

Environment and Education

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Abstract—*Environmental education is a process that allows individuals to explore environmental issues, engage in problem solving, and take action to improve the environment. As a result, individuals develop a deeper understanding of environmental issues and have the skills to make informed and responsible decisions. Environmental education (EE) refers to organized efforts to teach how natural environments function, and particularly, how human beings can manage behavior and ecosystems to live sustainably. It is a multi-disciplinary field integrating disciplines such as biology, chemistry, physics, ecology, earth science, atmospheric science, mathematics, and geography.*

Keywords: Education, Environment, Educational Environmental.

Introduction:

The term often implies education within the school system, from primary to post-secondary. However, it sometimes includes all efforts to educate the public and other audiences, including print materials, websites, media campaigns, etc. There are also ways that environmental education is taught outside the traditional classroom. Aquariums, zoos, parks, and nature centers all have ways of teaching the public about the environment. Environmental Education is a process of providing learning experiences to obtain knowledge, understanding, skills and awareness with desirable attitudinal change about man's relationship with his natural and man surrounding which includes the relation of population, pollution, resource allocation, transportation.

What is Education?

Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs, habits, and personal development. Education originated as transmission of cultural heritage from one generation to the next. Today, educational goals increasingly encompass new ideas such as liberation of learners, critical thinking about presented information, skills needed for the modern society, empathy and complex vocational skills.

What is Environment?

The term 'environment' is widely used and has a broad range of definitions, meanings and interpretations. What does the term 'environment' mean? In popular usage, for some people, the term 'environment' means, simply, 'nature': in other words, the natural landscape together with all of its non-human features, characteristics and processes. To those people, the

environment is often closely related to notions of wilderness and of pristine landscapes that have not been influenced - or, at least, that have been imperceptibly influenced - by human activities. However, for other people, the term 'environment' includes human elements to some extent. Many people would regard agricultural and pastoral landscapes as being part of the environment, whilst others are yet more inclusive and regard all elements of the earth's surface - including urban areas - as constituting the environment. Thus, in popular usage, the notion of the 'environment' is associated with diverse images and is bound up with various assumptions and beliefs that are often unspoken - yet may be strongly held. All of these usages, however, have a central underlying assumption: that the 'environment' exists in some kind of relation to humans. Hence the environment is, variously, the 'backdrop' to the unfolding narrative of human history, the habitats and resources that humans exploit, the 'hinterland' that surrounds human settlements, or the 'wilderness' that humans have not yet domesticated or dominated.

In its most literal sense, 'environment' simply means 'surroundings' (environs); hence the environment of an individual, object, element or system includes all of the other entities with which it is surrounded. However, in reality, individuals, objects, elements and systems rarely exist in isolation; instead, they tend to interact to varying extents with their surrounding entities.

What is Educational environment?

Environmental education (EE) refers to organized efforts to teach how natural environments function, and particularly, how human beings can manage behavior and ecosystems to live sustainably. It is a multi-disciplinary field integrating disciplines such as biology, chemistry, physics, ecology, earth science, atmospheric science, mathematics, and geography.

History:

The roots of environmental education can be traced back as early as the 18th century when Jean-Jacques Rousseau stressed the importance of an education that focuses on the environment in *Emile: or, On Education*. Several decades later, Louis Agassiz, a Swiss-born naturalist, echoed Rousseau's philosophy as he encouraged students to “Study

nature, not books.” These two influential scholars helped lay the foundation for a concrete environmental education program, known as nature study, which took place in the late 19th and early 20th century.

The nature study movement used fables and moral lessons to help students develop an appreciation of nature and embrace the natural world. Anna Basford Comstock, the head of the Department of Nature Study at Cornell University, was a prominent figure in the nature study movement. She wrote the *Handbook for Nature Study* in 1911 which used nature to educate children on cultural values. Comstock and the other leaders of the movement, such as Liberty Hyde Bailey, helped Nature Study garner tremendous amounts of support from community leaders, teachers, and scientists to change the science curriculum for children across the United States.

A new type of environmental education, Conservation Education, emerged as a result of the Great Depression and Dust Bowl during the 1920s and 1930s. Conservation Education dealt with the natural world in a drastically different way from Nature Study because it focused on rigorous scientific training rather than natural history. Conservation Education was a major scientific management and planning tool that helped solve social, economic, and environmental problems during this time period. The modern environmental education movement, which gained significant momentum in the late 1960s and early 1970s, stems from Nature Study and Conservation Education. During this time period, many events – such as Civil Rights, the Vietnam War, and the Cold War – placed Americans at odds with one another and the U.S. government. However, as more people began to fear the fallout from radiation, the chemical pesticides mentioned in Rachel Carson's *Silent Spring*, and the significant amounts of air pollution and waste, the public's concern for their health and the health of their natural environment led to a unifying phenomenon known as environmentalism. Environmental education was born of the realization that solving complex local and global problems cannot be accomplished by politicians and experts alone, but requires "the support and active participation of an informed public in their various roles as consumers, voters, employers, and business and community leaders." In 1960 the National Rural Studies Association (now known as the National Association for Environmental Education) was established in the UK to promote environmental education and support teachers in incorporating sustainability into their curricula.

One of the first articles about environmental education as a new movement appeared in the *Phi Delta Kappa* in 1969, authored by James A. Swan. A definition of "Environmental Education" first appeared in *The Journal of Environmental Education* in 1969, written by William B. Stapp. Stapp later went on to become the first Director of Environmental Education for UNESCO, and then the Global Rivers International Network.

Ultimately, the first Earth Day on April 22, 1970 – a national teach-in about environmental problems – paved the way for the modern environmental education movement. Later that same year, President Nixon passed the National Environmental Education Act, which was intended to incorporate environmental education into K-12 schools. Then, in 1971, the National Association for Environmental Education (now known as the North American Association for Environmental Education) was created to improve environmental literacy by providing resources to teachers and promoting environmental education programs.

Internationally, environmental education gained recognition when the UN Conference on the Human Environment held in Stockholm, Sweden, in 1972, declared environmental education must be used as a tool to address global environmental problems. The United Nations Education Scientific and Cultural Organization (UNESCO) and United Nations Environment Program (UNEP) created three major declarations that have guided the course of environmental education.

In 2002, the United Nations Decade of Education for Sustainable Development 2005-2014 (UNDESD) was formed as a way to reconsider, excite, and change approaches to acting positively on global challenges. The Commission on Education and Communication (CEC) helped support the work of the UNDESD by composing a backbone structure for education for sustainability, which contained five major components. The components are "Imagining a better future", "Critical thinking and reflection", "Participation in decision making" and "Partnerships, and Systemic thinking".

On June 9–14, 2013, the seventh World Environmental Education Congress was held in Marrakesh, Morocco. The overall theme of the conference was "**Environmental education and issues in cities and rural areas: seeking greater harmony**", and incorporated 11 different areas of concern. The World Environmental Education Congress had 2,400 members, representing over 150 countries. This meeting was the first time ever that it had been held in an Arab country, and was put together by two different organizations, the Mohamed VI Foundation for Environmental Protection and the World Environmental Education Congress Permanent Secretariat in Italy. Topics addressed at the congress include stressing the importance of environmental education and its role to empower, establishing partnerships to promote environmental education, how to mainstream environmental and sustainability, and even how to make universities "greener".

Focus:

Environmental education focuses on:

1. Engaging with citizens of all demographics to;
2. Think critically, ethically, and creatively when evaluating environmental issues;
3. Make educated judgments about those environmental issues;

4. Develop skills and a commitment to act independently and collectively to sustain and enhance the environment; and,
5. To enhance their appreciation of the environment; resulting in positive environmental behavioural change (Bamberg & Moeser, 2007; Wals et al., 2014)

Types: There are various different career paths one could delve into within environmental education. Many of these careers require discovering and planning how to resolve environmental issues occurring in today's world. The specific responsibilities associated with each career will depend in part on their physical location, taking into account what environmental issue is most prevalent in the area. A general outlook of some careers in this field are:

1. **Federal Government Park Ranger-** Responsible for protecting the national parks, historical sites, and national seashores across the United States including the wildlife and ecosystems within them. There are many qualifications in order for one to become a park ranger and some include: obtaining a bachelor's degree and a passing grade in the PEB. Some focuses within this field include: enforcing park rules, giving tours to groups for educational purposes, and protecting parks from forest fires.
2. **Outdoor Education Teacher-** Teach students by using outdoor field and classroom work. Some invite guest speakers who are experts in their field to help teach how the basic principles of science are implemented in the real world.[9] Some requirements for this career include becoming CPR certified and having a bachelor's degree in either environmental science or a field related to it. It can be a problematic field as there is no concurrence on the central concepts that are taught as well as teachers do not agree on what constitutes an important environmental issue.
3. **Environmental Scientist-** Use of field work to research contamination in nature when writing plans in creating projects for environmental research. Environmental Scientists research topics such as air pollution, water quality, and wildlife. They also study how human health is affected by changes in the environment. Some requirements for this career are a bachelor's degree with a double major in environmental science and either biology, physics or chemistry.
4. **Environmental Engineer-** Involves the combination of biology/chemistry with engineering to generate ways to ensure the health of the planet. Scientific research is analyzed and projects are designed as a result of that research in order to come up with solutions to issues of the environment like air pollution. A bachelor's degree in civil engineering or general engineering is required as well as some experience in this field. Related fields: Environmental education has crossover with multiple other disciplines. These fields of education complement environmental education yet have unique philosophies.
5. **Citizen Science (CS)** aims to address both scientific and environmental outcomes through enlisting the public in the collection of data, through relatively simple protocols, generally from local habitats over long periods of time (Bonney et al., 2009).
6. **Education for Sustainable Development (ESD)** aims to reorient education to empower individuals to make informed decisions for environmental integrity, social justice, and economic viability for both present and future generations, whilst respecting cultural diversities (UNESCO, 2014b).
7. **Climate Change Education (CCE)** aims in enhancing the public's understanding of climate change, its consequences, and its problems, and to prepare current and future generations to limit the magnitude of climate change and to respond to its challenges (Beatty, 2012). Specifically, CCE needs to help learners develop knowledge, skills and values and action to engage and learn about the causes, impact and management of climate change (Chang, 2014).
8. **Science Education (SE)** focuses primarily on teaching knowledge and skills, to develop innovative thought in society (Walls et al., 2014).
9. **Outdoor Education (OE)** relies on the assumption that learning experiences outdoors in 'nature' foster an appreciation of nature, resulting in pro-environmental awareness and action (Clarke & Mcphie, 2014). Outdoor education means learning "in" and "for" the outdoors.
10. **Experiential education (ExE)** is a process through which a learner constructs knowledge, skill, and value from direct experiences" (AEE, 2002, p. 5) experiential education can be viewed as both a process and method to deliver the ideas and skills associated with environmental education (ERIC, 2002).
11. **Garden-based learning (GBL)** is an instructional strategy that utilizes the garden as a teaching tool. It encompasses programs, activities and projects in which the garden is the foundation for integrated learning, in and across disciplines, through active, engaging, real-world experiences that have personal meaning for children, youth, adults and communities in an informal outside learning setting.
12. **Inquiry-based Science (IBS)** is an active open style of teaching in which students follow scientific steps in a similar manner as scientists to study some problem (Walker 2015). Often used in biological and environmental settings. While each of these educational fields has their own objectives, there are points where they overlap with the intentions and philosophy of environmental education.

Benefits of Environmental Education:

1. **Imagination and enthusiasm are heightened:** EE is hands-on, interactive learning that sparks the imagination and unlocks creativity. When EE is integrated into the curriculum, students are more enthusiastic and engaged in

learning, which raises student achievement in core academic areas.

2. **Learning transcends the classroom:** Not only does EE offer opportunities for experiential learning outside of the classroom, it enables students to make connections and apply their learning in the real world. EE helps learners see the interconnectedness of social, ecological, economic, cultural, and political issues.
3. **Critical and creative thinking skills are enhanced:** EE encourages students to research, investigate how and why things happen, and make their own decisions about complex environmental issues. By developing and enhancing critical and creative thinking skills, EE helps foster a new generation of informed consumers, workers, as well as policy or decision makers.
4. **Tolerance and understanding are supported:** EE encourages students to investigate varying sides of issues to understand the full picture. It promotes tolerance of different points of view and different cultures.
5. **State and national learning standards are met for multiple subjects:** By incorporating EE practices into the curriculum, teachers can integrate science, math, language arts, history, and more into one rich lesson or activity, and still satisfy numerous state and national academic standards in all subject areas. Taking a class outside or bringing nature indoors provides an excellent backdrop or context for interdisciplinary learning.
6. **Biphobia and nature deficit disorder decline:** By exposing students to nature and allowing them to learn and play outside, EE fosters sensitivity, appreciation, and respect for the environment. It combats “nature deficit disorder” ... and it’s FUN!
7. **Healthy lifestyles are encouraged:** EE gets students outside and active, and helps address some of the health issues we are seeing in children today, such as obesity, attention deficit disorders, and depression. Good nutrition is often emphasized through EE and stress is reduced due to increased time spent in nature.
8. **Communities are strengthened:** EE promotes a sense of place and connection through community involvement. When students decide to learn more or take action to improve their environment, they reach out to community experts, donors, volunteers, and local facilities to help bring the community together to understand and address environmental issues impacting their neighborhood.
9. **Responsible action is taken to better the environment:** EE helps students understand how their decisions and actions affect the environment, builds knowledge and skills necessary to address complex environmental issues, as well as ways we can take action to keep our environment healthy and sustainable for the future. Service-learning programs offered by PLT and other EE organizations provide students and teachers with support through grants and other resources for action projects.
10. **Students and teachers are empowered:** EE promotes active learning, citizenship, and student leadership. It

empowers youth to share their voice and make a difference at their school and in their communities. EE helps teachers build their own environmental knowledge and teaching skills. I hope these “top ten” benefits will give you the confidence and commitment to incorporate EE into your curriculum!

Environment development depend on Education: This year marks a turning point for the world, with the international community adopting a new global development strategy in September and negotiating a universal deal to combat climate change in December. To succeed, policymakers must recognize that today’s global imperatives – to eradicate poverty and improve wellbeing, while restoring the Earth’s balance – form a single agenda, and that the most effective means of achieving it is education.

The good news is that the proposed set of Sustainable Development Goals, which will underpin global efforts for the next 15 years, reflect this recognition. Likewise, Article 6 of the United Nations Framework Convention on Climate Change (UNFCCC) stipulates that education, training, and public awareness on climate change must be pursued.

But, with negotiations on these global agreements far from complete, it is vital that policymakers’ emphasis on education continues to be reinforced. To this end, the world’s education ministers must take the opportunity offered by this month’s World Education Forum in Incheon, South Korea, to highlight the role that education can and should play in advancing sustainable development. A strong education system broadens access to opportunities, improves health, and bolsters the resilience of communities – all while fuelling economic growth in a way that can reinforce and accelerate these processes. Moreover, education provides the skills people need to thrive in the new sustainable economy, working in areas such as renewable energy, smart agriculture, forest rehabilitation, the design of resource-efficient cities, and sound management of healthy ecosystems.

Perhaps most important, education can bring about a fundamental shift in how we think, act, and discharge our responsibilities toward one another and the planet. After all, while financial incentives, targeted policies, and technological innovation are needed to catalyse new ways of producing and consuming, they cannot reshape people’s value systems so that they willingly uphold and advance the principles of sustainable development. Schools, however, can nurture a new generation of environmentally savvy citizens to support the transition to a prosperous and sustainable future.

Some schools are already becoming learning labs for sustainable development, where young students are being prepared to adapt to and help mitigate the consequences of climate change. Guided by the UNFCCC – as well as related initiatives like the UN Alliance on Climate Change Education, Training, and Public Awareness – governments are increasingly integrating education strategies, tools, and targets

into national development policies. The UNESCO-led UN Decade of Education for Sustainable Development, which began in 2005, was explicitly intended to instil in every human being “the knowledge, skills, attitudes, and values necessary to shape a sustainable future.”

Together, UNESCO and the UNFCCC are not only promoting climate-change education in schools; they are also giving teachers the tools and knowledge they need to provide that education through online courses. Already, more than 14 million students and 1.2 million teachers in 58 countries have been engaged in such learning, and 550 business schools have signed on to the Principles for Responsible Management Education, developed by the UN Global Compact. This progress, though important, is just the beginning. What is needed now is a global movement, with every student in every country learning about sustainable development from well-trained teachers, equipped with the appropriate curricula and resources. An ambitious sustainable development agenda, together with a legally binding global climate deal, could go a long way toward catalysing such a movement.

Of course, we cannot secure a sustainable future in a matter of months. But, with a well-designed set of commitments and targets, we can move onto the right path. And, with effective educational programs that instil in future generations the importance of restoring Earth’s balance and delivering a prosperous future for the many, rather than the few, we can stay on that path. That is the message that education ministers must emphasize at their upcoming forum, and that policymakers should heed as they negotiate this year’s two critical global agreements.

Renewable Energy Education:

Renewable energy education (REE) is a relatively new field of education. The overall objectives of REE pertain to giving a working knowledge and understanding of concepts, facts, principles and technologies for gathering the renewable sources of energy. Based on these objectives, the role of a renewable energy education programs should be informative, investigative, educative, and imaginative. REE should be taught with the world’s population in mind as the world will run out of non-renewable resources within the next century. Renewable energy education is also being brought to political leaders as a means of getting more sustainable development to occur around the globe. This is happening in the hopes that it will uproot millions of people out of poverty and into a better quality of life in many countries. Renewable energy education is also about bringing awareness of climate change to the general public as well as an understanding of the current renewable energy technologies. An understanding of the new technologies is imperative to get them stream-lined and accepted by the vast majority of the public.

Obstacles:

1. A study of Ontario teachers explored obstacles to environmental education. Through an internet-based survey questionnaire, 300 K-12 teachers from Ontario,

Canada responded. Based on the results of the survey, the most significant challenges identified by the sample of Ontario teachers include over-crowded curriculum, lack of resources, low priority of environmental education in schools, limited access to the outdoors, student apathy to environmental issues, and the controversial nature of sociopolitical action.

2. An influential article by Stevenson (1987/2007) outlines conflicting goals of environmental education and traditional schooling. According to Stevenson (1987/2007), the recent critical and action orientation of environmental education creates a challenging task for schools. Contemporary environmental education strives to transform values that underlie decision making from ones that aid environmental (and human) degradation to those that support a sustainable planet. This contrasts with the traditional purpose of schools of conserving the existing social order by reproducing the norms and values that currently dominate environmental decision making. Confronting this contradiction is a major challenge to environmental education teachers.
3. Additionally, the dominant narrative that all environmental educators have an agenda can present difficulties in expanding reach. It is said that an environmental educator is one “who uses information and educational processes to help people analyze the merits of the many and varied points of view usually present on a given environmental issues.” Greater efforts must be taken to train educators on the importance of staying within the profession’s substantive structure, and in informing the general public on the profession’s intention to empower fully informed decision making.
4. Another obstacle facing the implementation of environmental education lies the quality of education itself. Charles Sayan, the executive director of the Ocean Conservation Society, represents alternate views and critiques on environmental education in his new book *The Failure of Environmental Education (And How We Can Fix It)*. In a Yale Environment 360 interview, Sayan discusses his book and outlines several flaws within environmental education, particularly its failed efforts to “reach its potential in fighting climate change, biodiversity loss, and environmental degradation”. He believes that environmental education is not “keeping pace with environmental degradation” and encourages structural reform by increasing student engagement as well as improving relevance of information. These same critiques are discussed in Stewart Hudson’s BioScience paper, “Challenges for Environmental Education: Issues and Ideas for the 21st Century”.
5. In 2017, a study found that high school science textbooks and government resources on climate change from USA, EU, Canada and Australia did focus their recommendations for CO2 emission reductions on lower-impact actions instead of promoting the most effective emission-reduction strategies.

Conclusion:

Environmental Education is a process of providing learning experiences to obtain knowledge, understanding, skills and awareness with desirable attitudinal change about man's relationship with his natural and Mansur rounding which includes the relation of population, pollution, resource allocation, transportation technology and urban and rural planning to the total human environmental.

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