



Position Statement on Climate Change Education

Council of State Science Supervisors

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The Council of State Science Supervisors (CSSS) provides leadership in advancing excellence in P-12 science education at the local, state, and national levels.¹ CSSS is committed to ensuring that *all* learners are provided every opportunity² to make sense of the complex nature of climate change and learn the skills to develop and deploy solutions. To this end, CSSS supports collaborative design practices to build resources and capacity for equitable teaching of climate science across the United States and its Territories.^{3,4,5}

Climate change has been part of Earth's history throughout time; however, the increase of greenhouse gas emissions, resulting from human activity, is a major cause of climate change over the last 150 years. Greenhouse gas emissions are now at their highest levels in recorded history.⁶ People, communities, organizations, and governments, at all scales, are innovating scientific, economic, and social solutions to address this climate crisis and science education is an integral part of these solutions.^{7,8} CSSS acknowledges the overwhelming consensus of peer-reviewed scientific evidence that global climate change is significantly affecting societies across the world, with a disproportionate impact on vulnerable and socially marginalized populations, specifically Indigenous, Black, and People of Color and those living in poverty.^{9,10}

Reports on science education, including the *Framework for K-12 Science Education*,¹¹ *Climate Literacy: The Essential Principles of Climate Science*,¹² *Science and Engineering for Grades 6-12: Investigation and Design at the Center*,¹³ and the *Climate Change Education in Formal Settings, K-14*,¹⁴ clearly illustrate the need for learning about how human activity impacts the Earth and its systems at *all* ages. These documents recommend that students of all ages engage in science learning, focusing on broader socio-scientific goals that foster learning related to sustainability. These learning goals are appropriate for addressing current needs to foster civic and career-relevant learning in our changing climate. They also support our ability to adapt as individuals and communities in the future as well as fulfill our ethical commitments as part of a larger community. Research shows that we learn both as rational beings and as emotional creatures at all ages.¹⁵ Climate change education (CCE) should be interdisciplinary, incorporate diverse perspectives, and occur across all learning contexts.^{16,17,18} It must be woven throughout all grade levels in ways that are age-appropriate, incorporate multi-dimensional science learning, and address socio-political-emotional aspects of climate mitigation and

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adaptation efforts.¹⁹ This approach acknowledges the interdependent and interdisciplinary nature of CCE.

Recommendations

As an organization composed of state science leaders and affiliated members, CSSS has the responsibility to sustain and foster dynamic learning communities that support equitable CCE as economic, social and environmental justice issues.²⁰ We acknowledge that this learning occurs in varied contexts and across scales (home, school, community, state, national, global, nature, organizations) where work on climate change mitigation and adaptation is occurring. We recognize that the impacts of climate change are not uniformly felt and that both expediency and justice require the comprehensive integration of diverse voices, viewpoints, and knowledge. To this end, CSSS, as an organization recommends each state and territory education agency (SEA) and the Department of Defense Education Activity (DoDEA):

- Develop actionable and coherent strategies, designed by collaborative and diverse teams of educators, scientists and other professionals, community members, youth, and others to support the implementation of climate change education at the local education agency (LEA) situated in the local context. Connecting to the local context of climate change and local actions will support sustainable implementation.^{21, 22}
- Plan and implement efforts that reflect the concerns, knowledge, and solutions to climate change of those most impacted. Accomplishing this requires the involvement of diverse participants, including research partners, in (a) policy and leadership; (b) academic standards; (c) curriculum, instruction, and assessment practices; (d) supporting and designing professional learning experiences for educators.
- Collaborate with LEAs and schools to engage youth in community-centered, justice-centered, and integrated learning experiences that foster youth agency and civic action related to climate change as a facet of environmental justice.^{23,24} This approach requires collaborations across schools, families, and community organizations.

As leaders in science education, we have a duty to provide students with meaningful climate change learning opportunities grounded in science as a process. High quality science education is a crucial mitigating factor in addressing the challenges of and creating solutions for our warming world. Humans of all ages are making sense of the impacts of climate change on their lives and the world around them, this is particularly salient with young people who have a critical role in this work.²⁵ Science-based climate change learning will support decision making about current and future

economic and social actions in our communities. To this end, it is imperative, and our responsibility, that we provide every opportunity for youth to develop such knowledge.

Endnotes

1. CSSS Vision, Mission, & Goals <http://cosss.org/MVG>
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3. CSSS Position Statement on Equity and Access to Science Education http://cosss.org/resources/Documents/CSSS_Position_Statement_Equity_and_Access.pdf
4. Collaborative design is described here <http://learndbir.org/>.
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