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Environmental Education in Action

Learning from Case Studies Around the World

Geep is a partnership of the U.S. Environmental Protection Agency, the Environmental Protection Administration of Taiwan, and the North American Association for Environmental Education.



Saving our planet, lifting people out of poverty, advancing economic growth... these are one and the same fight. We must connect the dots between climate change, water scarcity, energy shortages, global health, food security, and women's empowerment. Solutions to one problem must be solutions for all.

— Ban Ki-moon



Introduction



The Power of Case Studies

Authored by

Judy Braus
Executive Director, NAAEE

Welcome to *Environmental Education in Action*—a collection of case studies and educational approaches that demonstrates the powerful role environmental education, or EE, can play in creating a global citizenry that cares about people and the planet. Showcasing a variety of examples from around the world, this book highlights the complexity and challenges inherent in EE, and presents some of the innovative approaches educators are using to advance the goals of environmental literacy and civic engagement in their communities. You'll discover a camp program in Canada in which indigenous students explore their perspectives on climate change, a first-of-its-kind traveling climate-education strategy in India, a program in Australia focused on protecting biodiversity, and much more.

Each chapter was written by one or more experts in the field. The introductory chapters focus on case studies as a valuable learning tool, and later chapters target specific topics such as positive youth development, climate change, early childhood education, ocean literacy, and other subjects. Links to one or more case studies are included in each chapter, followed by discussion questions, activities, and additional resources. An appendix at the end of the book presents a matrix of overlapping themes and a list of connections to the Sustainable Development Goals (see "EE and the Goals for Sustainability" below).

Why case studies? We believe that exploring and discussing these real-life scenarios can benefit not only people already working in EE, but also future educators. They're a natural fit for professional development workshops and online seminars. And they can add authenticity to university courses with engaging approaches to topics as wide-ranging as economics, public health, and environmental justice. Many of the case studies can also be adapted for use with high school students. Whatever your own focus, we hope this collection sparks new ideas for how you can bring the issues of our time to life in ways that resonate, engage, and motivate.

An Overview of EE

What Is Environmental Education?

EE is a broad field with the overall organizing principle of creating a more just and sustainable future using the power of education. More specifically, EE is “a learning process that increases people’s knowledge and awareness about the environment and its associated challenges; develops the necessary skills and expertise to address the challenges; and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action.”¹ The modern field of EE is built on more than five decades of research and practice, as well as on longstanding core values of stewardship, justice, innovation, and other ideals passed down through the generations in cultures around the world.

Several key underpinnings characterize EE. (See Box #1.) For example, EE includes learners of all ages, from preschoolers to senior citizens. It recognizes the importance of experiential and interdisciplinary education, and it focuses on problem solving and decision-making skills. Civic engagement is also a fundamental goal of EE, as are positive societal outcomes: EE explores what it means for people and societies to be stewards of both the environment and each other. A sustainable future, under the inclusive umbrella of EE, is one that embraces equity, diversity, and social justice.



“To create a more sustainable society, we need to determine how to meet the needs of the present without compromising our ability to meet the needs of the future.”

—Our Common Future, 1987

¹ This excerpt is from the Tbilisi Declaration, which outlined a framework, principles and guidelines for environmental education at all levels—local, national, regional and international—and for all age groups both inside and outside the formal school system. It was the world’s first Intergovernmental Conference on Environmental Education, held 1977 in Tbilisi, Georgia, and organized by UNESCO in partnership with UNEP.



Box #1. Key Underpinnings²

Human Well-Being: Human well-being is inextricably bound with environmental quality. Humans are a part of the natural order. Humans, and the systems they create—societies, political systems, economies, religions, cultures, technologies—impact the environment and are also impacted by the environment. Since humans are a part of nature rather than outside it, they are challenged to recognize the ramifications of their interdependence with Earth systems.

Importance of Where One Lives: Beginning close to home, EE helps learners connect with, explore, and understand their immediate surroundings. It also helps learners appreciate the nature around them, wherever they live. The sensitivity, knowledge, and skills needed for this local connection to both the natural and built environments provide a base for moving into larger systems, broader issues, and an expanding understanding of connections and consequences.

Integration and Infusion: Disciplines from the natural sciences, social sciences, and the humanities are interconnected through the environment and environmental issues. Environmental education offers opportunities to integrate interdisciplinary learning, fostering a deeper understanding of concepts and skills. EE works best when infused across the curriculum rather than treated as a separate or isolated experience.

Justice, Equity, Diversity, and Inclusion: EE instruction is welcoming and respectful to all learners and embraces the principles of fairness and justice. EE is designed to employ and engage people with different backgrounds, experiences, abilities, and perspectives through culturally relevant and responsive instruction. EE actively works to create equitable learning opportunities and promotes the dignity and worth of people of all races, ethnicities, religions, sexual orientations, gender identities, abilities, incomes, language groups, marital statuses, ages, geographic locations, and philosophies.

Lifelong Learning: EE emphasizes critical and creative thinking, decision making, communication, and collaborative learning. Development and ongoing use of a broad range of skills and practices are essential for active and meaningful learning, both in school and over a lifetime.

Roots in the Real World: Learners develop knowledge and skills through direct experience with their community, the environment, current environmental issues, and society. Investigation, analysis, and problem solving are essential activities and are most effective when relevant to learners' lives and rooted in their experiences.

Sustainable Future: Supporting the United Nations Sustainable Development Goals (SDGs), learning reflects on the past, examines the present, and is oriented to the future. Learning focuses on environmental, social, and economic responsibility as drivers of individual, collective, and institutional choices.

Systems and Systems Thinking: Systems thinking helps us make sense of a large and complex world. A system is made up of parts. Each part can be understood separately. The whole, however, is understood only by examining the relationships and interactions among the parts. Earth is a complex system of interacting physical, chemical, and biological processes. Organizations, communities of animals and plants, living cells, and families can all be understood as systems. And systems can be nested within other systems.

² "Key Underpinnings" are adapted from the National Project for Excellence in Environmental Education, NAAEE, 2022.

Who Are Environmental Educators?

Not surprisingly, many environmental educators work in nature centers, parks, museums, zoos, and other institutions, connecting people with nature and helping to build stewardship values that can last a lifetime. Others work with teachers, administrators, and school boards to integrate EE into curricula, conduct teacher training, and help schools green their buildings and schoolyards. And some as university professors, training the next generation of environmental educators and professionals. You'll also find environmental educators working in government at all levels, including ministries of education and the environment.

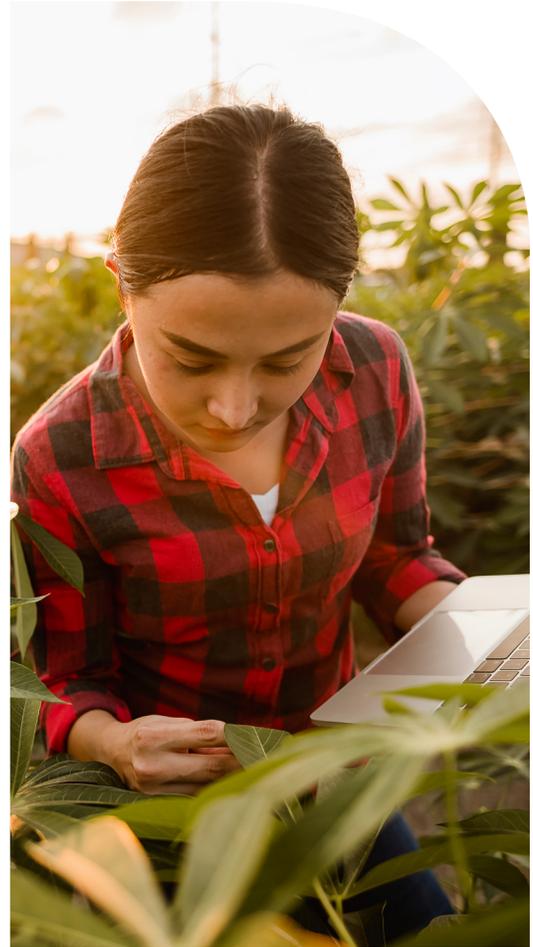
But environmental educators aren't limited to educational or public sector settings. Some work with businesses, helping managers and employees establish sustainable workplaces. Others work with health professionals, doctors, and nurses to increase understanding about the link between public health and the environment. Many work alongside conservation professionals, helping communities address environmental problems. And others work with journalists, decision makers, and others to advocate for science education. Environmental educators have a place in all sectors of society!

For more about the SDGs, please see:
www.globalgoals.org

What Does the Research Show?

From documented research, we know that EE results in positive change. For example, a [research review](#) conducted by Stanford University revealed that EE can lead to more environmental knowledge, improved academic performance and critical thinking skills, increased confidence and autonomy, and development of leadership skills, among other positive outcomes. A number of studies also showed an increase in positive environmental behaviors and civic engagement, including a [Brookings Institution study](#),³ which found that if climate change education was integrated throughout curricula, we could see a worldwide drop in carbon emissions.

Case studies can add to our empirical research, enable us to learn about effective EE programs, and inspire and motivate us to advance our own programs and practice.



³ The Brookings Institution is a nonprofit public policy organization based in Washington, DC. Their mission is to conduct in-depth research that leads to new ideas for solving problems facing society at the local, national and global level.

EE and Environmental Injustice

EE plays an important role in raising awareness of environmental injustice and in helping to ensure that all communities have access to clean air and water, safe and nourishing food, and other basics of daily life. Environmental injustice—the disproportionate impact of environmental degradation on vulnerable communities—is a devastating reality for millions of people around the world. From neighborhoods located next to polluting industries to frontline communities that experience the first and worst impacts of climate change, these communities don't have the money, infrastructure, or other resources to address the problems they're subjected to. Bad air quality, unsafe drinking water, lead contamination, unmitigated storm damage, and other hazards are a fact of life in these communities, whose residents are disproportionately people of color, rural poor, and Indigenous groups.

EE can help empower the people living in these communities to stand up for positive change. From engaging teens from underserved communities through boatbuilding, environmental science, and sailing to exploring air quality inequities (see [“Rocking the Boat” case study](#)), EE is being used in many different contexts to advance environmental justice, creating a more just and sustainable future.

To find out more, check out these resources:

- [Environmental Justice: Evaluating Zip Codes And Pollution Burdens \(Science Friday\)](#)
- [Reading and resources on climate justice \(Climate Action\)](#)
- [United Nations Development Programme \(UNDP\) Technical Paper: Environmental Justice--Securing our right to a clean, healthy and sustainable environment.](#)
- [Environmental Justice Foundation's Film Library](#)
- [The Intersectional Environmentalist: How to Dismantle Systems of Oppression to protect People + Planet by Leah Thomas](#)

Between 2010 and 2020, droughts, floods, and storms killed 15 times as many people in highly vulnerable countries, particularly in Africa which is responsible for less than 3 percent of global emissions than in the wealthiest countries.

[IPCC 2022 Report](#)

“We should try to leave the world a better place than when we entered it. As individuals, we can make a difference, whether it is to probe the secrets of Nature, to clean up the environment and work for peace and social justice, or to nurture the inquisitive, vibrant spirit of the young by being a mentor and a guide.”

—Dr. Michio Kaku, physicist



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