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Guidelines for Excellence

Professional Development of Environmental Educators

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North American Association for Environmental Education

For more than four decades, the North American Association for Environmental Education (NAAEE) has been a leader in promoting excellence in environmental education throughout North America. With members in more than 30 countries and affiliations with more than 55 state, regional, and provincial environmental education organizations, NAAEE's influence stretches across North America and around the world. Our mission is to bring the brightest minds together to advance environmental literacy and civic engagement through the power of education.

NAAEE supports the field with a variety of programs and services, including:

Annual Conference and Research Symposium—NAAEE has convened an annual conference for environmental education professionals since 1972. The conference is the largest national gathering of environmental education professionals in North America and promotes innovation in the field, networking, new tools and resources, and dissemination of research and best practices.

Resources and eePRO—Through its website and eePRO, our online professional development hub, NAAEE provides its members and supporters with high-quality professional resources including books, resource guides, essays, peer-reviewed research, best practices, research reviews, job listings, grant opportunities, news across the field, and more.

Professional Development—NAAEE offers unique services in professional development and support. Through online networking and professional learning, training seminars, online learning modules, strategic convening of environmental education leaders, and support of certification programs, NAAEE promotes leadership development and builds the capacity of its members and affiliates.

Policy—NAAEE is a non-partisan organization that plays a leadership role in raising the profile of environmental education at an international level. NAAEE works with partners to advocate for environmental education with agencies, organizations, foundations, and others to increase funding and support for the field.

Inspiring Innovation—NAAEE is committed to bringing new voices, ideas, and innovation to the field and broadening the reach and impact of environmental education.

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Professional Development of Environmental Educators: Guidelines for Excellence is part of a continuing series of documents published by the North American Association for Environmental Education (NAAEE) as part of the National Project for Excellence in Environmental Education. The project is committed to synthesizing the best thinking about environmental education through an extensive process of review and discussion. Hundreds of individuals and organizations representing all aspects of environmental education reviewed working outlines and drafts. Reviewers include classroom teachers, educational administrators, environmental scientists, curriculum developers, and natural resource agency and education department staff members.

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Professional Development of Environmental Educators

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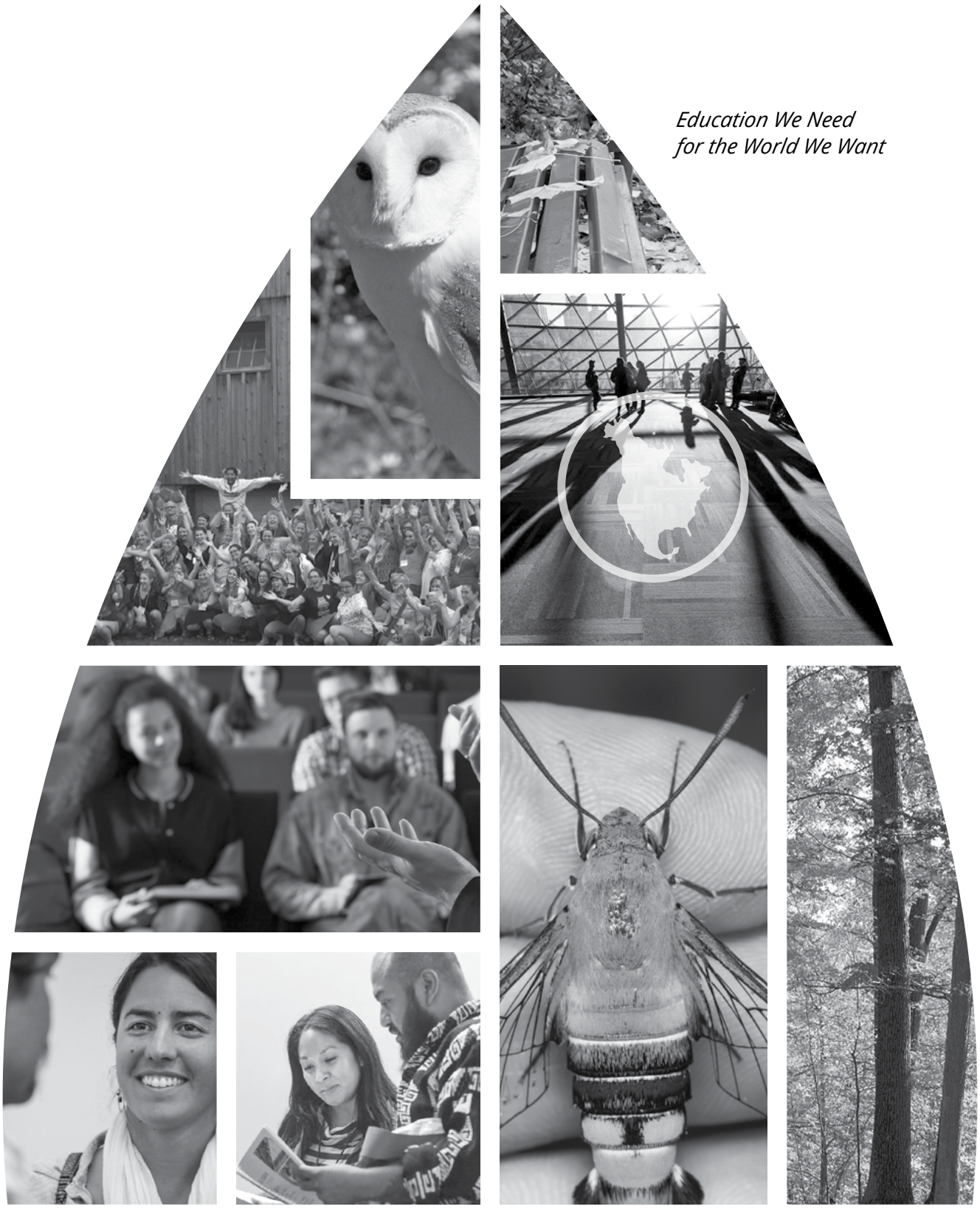
Education We Need
for the World We Want

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Guidelines for Excellence
Professional Development of Environmental Educators

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Introduction

Professional Development of Environmental Educators: Guidelines for Excellence is a set of recommendations about the basic knowledge and abilities educators need to provide high-quality environmental education. The guidelines are designed to apply:

- within the context of preservice teacher education programs and environmental education courses offered to students with varied backgrounds such as environmental studies, geography, liberal studies, or natural resources
- to the professional development of educators who will work in both formal and nonformal educational settings
- to full-time environmental educators and those for whom environmental education will be among other responsibilities or integrated within the curriculum.

Environmental educators work in a variety of settings, at a variety of jobs. They teach in public and private classrooms, and lead activities for children and adults at nonformal educational institutions such as nature centers, zoos, museums, and parks. They teach at universities in education, environmental studies, geography, natural resource, and science programs. They develop curriculum materials and administer national, state, and local programs. Regardless of the setting, *Professional Development of Environmental Educators: Guidelines for Excellence* outlines the experiences and learning that will help them deliver instruction that effectively fosters environmental literacy.

This document presents an ambitious overview of the abilities and knowledge of a well-prepared environmental educator; it does not seek to address more general educational competencies. The guidelines provide a mechanism for gauging the quality of preservice and inservice preparation programs and the abilities of environmental educators. Instead of offering fixed rules, these guidelines suggest a broad vision—a goal to work toward and a guide for professional and programmatic development.

Environmental Education: A Vision for the Future

The guidelines are grounded in a common understanding of effective environmental education. For many environmental educators, that understanding is rooted in two founding documents of the field: the Belgrade Charter (UNESCO-UNEP, 1976) and the Tbilisi Declaration (UNESCO, 1978).

The Belgrade Charter was adopted by a United Nations conference and provides a widely accepted goal statement for environmental education:

The goal of environmental education is to develop a world population that is aware of, and concerned about, the environment and its associated problems, and which has the knowledge, skills, attitudes, motivations, and commitment to work individually and collectively toward solutions of current problems and the prevention of new ones.

Two years later, at the world's first intergovernmental conference on environmental education, the Tbilisi Declaration was adopted. This declaration built on the Belgrade Charter and established three broad goals for environmental education. These goals provide the foundation for much of what has been done in the field since 1978:

- To foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;

- To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment, and skills needed to protect and improve the environment;
- To create new patterns of behavior of individuals, groups, and society as a whole toward the environment.

As the field has evolved, these principles have been researched, critiqued, revisited, and expanded. They still stand as a strong foundation for an internationally shared view of the core concepts and skills that environmentally literate citizens need. Since 1978, bodies such as the Brundtland Commission (Brundtland, 1987), the United Nations Conference on Environment and Development in Rio (UNCED, 1992), the International Conference on Environment and Society in Thessaloniki (UNESCO, 1997), the World Summit on Sustainable Development in Johannesburg (United Nations, 2002), and the UNESCO Global Action Programme on Education for Sustainable Development have influenced the work of many environmental educators. By highlighting the importance of viewing the environment within the context of human influences, this perspective has expanded the emphasis of environmental education by focusing more attention on social equity, economics, culture, and political structure.

Essential Underpinnings of Environmental Education

Environmental education builds from a core of key principles that inform its approach to education. Some of these important underpinnings are:

Systems and Systems Thinking: Systems thinking helps 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 understanding the relationships and interactions among the parts. Earth is a complex system of interacting physical, chemical, and biological processes. Organizations, individual cells, communities of animals and plants, and families can all be understood as systems. And systems can be nested within other systems.

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 total environment and are 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.

Equity and Inclusion: Environmental education instruction is inclusive, respectful, and equitable, and designed to employ the talents of people with different backgrounds, experiences, and perspectives.

The Importance of Where One Lives: Beginning close to home, learners connect with, explore, and understand their immediate surroundings. The sensitivity, knowledge, and skills needed for this local connection provides a base for moving into larger systems, broader issues, and an expanding understanding of causes, connections, and consequences.

Roots in the Real World: Learners develop knowledge and skills through direct experience with the environment, current environmental issues, and society. Investigation, analysis, and problem solving are essential activities and are most effective when relevant to the real world.

Integration and Infusion: Disciplines from the natural sciences, social sciences, and the humanities are connected through the environment and environmental issues. Environmental education offers opportunities for integration and works best when infused across the curriculum, rather than being treated as a separate discipline or subject area.

Lifelong Learning: Critical and creative thinking, decision making, and communication, as well as collaborative learning, are emphasized. These skills are essential for active and meaningful learning, both in school and over a lifetime.

Sustainability: Learning is future oriented, and focused on environmental, social, and economic responsibility as drivers of individual and institutional choices.

The Instructional Vision of Environmental Education

These guidelines outline the abilities and understandings—or competencies—an educator needs to implement environmental education successfully. Environmental education is a comprehensive and cohesive whole that both draws on and advances broader educational goals and instructional methods. Taken by themselves, these competencies may not capture this rich vision.

Environmental education is, at its heart, an integrative undertaking. Instructors teach across disciplines, linking the methods and content of natural and social sciences, arts, mathematics, and humanities to help learners fully understand and address complex environmental issues. Environmental educators need the ability and the commitment to keep the whole picture in mind as they guide students toward environmental literacy.

The learner is an active participant in environmental education. If learning is to become a natural, valued part of life beyond school, instruction should engage the learner in the process of building knowledge and skills and be guided in part by the student's interests.

Environmental issues are complex and multifaceted. Especially because these issues can prompt deep feelings and strong opinions, educators must take a balanced approach to instruction. Environmental educators incorporate differing perspectives and points of view evenhandedly and respectfully and present information with intellectual honesty. They involve learners in critical evaluation of data, results, models, conclusions, and opinions. Fairness and accuracy are watchwords for instruction.

Environmental education works in formal and nonformal settings. Instructors foster learners' innate curiosity and enthusiasm, providing them with early and continuing opportunities to explore their environment. Experiences in the outdoors are an important instructional strategy for engaging learners in direct discovery of the world around them. This awareness of their local community can prompt a personal commitment to apply skills and knowledge in pursuit of environmental quality and quality of life.

Finally, environmental education provides opportunities for learners to enhance their capacity for independent thinking and effective, responsible action. Engaging in individual and group experiences helps learners develop these capacities independently and in collaborative situations that anticipate the ways in which problem-solving happens in the community, on the job, and in the family. A strong emphasis on developing communication skills helps learners demonstrate and disseminate their knowledge.

How to Use the Guidelines

Professional Development of Environmental Educators: Guidelines for Excellence is organized around six themes. Each theme describes a knowledge or skill area that must be included in the preservice and inservice training of an environmental educator. Under each theme, general guidelines further articulate the knowledge and skills that must be mastered to gain competency in that area. Finally, each guideline is accompanied by several more specific indicators that suggest ways of assessing the abilities of new environmental educators, as well as the quality of the programs that prepare them for their profession. Indicators are to be used simply as examples and do not represent an all-inclusive listing of abilities.

Theme

Theme Two: Foundations of Environmental Education

Environmental educators must demonstrate a basic understanding of the goals, theory, practice, and history of the field of environmental education. This knowledge provides a solid foundation on which educators can build their own practice.

2.1 Fundamental characteristics and goals of environmental education

Educators understand environmental education as a distinct field and know its defining characteristics and goals.

- Identify the goals and objectives of environmental education as laid out in founding documents of the field such as the Belgrade Charter (UNESCO-UNEP, 1976) and Tbilisi Declaration (UNESCO, 1978), as well as in more recent definitions such as Agenda 21 (UNCED, 1992).
- Describe the broad view that environmental education takes of "environment," incorporating concepts such as systems, interdependence, and interactions among humans, other living organisms, the physical environment, and the built or designed environment.
- Discuss environmental education as an interdisciplinary field and provide examples of ways in which it draws on and integrates knowledge from across academic disciplines.
- Identify major components of environmental literacy. Discuss influences that have contributed to the evolution of these concepts, such as work done by Charles Roth, Harold Hungerford, R. Ben Beyton, and Rick Wilke.
- Relate environmental education's focus on environmental literacy and citizenship with the need to provide opportunities for learners to enhance their capacity for independent thinking and effective, responsible action.

2.2 How environmental education is implemented

Guidelines

Educators understand that environmental education takes place in a variety of settings and that sources of support, program requirements, and other factors vary from context to context.

- Identify a range of individuals, organizations, and agencies delivering environmental education programs, including formal and nonformal programs. Identify efforts to link formal and nonformal programs through partnerships and other collaborations.
- Discuss how school policies, state or local mandates for environmental education, and federal legislation influence environmental education efforts.
- Describe a variety of national, regional, state, and local environmental education programs and support services, including funding sources and resources.

2.3 The evolution of the field

Educators are familiar with how the field of environmental education has changed over time and continues to change.

- Discuss how educational movements, including progressive education, nature study, outdoor education, conservation education, and ecology education, contributed to the development of environmental education and how they differ from environmental education.

Sample Format for the Guidelines

To assist in the development of programs for preservice and inservice preparation, each theme is accompanied by references to several relevant articles and books. These references enable developers and instructors of professional development programs and environmental education courses to delve more deeply into the content of each theme.

Guidelines at a Glance

This list includes the six themes and general guidelines required for competency in environmental education. Each guideline is further articulated in the sections following this summary.

Theme One: Environmental Literacy
Educators must be competent in the skills and understandings outlined in *K-12 Environmental Education: Guidelines for Excellence.*

1.1 Questioning, analysis, and interpretation skills
1.2 Environmental processes and systems
1.3 Skills for understanding and addressing environmental issues
1.4 Personal and civic responsibility

Theme Two: Foundations of Environmental Education
Educators must have a basic understanding of the goals, theory, practice, and history of the field of environmental education.

2.1 Fundamental characteristics and goals of environmental education
2.2 How environmental education is implemented
2.3 The evolution of the field

Theme Three: Professional Responsibilities of the Environmental Educator
Educators must understand and accept the responsibilities associated with practicing environmental education.

3.1 Exemplary environmental education practice
3.2 Emphasis on education, not advocacy
3.3 Ongoing learning and professional development

Theme Four: Planning and Implementing Environmental Education
Educators must combine the fundamentals of high-quality education with the unique features of environmental education to design and implement effective instruction.

4.1 Knowledge of learners
4.2 Knowledge of instructional methodologies
4.3 Planning for instruction
4.4 Knowledge of environmental education materials and resources
4.5 Technologies that assist learning
4.6 Settings for instruction
4.7 Curriculum planning

Theme Five: Fostering Learning and Promoting Inclusivity
Educators enable all learners to engage in culturally relevant open inquiry and investigation, especially when considering environmental issues that are controversial and require learners to seriously reflect on their own and others' perspectives.

5.1 A climate for learning about and exploring the environment
5.2 An inclusive and collaborative learning environment
5.3 Flexible and responsive instruction

Theme Six: Assessment and Evaluation
Environmental educators must possess the knowledge, abilities, and commitment to make assessment and evaluation integral to instruction and programs.

6.1 Learner outcomes
6.2 Assessment that is part of instruction
6.3 Improving instruction
6.4 Evaluating programs

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Theme One: Environmental Literacy

Environmental educators must possess the understandings, skills, and attitudes associated with environmental literacy. These competencies have been defined in detail in *K-12 Environmental Education: Guidelines for Learning)*, published by the North American Association for Environmental Education, which should be considered a companion to this document. Educators must gain a working knowledge of the content and skills they will be teaching, with a mastery, at minimum, appropriate to the developmental level at which they will be teaching.

The outline below offers a broad summary of the content knowledge and basic skills required of environmentally literate educators, and should guide the preparation of instructors.

1.1 Questioning, analysis, and interpretation skills

Developing environmental literacy depends on a willingness and ability to ask questions about the surrounding world, speculate and hypothesize, seek and evaluate information, and develop answers to questions. Environmental literacy requires a familiarity with some basic modes of inquiry, a mastery of fundamental skills for gathering and organizing information, and an ability to interpret and synthesize information and communicate explanations.

1.2 Environmental processes and systems

Environmental literacy hinges on understanding the processes and systems that comprise the environment, including human systems and their influences. That understanding is based on knowledge synthesized from across the traditional disciplines (especially the natural and social sciences) and includes knowledge about the Earth as a physical system and living environment.

1.3 Skills for understanding and addressing environmental issues

Environmental literacy includes the abilities to learn about, evaluate, and act on environmental issues. The skills and knowledge outlined in the first two guidelines (1.1, questioning, analysis, and interpretation skills, and 1.2, environmental processes and systems) are applied and refined in the context of these issues—the real-life dramas where differing viewpoints and interpretations of data about environmental problems and their potential solutions are played out.

1.4 Personal and civic responsibility

Environmental literacy is activated by individual commitment. Environmentally literate community members are motivated and empowered to act on their own informed conclusions about what should be done to ensure environmental quality. In developing and applying concept-based learnings and skills for inquiry, analysis, and action, people cultivate an understanding that what they do as individuals and in groups makes a difference.

Selected Reference:

K-12 Environmental Education: Guidelines for Excellence. Washington, D.C.: North American Association for Environmental Education, 2019.

Theme Two: Foundations of Environmental Education

Environmental educators must demonstrate a basic understanding of the goals, theory, practice, and history of the field of environmental education. This knowledge provides a solid foundation on which educators can build their own practice.

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- Describe the broad view that environmental education takes of "environment," incorporating concepts such as systems, interdependence, and interactions among humans, other living organisms, the physical environment, and the built or designed environment.
- Discuss environmental education as an interdisciplinary field and provide examples of ways in which it draws on and integrates knowledge from across academic disciplines.
- Identify major components of environmental literacy. Discuss influences that have contributed to the evolution of these concepts by a range of authors.
- Relate environmental education's focus on environmental literacy and civic engagement with the need to provide opportunities for learners to enhance their capacity for independent thinking and effective, responsible action.

2.2 How environmental education is implemented

Educators understand that environmental education takes place in a variety of settings and that sources of support, program requirements, and other factors vary from context to context.

- Identify a range of individuals, organizations, and agencies delivering environmental education programs, including formal and nonformal programs. Identify efforts to link formal and nonformal programs through partnerships and other collaborations.
- Discuss how school policies, state/provincial mandates for environmental education, and federal legislation influence environmental education efforts.
- Describe a variety of national, regional, state/provincial, and local environmental education programs and support services, including funding sources and resources.

2.3 The evolution of the field

Educators are familiar with how the field of environmental education has changed over time and continues to change.

- Discuss how educational movements, including progressive education, nature study, outdoor education, conservation education, and ecology education, contributed to the development of environmental education and how they differ from environmental education.

- Discuss how the work of bodies such as the Brundtland Commission (Brundtland, 1987), the United Nations Conference on Environment and Development (UNCED, 1992), the International Conference on Environment and Society (UNESCO 1997), the World Summit on Sustainable Development (2002), and the UNESCO Global Action Programme on Education for Sustainable Development have influenced—or might influence—environmental education.
- Describe specific findings from environmental education research and discuss their effect on how environmental education might be perceived, defined, or practiced.
- Identify current and emerging issues in the field of environmental education. For example, evaluate assertions that environmental education focuses more on advocacy rather than education and discuss how these assertions are affecting environmental educators and education programs.
- Describe how specific environmental education research findings have informed the educator's own perspective.

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For additional environmental education research related materials, visit: https://naaee.org/our-work/programs/research

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Theme Three: Professional Responsibilities of the Environmental Educator

Environmental educators must understand and accept the responsibilities associated with practicing environmental education. In their preservice and inservice preparation, educators should come to understand environmental education as a profession that maintains consistent and high standards for instruction and professional conduct.

3.1 Exemplary environmental education practice

Educators understand their responsibility to provide environmental education that is appropriate, constructive, and aligned with the standards of the field.

- Identify ways in which environmental education can be used as a tool for meeting applicable standards and addressing education reform goals. Identify and practice ways in which educators can enhance these links in their work.
- Assess the role of partnerships with community members and organizations, government agencies, businesses, the formal and nonformal education systems, and others in providing environmental education that is appropriate and helpful to the community.
- Model responsible, respectful, and reasoned behavior during instruction.
- Model the process of inquiry and application of environmental investigations in instruction.

3.2 Emphasis on education, not advocacy

Educators understand that their commitment as environmental educators is to provide accurate, balanced, and effective instruction—not to promote a particular view about environmental conditions, issues, or actions.

- Identify and implement instructional techniques for presenting differing viewpoints and theories in a balanced manner and identifying potential sources of bias in information.
- Differentiate among instructional materials on the basis of their factual accuracy. Select and use materials that together present a range of differing viewpoints, ethical positions, and interpretations where there are differences of opinion or competing scientific explanations. Weigh evidence regarding environmental problems based on validity of data (e.g., from scientific societies or reputable journals).
- Identify and implement instructional strategies and techniques that encourage learners to explore different perspectives, form their own opinions, and explain their beliefs.

3.3 Ongoing learning and professional development

Educators are aware of the need to be active learners in their professional lives.

- Identify and practice ways of continually updating information about the environment and issues, current research, environmental education materials, and instructional methods. For example, critically read scientific journals or join and actively participate in local, state/provincial, national, or international organizations associated with environmental education, or participate in a professional certification program.

- Identify and develop relationships with mentors, advisors, and others who challenge educators to expand and upgrade their knowledge and skills and expand their firsthand understanding of different points of view about environmental issues.
- Reflect on and learn from personal practice as an environmental educator, both individually and with other professionals and colleagues. Use tools such as peer coaching, portfolios, and journals.
- Seek out opportunities to learn essential content and skills in real-world environmental settings or contexts, especially within the communities and ecosystems in which one lives and teaches.
- Learn and use research and analytical skills to expand existing knowledge about the environment, related issues, and environmental education.

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Theme Four: Planning and Implementing Environmental Education

Environmental educators must combine the fundamentals of high-quality education with the unique features of environmental education to design and implement effective instruction. Their professional preparation should enable educators to provide the interdisciplinary, hands-on, investigative learning opportunities that are central to environmental education.

4.1 Knowledge of learners

Educators know how to tailor instructional approaches to meet the needs of, yet challenge, different learners.

- Identify and model methods for presenting the environment or environmental issues in appropriate and engaging ways for learners of different ages, backgrounds, levels of knowledge, and developmental abilities. (This range may include adults, especially for educators in nonformal settings.)
- Select environmental education materials and strategies that are developmentally appropriate for a designated age or level of knowledge. Adjust these to respond to individual differences among learners.
- Demonstrate an understanding of learning theories. Organize environmental education instruction to accommodate different approaches to learning.
- Apply theories of cognitive and moral or social development in creating an environmental education instructional plan for a particular age level, class, or group.
- Recognize and acknowledge the validity of varying cultural perspectives present in groups of learners. Tailor instructional approaches to respond to these perspectives and use them as an educational resource.

4.2 Knowledge of instructional methodologies

Educators are familiar with and can employ a range of instructional methods that are particularly suited to environmental education.

- Select among relevant environmental topics and issues for study based on learners' interests and their ability to construct knowledge to gain conceptual understanding.
- Use a variety of teaching methods and strategies appropriate for the environmental education content and context (see box below).
- Select instructional methodologies based on learning objectives, learner characteristics, time requirements, involvement of community members, community dynamics and policies, available resources, and the instructional setting.

4.3 Planning for instruction

Educators are able to plan age-appropriate environmental education instruction and programs that meet specific instructional goals.

- Produce a plan for environmental education instruction and demonstrate how the overall plan and specific elements (such as plans for units of instructional or daily activities) enhance coordination or integration across disciplines or help meet specific goals of environmental education.

- Develop a plan for a coherent, focused environmental education program that is consistent with the content outlined in *K-12 Environmental Education: Guidelines for Excellence* or comparable expectations for adults.
- Demonstrate how plans for environmental education instruction will help learners meet relevant national, state/provincial, and local educational standards for learning performance in specific disciplines.

4.4 Knowledge of environmental education materials and resources

Educators are aware of a range of materials and resources for their environmental education efforts and understand how to access, evaluate, and use these resources.

- Identify and evaluate materials and education resources using criteria such as those suggested in Environmental Education Materials: Guidelines for Excellence.
- Demonstrate ways in which the community can be a resource for environmental education, identifying local businesses, service organizations, government agencies, nonprofit organizations, and others that may participate in and support instructional programs.
- Identify and use sources of information about instructional materials and other resources including training offered by national, state, and local environmental education programs and professional organizations.
- Use the Internet to identify and access sources of information about the environment, particular issues, and educational resources. Critically evaluate the usefulness of resources found on the Internet.

Essential Approaches to Environmental Education Instruction

Environmental educators employ many instructional strategies—ranging from lecture and discussion to action research, and from reading assignments to panel discussions and debates. While many methods are useful in environmental education, there are some instructional methods that are particularly well suited to environmental education content. Educators should be familiar with these and be able to put them into action. They include:

- Hands-on observation and discovery in the environment
- Inquiry
- Cooperative learning
- Community-based action research and problem solving
- Investigating environmental issues
- Service learning
- Simulations and models
- Case studies
- Problem-based learning
- Project-based learning
- Storytelling
- Future Problem Solving

References for these instructional methods are included at the end of this section.

4.5 Technologies that assist learning

Educators are familiar with a range of technologies available to assist learning.

- Use a variety of tools for environmental observation, measurement, and monitoring (e.g., magnifying glasses, chemical tests, hygrometers, survey and interview techniques, traffic counts) and instruct learners in their safe and proper use.
- Demonstrate proficiency with technologies used to display, analyze, and communicate environmental information.
- Identify sources of expertise about unfamiliar instructional technologies and learn from them or incorporate this outside expertise into instruction.

4.6 Settings for instruction

Educators understand the importance of a safe and conducive learning environment both indoors and outside.

- Demonstrate a concern for learner safety in designing, planning, and implementing instruction, especially experiences that are hands-on or that take place outside. Attend to the physical layout and maintenance of the learning facility or center so learners can use it safely and effectively.
- Identify, create, and use diverse settings for environmental education, appropriate to different subject matter and available resources. These may include the school yard, laboratory, field settings, community settings, museums, zoos, demonstration sites, and other places.
- Identify or develop and implement responses to real or perceived barriers to using expanded settings (such as outdoor settings) in educational and safe ways.
- Plan and implement instruction that first links content to learners' immediate surroundings and experience, then expands learners' horizons as appropriate to larger environmental issues and contexts.

4.7 Curriculum planning

Educators are familiar with ways of including environmental education in the curriculum.

- Describe basic approaches to creating a developmentally appropriate scope and sequence for environmental education curricula.
- Develop an environmental education program designed to meet the educational goals of an agency or other institution using criteria such as those outlined in Nonformal Environmental Education: Guidelines for Excellence.
- Develop a plan for integrating environmental education into the formal school curriculum, either across the curriculum or as a separate course or emphasis within one or more areas of study.
- Demonstrate links between environmental education curricula (or plans for integrating environmental education into an existing curriculum) and national, state/provincial, or local standards in disciplines such as science, mathematics, social studies, geography, and language arts.
- Cross-reference environmental education with state/provincial education standards in a particular discipline or grade level.

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Theme Five: Fostering Learning and Promoting Inclusivity

Environmental educators must enable all learners to engage in culturally relevant open inquiry and investigation, especially when considering environmental issues that are controversial and require learners to seriously reflect on their own and others' perspectives. Educators' training should prepare them to foster an environment, including participant interactions, that is conducive to learning.

5.1 A climate for learning about and exploring the environment

Educators understand how to create a climate in which learners are intellectually stimulated and motivated to learn about the environment.

- Relate the idea of lifelong learning to instructional practices that engage learners in taking responsibility for their own learning and expectations for achievement. Demonstrate proficiency with these practices in instructional settings.
- Imbue instruction with a sense of the importance and excitement of the content.
- Provide opportunities for experiences that increase learners' awareness of—and enthusiasm for—the natural and human-designed environment.
- Incorporate opportunities for learners to have firsthand experiences exploring the world around them.
- Discuss why fostering clear and independent thinking is important in light of environmental education's goal of developing environmentally literate community members.
- Identify and use instructional techniques that encourage learners to ask questions and explore a variety of answers.

5.2 An inclusive and collaborative learning environment

Educators know how to maximize learning by fostering an open, collaborative, inclusive, and equitable learning environment.

- Identify and use ways to encourage flexibility, creativity, and openness, considering the assumptions and interpretations that influence the conclusions that learners and others draw about the environment and environmental issues.
- Relate learners' capacity for collaborative work to their ability to function as responsible and effective community members. Describe and implement management techniques that foster independent and productive group work.
- Include diverse cultures, races, gender identities, social groups, ages, and perspectives with respect, equity, and an acknowledgment of the value of such diversity. Use diverse backgrounds and perspectives as instructional resources.
- Demonstrate respect for learners as individuals with differing personal and family backgrounds, abilities, perspectives and interests.
- Incorporate multiple perspectives, including learners' personal, family, and community and cultural norms, into environmental education instruction.
- Foster equity by creating opportunities for all learners to have access to and participate in environmental education.

5.3 Flexible and responsive instruction

Educators know how to augment proper planning with the flexibility that allows them to take advantage of new instructional opportunities.

- Modify instructional plans and approaches, when appropriate, to take advantage of unexpected opportunities (e.g. new developments in community issues, recent events or phenomena that are in the news, or breakthroughs in scientific understanding) and learner questions and interests.
- Blend a variety of instructional methods and activities to meet instructional objectives. Make smooth transitions from one to another.
- Work collaboratively with other instructors and discipline areas, adapting instructional approaches as needed to blend or complement instructional styles and to meet shared environmental education goals.

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Theme Six: Assessment and Evaluation

Environmental educators possess the knowledge, abilities, and commitment to make assessment and evaluation integral to instruction and programs. Professional preparation should provide educators with tools for assessing learner progress and evaluating the effectiveness of their own programs.

6.1 Learner outcomes

Educators understand the importance of tying assessment to learning.

- State expected learner outcomes that are tied to the goals and objectives of environmental education.
- Identify national, state/provincial, and local standards that apply to stated learner outcomes and link assessment of environmental education learnings to these.
- Develop and use a variety of strategies for assessing learning outcomes that reflect applicable subject area standards and environmental education goals and objectives.
- Describe and use means for engaging learners in setting their own expectations for achievement. Discuss the importance of these abilities in light of environmental education's emphasis on learner-centered education and lifelong learning.

6.2 Assessment that is part of instruction

Educators are familiar with ways of incorporating assessment into environmental education.

- Make objectives and other expectations clear to learners at the outset of an environmental education activity or instruction.
- Provide examples of and implement specific performance-based assessments such as portfolios, open-ended questions, oral reports, group or independent research, or other projects appropriate to environmental education instruction.
- Identify and use techniques that assess learners' baseline understandings and skills at the beginning of environmental education programs, lessons, and units.
- Develop formative and summative assessment tools appropriate to specific environmental education instructional segments or projects.
- Discuss the importance of and identify techniques for encouraging learners to assess their own and others' work. Use these assessments to improve their learning experiences.

6.3 Improving instruction

Educators know how to use their instructional experiences and assessments to improve future instruction.

- Organize, interpret, and use the results of differing kinds of assessment to help modify and improve future instruction.
- Demonstrate a willingness and ability to collect additional information from and about learners to help modify and improve future instruction.
- Seek out opportunities to reflect, individually and with colleagues, on their own instructional practices and the broader practice of environmental education within the field.

6.4 Evaluating Programs

Educators understand the importance of evaluating environmental education programs and are familiar with basic evaluation approaches.

- Discuss how program evaluation, including needs assessment, formative evaluation, and summative evaluation, contributes to program design and implementation.
- Differentiate among program outputs, outcomes, and impacts and explain how they relate to program goals and objectives.
- Describe reasons for evaluating environmental education programs.
- List a variety of data collection methods used in environmental education program evaluation.
- Develop a plan for integrating evaluation into the overall program design process using criteria such as those suggested in Nonformal Environmental Education Programs: Guidelines for Excellence.

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North American Association for Environmental Education

The National Project for Excellence in Environmental Education

The North American Association for Environmental Education (NAAEE) launched the National Project for Excellence in Environmental Education in 1993 to help educators develop and deliver high-quality education programming. The project works to create a more environmentally literate citizenry with the knowledge, skills, and inclinations to make informed choices and exercise the rights and responsibilities of members of a community.

To date, NAAEE has published six sets of guidelines that promote the use of balanced, scientifically accurate, and comprehensive environmental education materials and programs that advance environmental literacy and civic engagement.

Publications

Publications created by the National Project for Excellence in Environmental Education include:

- *Environmental Education Materials: Guidelines for Excellence*. A set of recommendations for developing and selecting environmental education materials.
- *K-12 Environmental Education: Guidelines for Excellence* (2019). A comprehensive framework for environmental education, demonstrating benchmarks towards environmental literacy.
- *K-12 Environmental Education: Guidelines for Excellence Executive Summary* (2019). An easy-to-use outline listing the guidelines that can be used to compare performance expectations across grade levels.
- *Professional Development of Environmental Educators: Guidelines for Excellence* (5th edition, 2019). A set of competencies for educators preparing to teach environmental education in a variety of job settings.
- *Nonformal Environmental Education Programs: Guidelines for Excellence* (2nd edition, 2009). A set of recommendations to be used in the development of comprehensive environmental education programs or to trigger improvements in existing ones.
- *Early Childhood Environmental Education Programs: Guidelines for Excellence* (2016). A set of recommendations to be used in the development of comprehensive early childhood environmental education programs or to trigger improvements in existing ones.
- *Community Engagement: Guidelines for Excellence* (2017). This set of guidelines focuses on community wellness and is designed to help environmental educators create inclusive environments that support effective partnerships and collaborations.

Hard copies and free downloadable pdfs of the *Environmental Education Guidelines* publications can be ordered from NAAEE at https://naaee.org/our-work/programs/guidelinesexcellence

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