental impacts. Since the 1980s, a body of research has tested and validated claims of environmental injustice, from inequitable access to green space to the inequitable siting of pollution producing facilities. This has led to the U.S Environmental Protection Agency (EPA)

creating a definition of environmental justice that is often applied by other governmental entities.

The EPA defines environmental justice as “The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies” with goals and benchmarks set as “achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.”<sup>5</sup>

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<sup>3</sup> I’m referring here to both the general definition of “science” as “knowledge” and “knowing” as well as the discipline reliant on the Scientific Method and associated systematic approaches.

<sup>4</sup> One note on the term “citizen science” is how some programs and projects are moving to the use of “community science” over concerns that the use of “citizen” can be concerning and exclusive to some communities.

<sup>5</sup> You can see an example [here](#): “Environmental Justice Related Terms As Defined Across the PSC Agencies”



No such government-provided definition exists for climate justice, as it is a relatively new term, yet it is easy to see how an environmental justice definition clearly applies. Nonetheless, community based organizations, non-governmental organizations, scientists, and scholars do use working definitions that include “making systemic changes that are required to address unequal burdens to our communities and realign our economy with our natural systems...to create solutions to our climate and energy problems that ensure the right of all people to live, learn, work, play and pray in safe, healthy and clean environments.”<sup>6</sup> Scholar Margot A. Hulbert, in “[Evaluating climate justice – attitudes and opinions of individual stakeholders in the United Nations Framework Climate Change Convention Conference of the Parties](#)” derives a definition of climate justice that includes “legal justice, distributive justice, participatory justice, and ethical practice.”



The Mary Robinson Foundation and World Resources Institute in their publication “[Climate Justice: Equity and Justice Informing a New Climate Agreement](#)” succinctly states, “Climate change is an issue of justice” undermining the human rights of those who least contributed to the problem.

The [United Nations \(U.N\)](#), as a convener (Conference of the Parties—COP) and platform for collaboration on climate change (Intergovernmental Panel on Climate Change—IPCC), uses the term climate justice in several of its publications. For example, in its

documentation of its [Sustainable Development Goals](#), it notes how “the impacts of climate change will not be borne equally or fairly, between rich and poor, women and men, and older and younger generations” and it cites climate justice as “looking at the climate crisis through a human rights lens and on the belief that by working together we can create a better future for present and future generations.”

Nonetheless, as noted before in terms of how justice is applied, activists, community leaders, and scientists do not always see the U.N as the perfect vehicle for this work. In fact, the first Climate Justice Summit was

<sup>6</sup> This is the [definition](#) used by Alternatives for Community & Environment.

announced in 2000 by a network of grassroots as a counterpoint to the official UN climate summit (COP6) to stress the point that climate change was also a human rights issue. This was followed in 2002 by The Bali Principles of Climate Justice organized by a coalition of environmental justice organizations. Such work helped expand the conversation on climate change and “normalize” climate justice as a concept in recent international conferences and policy circles.

Still, collaboration and coordination continues, with climate justice recognized as a valid and needed perspective and framework for engaging in the comprehension and impacts of climate change.

### “SO WHAT”—A NECESSITATED APPROACH

The [Next Generation Science Standards](#) (adopted by California in 2013) direct and support educators in teaching climate science, the scientific basis of climate change. In California they are further strengthened by [California’s Environmental Principles and Concepts](#) (EP&Cs).<sup>7</sup> Yet, as with science education in general, and climate science specifically, while we may have learning objectives and goals, these may not be as meaningful and relevant to the learners as they can be. Education can and should be a powerful tool in making a difference in our students’ lives, and the best education is one in which students find meaningful, applicable, and relatable value.

This is where teaching climate justice adds such value, pushing the question of, “Why teach climate justice?”, a little deeper beyond just its acceptability as a term in the environmental community and validity in climate change policy.

Our students live in and experience socioeconomic and environmental inequities. Sometimes they may not yet have the language or comprehension framework for these, but they still have a keen awareness of what is happening around them, and ultimately we want to prepare them to be change agents and critical thinkers that can tackle and solve societal problems as the leaders of today and tomorrow.

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<sup>7</sup> These are required by law and are to be incorporated in subsequent state textbook adoptions. It began in 2016 with the California History-Social Science and the California Science framework.

<sup>8</sup> “Black and Brown” is a common shorthand to focus on primarily Latinx and African American students, who are often the subject of much educational inequity, as well as other students of color.

This is especially important on the impact it has on Black and Brown<sup>8</sup> students.

*“As a society, we have historically failed to provide meaningful, challenging, and engaging science education for students from historically underserved communities. For the most part, students from these communities experience science instruction as disconnected from their experiences in life, their questions about the world, and the concerns of their communities. Not surprisingly, they disengage from science in large numbers.”*

- Schwarz, C.V., Passmore, C., & Reiser, B.J., (2017).

If we are not attuned to this, we view students, especially those from impacted and marginalized identities and communities, with a deficit-minded framework and see them as problem-makers rather than problem-solvers.<sup>9</sup> It also sets too many on a path that propels them into the [School-to-Prison Pipeline](#). Research shows how [“misbehavior in school can pay off in school for White but not Black students”](#) as Black students are [three times more likely to be suspended or expelled than their White peers](#). Related, [“minority students”](#) are [less likely to be identified as gifted](#), particularly by White teachers. Rather than viewing the potential, cultural, and cognitive assets that all students bring into the classroom, we may dangerously perpetuate societal inequities in our educational spaces, or as education professor Dr. Bettina Love says, [“How Schools Are ‘Spirit Murdering’ Black and Brown Students.”](#) When we talk about questions and matters of educational justice, these are examples of that framing and conversations in an educational context.

Related to this is the simple important reminder of the student as a learner and the importance of how we support their agency in this endeavor. By connecting the learning experience of the school context with that of the learning experience and reality of their lived experience, we support agency as well as motivation, a critical element in students who are most marginalized and traditionally “pushed out”<sup>10</sup> of the educational system. As [“How People Learn II”](#) notes on motivation, “Motivation to learn is influenced by the multiple goals that individuals construct for themselves as a result of their life and school experiences and the sociocultural context in which learning takes place. Motivation to learn is fostered for learners of all ages when they perceive the school or learning environment is a place where they ‘belong’ and when the environment promotes their sense of agency and purpose.”<sup>11</sup>

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<sup>9</sup> There is a fantastic example of this in Chapter 3, “Toward More Equitable Learning in Science” of the NSTA publication [“Helping Students Make Sense of the World Using Next Generation Science and Engineering Practices.”](#)

<sup>10</sup> This is a different way to address students labeled as “drop outs”—to put the responsibility on the educational system rather than on individual choice.

<sup>11</sup> The whole book is a valuable resource for supporting learning environments.

In addition, impacted communities such as communities of color, and racial and ethnic minorities identified by the United States Government as statistically distinct groups, have an understanding of the importance of environmental awareness and support needed. Surveys and studies over the last decade have continued to demonstrate how [communities of color support environmental awareness and action](#)—an important point that is often missed as we misattribute low socioeconomic status and ethnicity with low care and concern for environmental awareness and action.



This work is also grounded in the data of climate science. In its Fourth National Climate Assessment Report, the Intergovernmental Panel on Climate Change reported how communities of color, indigenous communities, and low-income communities face disparate environmental impacts with increased vulnerability to climate change—hence the phrase, “hit first and worst.” This is not only true within the United States, but it is also a power and systematic disparity between the United States and “developing countries” (as well as other “developed economies”)<sup>12</sup>

At the same time, as we generally understand about climate science work, data in a purely quantitative approach cannot be the sole driver for conveying the importance of this work. As the phrase “data makes you credible, stories makes you memorable” notes, the impact and importance of the affective filter and socioemotional learning modalities, the **narrative** of the issue, are key in our educational approaches, especially with a topic of such importance. This is part of why a robust educational experience is important and critical. The Mary Robinson Foundation and World Resources Institute state, “New narratives will be needed to engage people and get them to care about climate change so that they can demand more action from their political leaders. Powerful climate justice narratives, complementing scientific and economic arguments, can create a wide vocabulary of arguments in support of urgent, ambitious, and equitable climate action.”<sup>13</sup>

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<sup>12</sup> The United Nations uses the term “developing countries” as one of its three broad country classifications. [Link](#)

<sup>13</sup> There seem to be various sources attributed to this quote.

Still, as we make the connection from climate science and climate change to climate justice, the broader question may come as to “how to teach social justice” or embed it into the current curriculum.

To start, **social justice** as a concept, curriculum, and pedagogical approach is not new to California schools. The California Teachers Association (CTA) provides an [Advocating For All Students: A Social Justice Toolkit](#) and social justice has also been [increasingly integrated into History and Language Arts through the Common Core](#).

Although there are currently no formally state-adopted social justice standards, there are starting points, with the most currently cited being the [Teaching Tolerance Social Justice Standards: A Framework for Anti-Bias Education](#).

Regardless, there are still many opportunities, along with needs, for teaching climate justice aligned with current standards.

## **“NOW WHAT”—CLASSROOM OPPORTUNITIES**

While the California Department of Education provides [several resources](#) on climate change, none listed have a direct reference to social justice, environmental or climate justice, or associated frameworks. However this still provides the opportunity to include and integrate social justice as curriculum content, an approach, and an orientation in teaching about climate change, while acknowledging that the landscape of California education is one where not all teachers in all classrooms have or can take advantage of the same flexibility, opportunity, and adaptability for creative curriculum design.

With this and the aforementioned rationale in mind, this section provides a few starting approaches for classroom applicability.

One simple way would be to apply “ready to use” educator resources, such as the [Climate Justice Teaching Activities](#) from the Zinn Education Project’s [Teach Climate Justice Campaign](#). These can be used as stand-alone lessons, integrated into current curriculum, or be used to adapt to existing curriculum. The reasoning and intention behind the resources is laid out in [“Our House is On Fire: Time to Teach Climate Justice”](#) and [“Fighting to Teach Climate Justice.”](#)

Other free classroom-ready materials include [Climate Justice: Lessons for Transformation](#), a project of the Canadian Centre for Policy Alternatives and the British Columbia Teachers' Federation. Although designed by Canadian educators one benefit of such resources is that they are designed by educators with classroom applicability.

The California Federation of Teachers also provides a climate justice toolkit. Although it does not include ready to use lessons, it does include resources that bolster the rationale for teaching climate justice, and literature that includes examples, such as "[Climate Change in the Classroom: A Natural Part of English Language Arts](#)" and "[Teaching Climate Change: What Educators Should Know and Can Do.](#)"



It is understandable if some educators approach these resources with some hesitation, either for concern of district or school site support, or a misunderstanding based on political preferences. A key reminder that is often still useful as a filter or lens to approach this is the phrase "teaching how to think, not what to think" and the application of critical thinking skills that is no different in how we approach other subjects. This also includes an understanding that we still make instructional choices<sup>14</sup> and districts still make subject-matter decisions. Thus, we may sometimes trap ourselves in a perceived objectivity that is not fully there, and it is still important

to remember that a purpose of education is to support informed decision-making and knowledge-building, which is different from advocacy. In addition, this compliments comprehension of the nature of science and how learners negotiate the construction of scientific knowledge—understanding "the scientific enterprise."<sup>15</sup>

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<sup>15</sup> A favorite expression I acquired in working with the BEETLES team from the Lawrence Hall of Science is "it's an instructional choice" when faced with making a decision in lesson plan or curriculum context.

<sup>15</sup> See the NGSS Appendix H.

Still, another option is to start with moderate modifications to existing curriculum or integrating “recipe book” lesson plans as is done with projects such as [Project W.I.L.D.](#), [Project Learning Tree](#), and [Project W.E.T.](#) For example, Project W.I.L.D. provides guidance on “[Effective Climate Change Education](#)” and Project Learning Tree has specific resources that connect “[Climate Change and Forests](#)”, with example student pages such as “[How much carbon is in a tree?](#)” and partner resources like “[How much hotter is your hometown than when you were born?](#)”

In California we also have the benefit of some environmental curriculum anchors for lesson planning and development. For updated framework and recommendations, the Environmental and Climate Change Literacy Project and Summit Steering Committee (ECCLPS) published the [Achieving Climate Stability and Environment Sustainability](#) summary report. Of particular importance is how the report includes and stresses “equity and cultural relevance”<sup>16</sup> as well as “fostering connections to social justice” stressing the point that “environmental and climate change literacy is intimately connected to social justice because human life is interdependent with nature, and environmental changes do not affect everyone equally.”

The [Blueprint for Environmental Literacy](#) and the [California Environmental Literacy Initiative](#) can be of use as well. While not specifically focused on climate justice, these frameworks are useful connection and weaving tools in the bridging of the NGSS and justice-oriented and themed curriculum-- and they are part of the foundation that supports an environmentally literate student population of the state, part of which we can argue includes climate justice.

In terms of other interconnecting<sup>17</sup> resources, there is the [U.S Global Change Research Program’s Climate Health Assessment](#) which focuses on the health impacts of climate change and includes a segment on “Vulnerable Groups” and “Populations of Concern” that include “low income, some communities of color, immigrant groups, and Indigenous peoples” noting how consideration should be given to how such populations “experience disproportionate, multiple, and complex risks to their health and well-being in response to climate change.”

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<sup>16</sup> For example, it’s notable how “a 21st Century environmental sustainability education” must be “rooted in the realities of historic and systemic environmental injustices that must be understood and addressed to make progress toward equity” and “focused on teacher and student inquiry, agency, leadership, and civic activism.”

<sup>17</sup> I differentiate between the use of the term interconnected and intersectional, the latter of which has a specific and important operational definition in social justice work.

In addition, other work is underway, such as the [University of California Naturalist Stewards](#) Initiative with goals such as “To increase access to up-to-date and locally relevant climate science to improve climate literacy through a UC certification course for the public, establish a community of practice focused on stewardship, communication, and community solutions to advance resiliency, and build statewide support for and capacity to effectively advance state and local climate goals.”

Lastly, where supported, an Inquiry-Based and Service Learning approach, along with co-created opportunities present a powerful, engaging, and value-added experience for students to connect “real life application” with classroom supported analysis.

This can include multimedia projects, civics applications, client-based projects, and other opportunities where, guided by learning objectives, students can produce films, podcasts, attend civic meetings, create their own teaching modules, or even design their own communications campaigns. These do require more programmatic and scheduling support, but in the current age of digital creation, student-led marches, and social media platforms, it serves as another way to amplify learning.

## CLOSING NOTES

*“Similar to NGSS, which represents a shift in teaching and learning, not just a new curriculum, acknowledging inequities requires culturally-competent instruction that makes science learning accessible and meaningful to students’ lives and futures. This is especially true in states like California, where Black and Brown students are not represented in the teaching force.”*

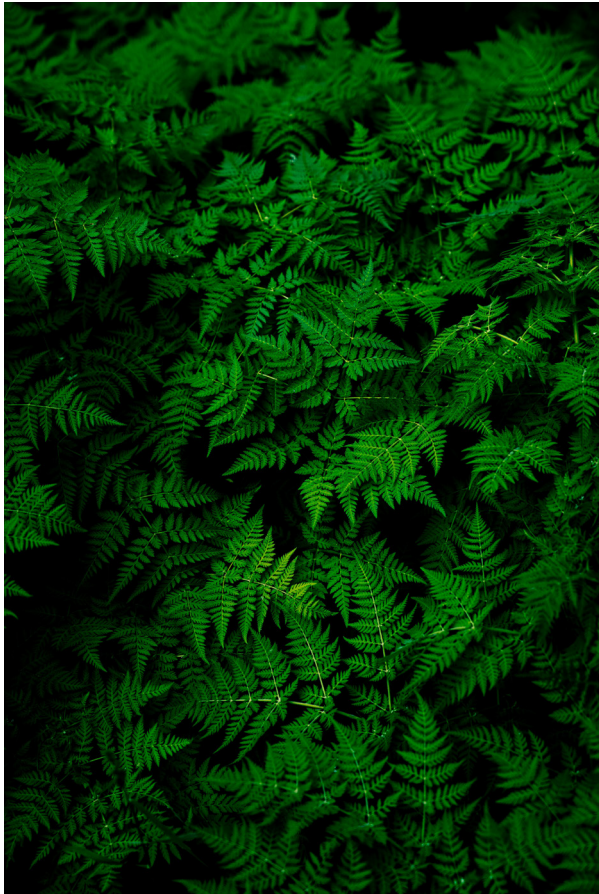
*– Claudio Vargas, Educational Consultant, Sci-Lingual Education*

Teachers already have enough on their respective plates. There is always a challenge in how and what to prioritize in the classroom. A commitment to include climate justice as part of a science education is not meant to be “something more to add.”

Much like equity, inclusion, and justice work in other areas of society, when it is perceived and applied as “an addition” it is more likely to not succeed or



be sustained. The work is in institutionalizing it through *practice*, to have it be incorporated into our pedagogical skills. Much like teaching any subject matter, expertise, comfort, and facility comes through sustained practice, reflection, and adaptation as with any learning cycle. What we know does not work is to not do anything at all.



Climate justice at minimum is a shift and expansion in perspective, not necessarily a new set of content. For any not sure where to begin, it can start with ensuring that as educators we inform ourselves and start with simple questions that begin to acknowledge inequities that some of our students and their communities face, and how education can continue to be a tool for bettering society. It can begin by acknowledging that science does not exist in a vacuum, and its creation and application is not equitably accessed—and the consequences of this can have different impacts on different communities.

Climate change is still a “wicked problem” that requires as many of us to care and be invested in solutions. While climate science is needed to understand and address climate change, climate justice is needed to know that the future we envision should not continue to perpetuate inequities as we continue to aspire to do, and be, better.

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