
EDUCATIONAL TRENDS

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Highlights

- Urban environmental education practices fall into five broad trends: City as Classroom, Problem Solving, Environmental Stewardship, Individual and Community Development, and City as Social-Ecological System.
- Urban environmental education is driven by concerns about the well-being of communities and ecosystems, and its goals reflect an increasingly human-dominated world.
- Urban environmental education contributes to urban sustainability by addressing social and environmental issues.

Introduction

How to make sense of the myriad of urban environmental education programs? Urban environmental education aims to achieve multiple goals, uses various educational approaches, engages diverse participants, works in a variety of built and natural urban settings, addresses a range of environmental and social issues, and is conducted by schools, community organizations, nongovernmental organizations, government agencies, and private businesses. While each of these elements of urban environmental education is important, in this chapter we focus on goals because of their influence on program planning, evaluation,

and research. We provide descriptions of five urban environmental education trends, which we previously distilled from a literature review (Russ and Krasny, 2015) and from our own experiences. While recognizing that we did not conduct a systematic literature review that would have identified and synthesized all the scholarly research on urban environmental education, we offer these five trends as preliminary categorizations to help readers make sense of the wide range of practices in this book. We suggest that urban environmental education is driven by concerns about the well-being of communities and ecosystems and that its goals and approaches are applicable to any environmental education programs in human-dominated settings.

Five Trends

One approach to understanding urban environmental education is to review its goals as described in the literature. In 2013, we analyzed one hundred articles, chapters, and books found by searching the phrase “urban environmental education” in Google Scholar and ERIC databases, and fifteen additional publications that were cited in the publications that came up from our original search but that used other terms such as “urban ecosystem education” or that were foundational to urban environmental education (see references in Russ and Krasny, 2015). Based on these publications, we identified underlying goals of urban environmental education and grouped them into five trends. Whereas our review was limited to publications in English, we discussed these trends with international colleagues during site visits to urban environmental education programs in Europe, South America, Asia, Australia, Africa, and North America and during professional meetings. Based on these visits and discussions, we revised the trends to make them more universally applicable (Table 30.1). We recognize, however, that practices vary widely depending on context and that practices are constantly evolving in response to social and environmental change.

The trends reflect how urban environmental education has expanded its approaches over its one-hundred-year-plus history. Although the term “urban environmental education” was first mentioned in the literature in the late 1960s (Shomon, 1969), related ideas date back to the first half of the twentieth century (e.g., Bailey, 1911; Philpott, 1946). Initially, educators in urban areas borrowed ideas from nature study, science education, and conservation education. Later they expanded their focus to encompass environmental and related social issues. From the 1970s onward, educators began integrating environmental education with community-based and other urban environmental stewardship programs. More recently, a growing number of educators have used environmental education as a

TABLE 30.1 Trends in urban environmental education

| TRENDS | URBAN ENVIRONMENTAL EDUCATION GOALS | EXAMPLE EDUCATIONAL APPROACHES |
|--------------------------------------|--|--|
| City as Classroom | Facilitate learning about urban and other environments, ecology, science, geography, history, and other subjects using urban outdoor and indoor settings | Nature study, citizen science, environmental monitoring, inquiry-based programs, community mapping, neighborhood inventories, exhibits, storytelling, nature interpretation |
| Problem Solving | Solve or mitigate environmental problems and related social problems | Environmental activism, conservation education, action research, environmental justice education, climate change education |
| Environmental Stewardship | Foster community-based management of urban ecosystems, involve community members in decision making and action to improve urban natural resources | Grassroots stewardship and education, civic ecology education, restoration-based education, green jobs training, youth employment programs, public-private environmental partnerships, green infrastructure education, restoration-based education |
| Individual and Community Development | Foster positive youth development, community well-being, asset-based community development, positive social norms, and social capital | Youth development programs, intergenerational learning, outdoor adventure education, community development programs, programs advancing human health and equality |
| City as Social-Ecological System | Develop an understanding of cities as social-ecological systems, and reimagine how to manage cities to achieve desired environmental and social outcomes | Participatory urban planning, urban green design, adaptive and collaborative management, programs emphasizing cities as social-ecological systems and social-ecological systems resilience |

tool for individual and community development in cities, while others have borrowed ideas from urban planning and related social sciences and environmental disciplines to engage participants in reimagining possibilities for sustainable development. Below we present each trend separately to help the reader understand the trends' goals and educational approaches. Since any one educational program likely pursues multiple goals, readers may want to avoid trying to place programs within a single trend, but rather envision how programs they are familiar with draw from several trends and integrate multiple goals.

Trend 1: City as Classroom

The goal of the City as Classroom trend is environmental and science learning. Educators help participants acquire environmental literacy, knowledge of the local environment, and proficiency in urban geography, ecology, biology, history,

and other subjects through urban outdoor and indoor environmental education activities. Initially, programs within this trend were designed to teach science and nurture positive attitudes toward nature and were driven by the recognition that hands-on learning in local ecosystems can enhance understanding of the environment (Bailey, 1911). By the mid-twentieth century, educators were advised to teach about biology, natural sciences, and resource conservation specifically by using urban spaces, including schoolyards, water supply and sewage disposal facilities, transportation and green corridors, urban nature trails, vacant lots, greenhouses, parks, and urban rivers. Programs within this trend have expanded to use street trees, parks and other open spaces, green infrastructure, industrial sites, and museums to help people learn about biodiversity, environmental quality, and local and global ecosystem processes (see references in Russ and Krasny, 2015).

To learn about ecosystems and biodiversity, students engage in urban field studies, outdoor investigation, community garden inventories, ecosystem services measurement, citizen science, and inquiry-based activities. Educators and environmental leaders further strengthen cities' ability to serve as classrooms by establishing urban ecology centers, green infrastructure demonstration sites, interpretation trails, restored ecosystems, urban agriculture sites, and environmental classrooms in industrial facilities. In sum, City as Classroom is an established trend in urban environmental education the goal of which is to facilitate learning about science and the participants' local environment through exploration of history, communities, and natural and built elements in cities.

Trend 2: Problem Solving

The goal of the Problem Solving trend is to mitigate environmental and related social problems by engaging participants in decision making and local policy processes and by changing individual pro-environmental behaviors. Initially, this trend emerged in response to urban environmental issues such as air pollution, lack of green space, and environmental injustice and was an effort to expand on environmental education practices that focused on ecological knowledge and conservation outside cities, with little relevance to the everyday experiences of urban residents. In the 1940s and 1950s, professionals noted that cities provide opportunities to learn about environmental issues, such as treating rivers as sewers, and to contribute to decision making and mitigating these problems (e.g., Renner and Hartley, 1940). Environmental educators realized that while urban residents may have little interest in learning about ecology and wildlife in distant places, they may be concerned and motivated to learn about pollution, waste

disposal, environmental risks, human health, traffic congestion, and lack of open space (see references in Russ and Krasny, 2015).

In addition to biophysical problems such as pollution and climate change, some publications proposed that urban environmental education should address social concerns such as poverty, unemployment, racism, marginalization, drugs, violence, access to recreation sites and environmental activities, food justice, and human health (Frank et al., 1994). Knowledge about and skills to address these social problems can be learned through environmental activism, field trips, meetings with professionals, urban farming, environmental art, taking photos of attractive and negative urban features, monitoring noise pollution, and other activities through which local residents improve their communities. Within this trend, programs often take place in collaboration with neighborhood councils, faith-based organizations, community centers, housing agencies, and grassroots initiatives. As a response to environmental degradation, climate change, and social issues, programs following this trend educate about the causes of these problems and often call for individual, community, corporate, and governmental action to mitigate them. In sum, the goal of the Problem Solving trend in urban environmental education is to address environmental and related social problems.

Trend 3: Environmental Stewardship

The goal of the Environmental Stewardship trend is to enhance urban ecosystems and ecosystem services, create and maintain green infrastructure, support biodiversity, and produce food by involving urban residents and their government, nonprofit organization, and private partners in hands-on environmental stewardship and management of urban natural resources. The assumption is that citizens and communities are able to design, restore, improve, and maintain local urban ecosystems, often in collaboration with government agencies, nonprofit organizations, and businesses, and at the same time learn about these ecosystems. For example, education can be integrated in such activities as tree planting, park beautification, landscaping in schoolyards, eradicating invasive species for native urban wildlife, restoring urban shellfisheries, replanting mangrove forests, creating and maintaining urban agriculture sites, and cleaning up litter in public spaces such as parks, vacant lots, shorelines, and cemeteries (see references in Russ and Krasny, 2015).

Recent work in civic ecology has expanded on this trend by suggesting that environmental education in cities can be situated in civic ecology practices—including community forestry, community gardening, and community-based

habitat restoration—thereby contributing to biodiversity, ecosystem services, and social capital while providing opportunities for environmental learning (Krasny and Tidball, 2015). Programs within this trend may integrate community-based service learning; summer youth employment programs; urban gardening and farmers markets; installing and supporting green roofs, rain gardens, and other green infrastructure; cleanup of brownfield sites; and management of urban forests and wetlands. In sum, urban environmental education that fits this trend promotes learning through engaging in hands-on urban stewardship and restoration of degraded lands and waters in cities.

Trend 4: Individual and Community Development

The goal of this trend is to contribute to individual and community development. Urban environmental education programs within this trend promote citizenship and life skills, foster self-esteem, build social capital and community cohesion, strengthen mutual respect and feelings of belonging to a community, and empower communities to take collective action. Programs inspired by this trend often use the urban environment to foster positive youth development and community well-being (Schusler and Krasny, 2010). Starting in the 1980s, publications showed how urban environmental education may nurture students' creativity and reaffirm positive aspects of their cultures, develop youths' work ethic and teamwork skills, create positive attitudes toward learning, improve critical thinking, reduce dropout rates and gang and drug activity, and promote active citizenship (e.g., Verrett et al., 1990). Other publications called for building on and promoting positive youth attributes, such as resilience, social competence, autonomy, ability to solve problems, and a sense of hope for the future (Frank et al., 1994).

In this trend, individual and community development are linked because people who are empowered and informed about environmental and social issues can make positive changes in their communities. For example, educational programs may help city residents to articulate their goals for community well-being and participate in collective advocacy and urban planning to bring about those goals. Other programs may bring together children, educators, architects, environmental professionals, and artists to work on community design, art, and similar projects to serve community interests. Such programs often take place as part of corporate social responsibility initiatives, as well as in intergenerational, after-school, and youth employment programs conducted by community development, faith-based, youth development, and other community-based

organizations. Some programs in this trend may use nature-related and outdoor experiences to improve participants' health and well-being and pay little attention to environmental outcomes. In sum, this trend considers individual development and community development as important outcomes of urban environmental education.

Trend 5: City as Social-Ecological System

City as Social-Ecological System helps people view cities as valuable systems, where social and ecological processes are equally important and where environmental management approaches are constantly invented and improved. This trend promotes the idea that cities are social-ecological systems (Krasny et al., 2013) that encompass nature and provide ecosystem services (Beatley, 2011) and that urban residents can influence and are influenced by social-ecological processes. Publications emphasize that natural or ecological elements exist in cities along with built, social, political, economic, and cultural elements, and that urban residents are able to connect to and appreciate urban nature. In line with this reasoning, urban environmental education can contribute to the development of an ecological place meaning among youth and can help them see cities not only as human habitat but also as wildlife habitat and ecologically valuable places (Kudryavtsev, Krasny, and Stedman, 2012; Russ et al., 2015).

In addition to portraying cities as social-ecological systems, this trend emphasizes that the social and ecological dimensions of cities coevolve and depend on each other. It suggests that social and ecological processes reinforce and counter each other in positive and negative feedback loops. This trend also incorporates ideas about how networks of government, civil society, and private partners enable environmental governance approaches that adapt to social-ecological changes (Krasny and Tidball, 2015). Programs following this trend acknowledge that we have only a partial understanding of how cities should be managed and that any urban resident or organization can participate in constructing new ways of designing and governing the urban environment. These ideas are consistent with the literature on social-ecological systems resilience, which focuses on the need for cities to adapt to ongoing change, such as shifting demographics, or to transform in light of disastrous events, such as hurricanes. Further, scholars suggest that urban environmental education may foster social-ecological resilience through strengthening social capital and restoring ecosystem services and that organizations that conduct urban environmental education are actors in polycentric governance systems (Krasny, Lundholm, and Plummer, 2011; see also chapter 11). In sum, this trend builds on social-ecological resilience and

related systems thinking and green urbanism, and it helps people understand cities as integrated social-ecological systems, often through participation in collective decision making, adaptive and collaborative management, and stewardship action.

Conclusion

Urban environmental education programs usually integrate multiple goals related to each of the five trends. For example, in New York City, students attending the New York Harbor School (<http://youtu.be/CcxaZm2NkCI>) and Satellite Academy High School (<http://youtu.be/7d5mQILH3jo>) learn about the environment and science in the classroom and through monitoring populations of oysters, and they engage in environmental stewardship through community gardening and oyster reef restoration. Educators leading these programs also describe how they contribute to positive youth and community development. Similarly, programs engaging youth in reconstructing dunes and trails after catastrophic flooding integrate the Environmental Stewardship, Individual and Community Development, and City as Social-Ecological System trends (Smith, DuBois, and Krasny, 2015).

Urban environmental education goals are dynamic and continue to evolve in response to urban challenges and opportunities. For example, a movement to allow children to engage in free play through creating more natural playgrounds in cities has recently taken hold, with the goal to foster children's physical, cognitive, and emotional health. As people experience greater environmental and social risks and uncertainty related to climate change and conflict, and as city residents develop various innovations to address environmental and social problems, we will undoubtedly see urban environmental education trends develop further. In this way, urban environmental education will continue to work alongside other disciplines and sectors, such as urban resource management, disaster preparedness planning, and human and community development, to address constantly changing social-ecological problems and contribute to urban sustainability.

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