

From Research to Practice: Connecting Children to Nature

Executive Summary of Findings from a Survey of Environmental Educators

In our efforts to translate research on how education can help improve human health and well-being, enhance social-emotional learning, and facilitate the development of an environmental ethic into practical applications for practitioners, NAAEE has partnered with the Children and Nature Network, researchers at the University of Minnesota, and the University of Illinois Urbana-Champaign to launch the Science of Nature-Based Learning Collaborative Research Network. Funded by the National Science Foundation, the Network is a new collaboration with the goal of accelerating the pace of research to understand if, and how, nature exposure influences children's learning, cognitive development, and academic performance.

Specifically, the Network seeks to synthesize the existing research and conduct exploratory studies on what approaches to nature-based learning work, for whom, how, and under what circumstances. To begin this process, NAAEE worked with C&NN to distribute a survey among its networks to help us understand how environmental educators are connecting children to nature, and how new research in the field can support what you do. A group of NAAEE researchers created, pilot tested, and distributed an online survey with both open-ended and multiple choice questions through naaee.org, eePRO (NAAEE's online platform for EE professional development), mailings to NAAEE's members and subscribers, and social media. The survey remained open for 3 weeks and two reminder mailings were sent during that timeframe. A total of 167 respondents completed the survey.

Key Findings from the Survey:

- Nearly 9 out of 10 respondents described the work they do as “connecting children to nature” in some way or ways.
- About 2 out of 3 respondents indicated that the goal or outcome of “connecting children to nature” is a high or very high priority for their institutions.
- Respondents offered the following when asked “Which age groups do you/does your institution serve with programs designed to connect children to nature?”(Note: multiple categories could be selected.):

83% - Elementary School

76% - Middle School

68% - High School

54% - Preschool

25% - Infant and Toddler

- Respondents offered the following in response to the question “How do you learn about new research in environmental education?” (Note: multiple categories could be selected.):

80% - NAAEE

76% - Workshops/Trainings

67% - Education-focused Media

56% - Research Journals

55% - Webinars

53% - Social Media

43% - General News Media

- In describing how they/their institutions connected children to nature, respondents’ survey responses tended to be distributed along the following four experiential continua:

1. Location of Interaction – This ranged from programs sited primarily outdoors, i.e., “*We run an outdoor summer camp that conducts all of its activities outside.*” to those sited primarily indoors, but nevertheless related to the natural world, i.e., “*We introduce children to natural history specimens in our museum.*” About 3 out of 4 respondents characterized the locations of their interactions with children as being more outdoor-based than indoor-based.

2. Nature of Interaction – This ranged from direct programmatic connections with children, i.e., “*We work with children directly, with more than 90% of our education programs taking place with them outside in nature.*” to more indirect ones, in which respondents connected primarily with those who in turn connect with children in nature, i.e., “*We work with preservice teachers to help them develop the knowledge, skills, and inclination to connect children to nature.*” Slightly more than 2 out of 3 respondents characterized their institutions’ connections with children as being more direct than indirect.

3. Nature of Programming – This ranged from programming that was directly nature-focused, i.e., “*We take them [children] into the field; connect them with mentors that work with animals/nature; expose them to nature-related science; challenge them to consider real-world ecological issues and solve for them; teach them about animals and the ecosystems they live in; give them opportunities to do stewardship activities in nature.*” to programming that, while based in the natural world, tended to be less directly

nature-focused, i.e., *“We provide informal environmental learning opportunities through a variety of our outdoor recreation programs.”* About 4 out of 5 respondents to the survey characterized their programming as being more directly nature-focused.

4. Nature of Facilitated Learning Experiences – This ranged from primarily experiential, exploratory interactions with children, i.e., *“Providing children with structured and unstructured time in the outdoors to enjoy and explore the natural world around them.”* to much more knowledge and application-based interactions, i.e., *“I create hands-on, inquiry-based, problem-based scenarios where students work in teams to solve problems, identify the ecosystems, flora, and fauna, explore and gather data, and come to an understanding of the importance of nature preservation and their role in it.”* Survey responses were about equally distributed along this continuum.

- When characterizing their/their institutions’ goals in connecting children with nature, survey participants’ responses could be described in one of the following ways:

40% - a dual focus on children and the environment, i.e., *“Developing children’s connection to enjoyment of, and understanding of nature, as a means to both enrich their lives and improve the condition of the environment.”*

26% - a primary focus on children, i.e., *“Creating memorable experiences and finding a-ha moments for kids.”*

20% - a primary focus on the environment, i.e., *“Restoring our environment to a healthy state.”*

8% - a primary focus on organizational programs or causes, i.e., *“Develop a citizenry that understands and supports our organization and its mission.”*

6% - a tripartite focus on the environment, children, and organizational programs or causes, i.e., *“Learn to love it [the natural worl()] so they [children] will take care of it, while also taking care of their physical, emotional, and behavioral needs, on top of succeeding in all of their required academics within our program.”*

- Survey respondents’ feedback to the open-ended question “What kinds of information or research would help you develop, deliver, or refine programs to connect children to nature?” revealed the following:

Information:

- Respondents expressed interest in an information “clearinghouse” of some sort being made available to them, with a well-designed, easily searchable, web-based platform mentioned most frequently as the desired format for it. The types of

information respondents were interested in accessing through such a clearinghouse included:

- Videos
 - Webinars
 - Articles
 - Workshops
 - Conference Sessions
 - Advice from a variety of other practitioners
 - Activities/Lessons/Curriculum
 - Case Studies
 - Funding Opportunities
 - Research Summaries
 - Evaluation Results
 - Best Practices Summaries
 - Information about Organizations doing this sort of work
 - Key Issues
 - Relevant Legislation
- Respondents also expressed an interest in increased and expanded opportunities to connect and interact with others involved with connecting children to nature and to share their work with one another. Interest was expressed in both face-to-face and virtual opportunities.
- Respondents indicated that the following “how-to’s” would be particularly helpful to them in their current work relative to connecting children with nature:
- better reach underserved audiences and successfully address barriers to access of all sorts
 - successfully implement in public school settings
 - incorporate technology and social media
 - evaluate our own programs and document their success
 - tie-in appropriate academic standards, esp. NGSS and Common Core
 - overcome preconceived notions as to what nature-based education is/isn’t
 - offer nature-based education when a setting doesn’t offer a lot of nature to work with
 - increase odds for program longevity

Research:

- Without articulating the specific nature and scope of research that would be required, a number of survey respondents made it clear that they feel a need for research to provide clear and compelling “proof” of the value and impact of connecting children to nature with three principal audiences:

- Parents
- School Teachers
- School Administrators

As important attributes of its ability to provide such “proof”, respondents indicated their strong desire for research in this topic area that is judged by professionals in the field to use sound experimental methods and analysis techniques and to be appropriately and professionally vetted prior to publication. Respondents further stated their belief that longer-term, longitudinal case studies, particularly those that attempt to demonstrate the relationship between connecting children to nature and the development of attitudes about and behaviors towards the environment as adults , may “carry the most weight” with all the above audiences.

- Respondents shared a number of topics for either new or continuing research, all with a context of how connecting children to nature may influence them, that they felt would help them continue to develop, deliver, or refine their programs, including the following:

- Brain development at different ages
- Learning – any and all dimensions
- Physical health and overall quality of life
- Children’s/Adults Attitudes about the Environment
- Children’s/Adults Actions relative to the Environment
- Amount and levels of knowledge about nature
- Discipline in formal and informal settings
- Critical thinking skills
- Improved test scores
- Economic/Social impacts of connections to nature
- Dose and Duration of outdoor experiences
- Professional Development for teachers
- Best ways to reach most nature-removed/nature-averse children
- Most appropriate activities for different youth age groups
- Cognitive development of children
- Socio-emotional development of children

- Psychological development of children
- Levels of comfort in nature
- Levels of awareness about nature
- Levels of appreciation of nature
- Levels of understanding of nature
- Levels of stewardship of nature
- #'s of children involved and impacted
- Physical, social, and economic barriers to access
- Detrimental effects of a lack of nature
- Role of camps – both day and residential
- Impact of Citizen Science activities

Thank you to everyone who completed the survey. We will use this information to inform our work at NAAEE, including our efforts to support early childhood educators and organizations through the Natural Start Alliance, which is a network of people and organizations focusing on connecting early childhood education and environmental education; our eePRO discussion groups; our conferences; our eeWORKS! initiative designed to showcase the value and impact of environmental education; and all the other ways that connecting people to nature is embedded in the work of our organization and our partners and members. We will also share the results with our colleagues at the Children and Nature Network and with the University of Minnesota, as part of this NSF networking grant.

NAAEE has been working to connect people to nature for more than 45 years. We will continue to support efforts that encourage people of all ages to spend more time in nature and that provide new opportunities for outdoor play, meaningful learning, and transformative experiences that help build a more informed and committed citizenry.