Understanding Environmental Education: Conceptualization, Definitions, History and Application

by

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Abstract

This desk study aimed at clarifying conceptual challenges associated with Environmental Education and highlight its application to society. Data was collected through literature review and author introspection. Explaining the meaning and history of Environmental Education will enable readers and stakeholders to have a common understanding of the subject matter and hence, enhances meaningful conversations and decision making. The way Environmental Education is defined among stakeholders affects its planning, application and implementation in society. Therefore, this paper is an attempt to illuminate the meaning of Environmental Education, its importance and application to society. In order to illuminate the meaning, the paper outline the aims and objectives of Environmental Education. In addition, this paper highlight on the scope of Environmental Education which include the organized efforts to teach how natural environments function, and how human beings can manage behaviour and ecosystems to live sustainably. Therefore, every individual must receive an environmental education in order to manage our environment sustainably.

Key words: Environment, Education, Environmental Education, Sustaining the Environment

Introduction

Most of the interventions to do with environmental management proposes Environmental Education (EE) as a key measure. However, the concept of Environmental Education is often misconstrued by several people. Many times, EE is treated as Conservation Education, others say it is the same as Environmental Knowledge, outdoor learning, Nature Study, Sustainability Education and other related terminologies. According to Kharrazi et.al. (2018) Environmental Education is shaped in response to societal and environmental realities and it reflects new interests and demands that enable sustainable transformations. The concept of EE gets tossed around all the time and it seems to these authors that there is need to clarify what EE really is and its application to society. Before clarifying the concept of EE, there is need to understand the meaning of the two key words that make up Environmental Education, 'Environment' and 'Education' separately.

The Environment

Origin, meaning and components

In order to understand the meaning of Environmental Education (EE), the term 'environment' must be clearly defined. There is also need to trace its origin in the literature. Jessop (2012:710) noted that the noun 'environment' traces its etymological roots in the old French 'environ' and 'environer' (referring to such terms as 'circuit', 'surround', 'enclose', and 'circumstances'). Jessop (2012) further traced the usage and definition of the word environment from the Oxford English Dictionary. He noted that the word 'environment' was first used in 1603 as far as the Oxford English Dictionary is concerned. This first sense of the term is the action or state of being environed or surrounded, encircled, or even beleaguered. The second and now much more prevalent sense provided by the OED, referring to that which environs∕surrounds and especially 'the conditions or influences under which any person or thing lives or is developed', is attributed to Carlyle in 1827 (Jessop, 2012:710).

The term 'environment' is widely used and has a broad range of definitions, meanings and interpretations. What does the term 'environment' mean today? It refers to both abiotic (physical or non-living) and biotic (living) environment. Literary, environment means the surrounding external conditions influencing development or growth of people, animal, or plants; living or working conditions. The word environment is defined as 'the circumstances and physical conditions that surround an organism or group of organisms, or the social and cultural conditions that affect an individual or community.' Since humans inhabit the natural world as well as the 'built' or technological, social, and cultural world, all these aspects are part of the environment' (Cunnigham and Cunnigham, 2004). In other words, the word environment means surroundings, in which organisms live. Environment is defined more comprehensively by others 'as a holistic view of the world as its functions at any point of time, with a multitude of spatial elemental and socio-economic systems distinguished by quality and attributes of space and mode of behaviour of abiotic and biotic forms' (Dikshit, 1984).

Components of Environment

Elements of the environment are made up of interacting systems of physical, biological and cultural. All these components are interrelated and these relationships are portrayed in Figure 1 depicting diversity.
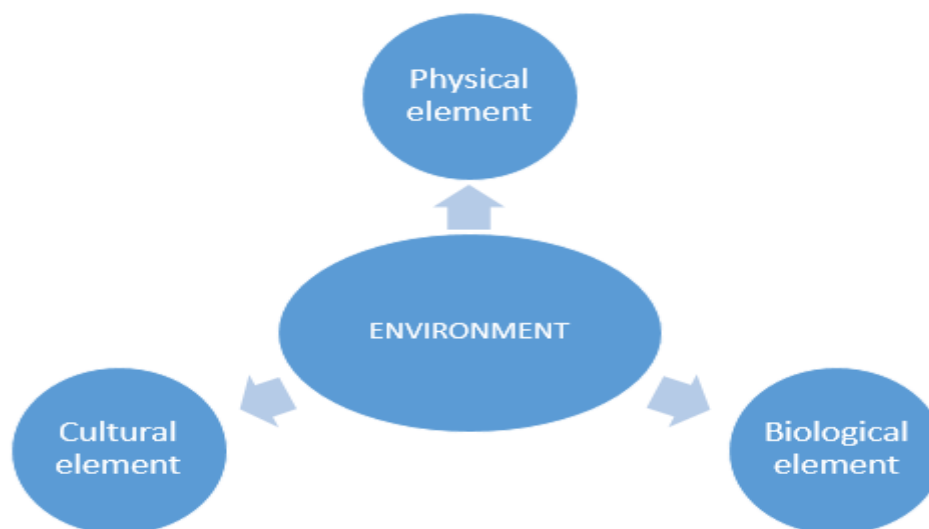
Fig.1 Components of the Environment

(Field data, 2022)

a) *Physical Elements:* Physical elements include space, landforms, water bodies, climate, soils, rocks and minerals. They determine the variable character of the human habitat, its opportunities as well as limitations.

b) *Biological Elements:* Biological elements such as plants, animals, microorganisms and men constitute the biosphere.

c) *Cultural Elements:* Cultural elements such as economic, social and political elements are essentially man- made features, which make the cultural background.

What is Education?

In order to understand the meaning of Environmental Education, the word 'Education' must be clarified. Education has been defined by many educationists, philosophers and authors. It is a word we hear and is very familiar in everyday life because education is considered the most significant activity in any society. The word "Education" is derived from the Latin words "educare" and "educere". Educare means "to bring up" or "to nourish", whereas "educere" means "to bring forth" or "to drag out". Education is the deliberate, systematic, and sustained effort to transmit, provoke or acquire knowledge, values, attitudes, skills, or sensibilities as well as any learning that results from the effort (Cremin, 27)

Education is both the act of teaching knowledge and skills to others and the act of receiving these from someone else, that is, teaching and learning. It also refers to the knowledge received through school or instruction and to the institution of teaching. In that sense,

education can either be formal, non-formal, or informal. Education originated as transmission of cultural heritage from one generation to the next.

All the foregoing definitions are pointing to the fact that Education is the process of facilitating learning, or the acquisition of knowledge, skills, values, morals, beliefs, habits, and personal development.

What is Environmental Education?

Having defined the terms 'Environment' and 'Education', we can now look at the question at hand, what is Environmental Education (EE)? Environmentalists assume that the environment is in danger and must be saved. They furthermore assume that only their prescribed solutions will save it. Therefore, their task become that of educating people to become part of the solution of saving the environment. In this regard, Environmental Education's primary goal is to present environmental information in order to motivate people into action. This goal inverts the normal educational process, which places highest priority on learners receiving accurate information and learning a full understanding of a subject.

Many 'definitions' of EE have been put forward by different scholars. One of the earliest known as the IUCN definition states that:

Environmental education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings. Environmental education also entails practice in decision making and self-formulation of a code of behaviour a bow issues concerning environmental quality (IUCN 1971, p. 17).

Environmental Education is a complex subject matter covering not just events, but also a strong underlying approach to society building. For example, EE provides people with the awareness needed to build partnerships, understand NGO activities, develop participatory approaches to urban planning, and ensure future markets for eco-businesses. EE is also a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action (UNESCO, 1978).

Furthermore, EE 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. The process enables one to maintain his or her life. This in turn, helps in the preservation of humans. It canalizes humans (or people) towards diminishing

natural resources, environmental pollution and the problem of population explosion. As such, EE generates widespread awareness of environmental problems. According to Sharma (1996), EE refers to the awareness of the physical and cultural environment and perceives its relevance for real life situations. Problems and issues are to be identified and the imbalance of environment are to be improved in view of sustainable development."

The Environmental Education and Training Partnership (EETAP) stated that the ultimate outcome of environmental education is promoting citizen action; in other words, to be environmentally literate, a person must possess citizen action skills.

History of Environmental Education

According to Kearns (2014), human beings have survived based on their interaction with the environment since time immemorial. Children watched the elders as they tilled the land for food and learnt how to do the same with time. Over time, archeologists have shown a variety of ways that humans have transferred knowledge to their children (Kearns 2014). However, over millions of years, with increase in population, human tools and skills have increased leading to complex alterations on the environment. This has demanded intensified educational tools to promote environmental protection. EE was one such tool that emerged in response to the growing awareness of the threats of environmental degradation (Gough and Gough, 2010; Gough, 2016).

According to Carter and Simmons (2010) and Eneji (2017), EE has a varied and complex history. This variation and complexity can be attributed to the subject's broad set of disciplines from which the concept sprang. Some of these disciplines include science, geography, biology, mathematics, language, arts, social science, politics, and philosophy (Eneji et al., 2017).

Scholars, such as Eneji et al. (2017) and Carter and Simons (2010), trace the history of EE to the 18th century. According to Eneji et al. (2017), this was after two influential scholars, namely Jean-Jacques Rousseau and Loius Agassiz laid the foundation for environmental education which they called "nature study". Jean-Jacques Rousseau emphasized the need for an education that focused on the environment while Loius Agassiz encouraged students to study "nature and not books." In America, the "nature studies" was solidified by Liberty Hyde Bailey (1858-1954) who was instrumental in helping students appreciate nature and embrace the natural world. This movement on nature studies was followed by other environmentally related movements. In addition to nature studies, scholars such as Disinger (1985) identified two other movements of environmental education which he listed as conservation education and outdoor education. Tilbury (1994) also identified similar antecedents which he listed as environmental studies, outdoor education, conservation and urban studies. These movements

together promoted the implementation of environmental education in schools (Tilbury, 1994). It is further posited that the modern environmental education of the 1960s, and 1970s stemmed from these nature studies and conservation movement (Holsman, 2001).

In the early 1960s, scientists drew attention to the rise in ecological and scientific problems of the environment and the need for intensified public awareness and education (Gough, 2016). Consequently, environmental education internationally gained its recognition in 1972 at the UN Conference on Human Environment that was held in Stockholm, Sweden. It was at this conference that environmental education was declared a "tool" to address global environmental problems. At that time, the United Nations Education Scientific and Cultural Organization (UNESCO) and the United Nations Environment Program (UNEP) made three important declarations that guided the progress of environmental education. These were the Stockholm Declaration, the Belgrade Charter and the Tbilisi Declarations.

The Stockholm Declaration of 1972 with its seven proclamations and twenty-six principles was created to inspire and guide people of the world in the preservation and enhancement of the human environment (Reference). The Belgrade Charter of 1975 was the Stockholm Declaration which was improved upon by goals, objectives and guiding principles of environmental education programs. Its purpose was to draft concepts and visions for Environmental education (Eneji, et a., 2017). Lastly, the Tbilisi, Declarations and recommendations of the 1977 Intergovernmental Conference on Environment did in many ways formalise the field of environmental education (UNESCO, 1978). At this conference, goals, objectives and guiding principles of environmental education, which many environmental educators still use today, were laid down.

Later in 1987, another landmark was seen in the history of environmental education. The World Commission on Environment and Development published the Brundtland Report which is also known as "*Our Common Future.*" This report enhanced the concept of sustainable development where the concept of environment and economic growth were seen as interdependent phenomena. Tilbury (1995) noted that increasing concerns over environment and development problems meant a greater support for an educational approach that would address not only immediate environmental improvement but also include educating for sustainability. The Brundtland Report defined this development as "meeting the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987).

The goal of obtaining sustainability was further supported at a United Nations conference in Rio de Janeiro in 1992. Among the aspects of this conference was Chapter 36

of the agenda 21 whose focus was "reorienting education towards sustainable development; increasing public awareness; and promoting training" (Chapter 36 Agenda 21).

Many other conferences have been taking place to refine and position environmental education in pursuit for environmental protection. For example, in 2005, Centre for Environment Education (CEE), an agency for implementation of education for sustainable education in India, held the Education for a Sustainable Future Conference in Ahmedabad, India, where more than 800 learners, thinkers and practitioners met (Sarabhai et al., 2007). The result of this meeting was the production of the Ahmedabad Declaration on Education for Sustainable Development. In the same year, the National Environmental Education and Training Foundation (NEEF), an environmental organisation based in the United States of America, held its first National Environmental Education Week in April 2005. These and many other activities kept making the history of environmental education.

From this narration, it is clear that Environmental Education has been an integral part of human existence locally and internationally. Environmental Education has the potential of bringing different nations together as its goals are global environmental protection.

Aims of Environmental Education

According to UNESCO (2021), the following are the aims of Environmental Education:

a) to show the economic, social, political and ecological interdependence of the modern world, in which decisions and actions by different countries can have international repercussions. Environmental education should, in this regard, help to develop a sense of responsibility and solidarity among countries and regions as the foundation for a new international order which will guarantee the conservation and improvement of the environment.

b) to succeed in making individuals and communities understand the complex nature of the natural and the built environments. Further, to acquire the knowledge, values, attitudes, and practical skills to participate in a responsible and effective way in anticipating and solving social problems, and in the management of the quality of the environment.

The foregoing aims of EE as noted by UNESCO are slowly being achieved by EE practitioners, governments, learning institutions and other stakeholders. This is noted in the conservation efforts, sustained yield and environmentally friendly   practices that people and institutions are involved in globally. However, a lot still has to be done to sensitise communities on best EE practices that can help in achieving the much-needed environmental sustainability through mind set change.

Goals of Environmental Education

Simply put, a goal is an achievable outcome that is generally broad and longer term while an objective is shorter term and defines measurable actions to achieve an overall goal. Experts in EE, just like other fields set up goals to help achieve intended rational outcomes. For example, UNESCO and UNEP (1976) set up goals of EE to help measure the outcomes intended. According to UNESCO and UNEP (1976:2), the following are the goals of Environmental Education:

(a) *Awareness*: to help social groups and individuals so as to get an awareness of and sensitivity to the total environment and its allied problems.

(b) *Knowledge*: to help social groups and individuals so as to gain a variety of experiences in and get a basic understanding of the environment and its associated problems.

(c) *Attitude:* to help social groups and individuals achieve a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.

(d) *Skill:* to help social groups and individuals so as to acquire skills for identifying and solving environmental problems.

(e) *Evaluation ability*: to help individuals and social groups so as to evaluate economic, social, aesthetic and educational factors.

(f) *Participation:* to give social groups and individuals an opportunity to be actively involved at all levels in working towards the resolutions of environmental problems.

The foregoing goals of EE have helped in achieving teaching and learning outcomes in learning institutions and public. Knowledge about EE has helped leaners acquire a sustainable attitude towards the environment. Through these EE goals, skills are imparted in people that help appreciate and interact sustainably and prudently in management of environmental resources.

Application of Environmental Education to Society

The world is experiencing various environmental challenges such as climate change, global warming, poverty, deforestation, droughts, civil wars, floods, earthquakes, resource scarcities and depletion (Novo-Corti et al., 2017), among others. While some of the challenges and problems are naturally occurring, some of them have been induced and necessitated by anthropogenic activities. This has further led to the overexploitation of both renewable and non-renewable resources, and resource scarcities and depletion. Some of the environmental problems that are human induced require concerted efforts to address but, most importantly, they call for a mindset and behavioural change (Esteban Ibanez et al., 2020). Most environmental challenges are social-cultural problems (Novo-Corti et al., 2017) meaning that

they are mostly perceptual and behavioural problems. The world's environmental problems will not be solved by the same mindset that led to their existence in the first place as the solutions do not solely lie in technology and its advancements. Koger (2013) argues that the solution to the world's environmental problems and challenges lies more in the modification of people's behaviour and attitudes towards the environment particularly educational and psychosocial processes. The whole and core idea behind EE is the development of environmentally literate citizens in skills, knowledge, attitudes and, values (Carter and Simmons, 2010; Esteban Ibanez et al, 2020).

The United Nations Educational, Scientific and Cultural Organization (UNESCO, 2021) states that EE is vital in imparting an inherent respect for nature among society and in enhancing public environmental awareness. UNESCO emphasises the role of EE in safeguarding future global developments of societal quality of life (QOL). This can be done through the protection of the environment, eradication of poverty, minimization of inequalities and insurance of sustainable development (UNESCO, 2014).

Education is one of the most powerful tools that can be used to modify people's behaviours globally (Esteban Ibanez et al., 2020), hence making environmental education an indispensable and inevitable tool necessary for the achievement of quality environmental health. Carter and Simmons (2010) argue that EE enables the citizenry to ask questions about their surroundings and the world at large. This enhances the citizenry's awareness, grasp of and, understanding of environmental processes and systems, including human behaviour, values, and attitudes towards the environment in its totality (Cuelemans et al., 2015). Furthermore, environmental education enables the citizenry's ability to identify and formulate potential solutions to the world's environmental challenges and problems (Neaman et al., 2018) and to equally implement and monitor the progress or lack of.

All these points to the need for a total overhaul in people's attitudes towards the environment (Esteban and Amador, 2017). Now, more than ever before, the world needs to have a positive attitude and pro-environmental behaviours as the ultimate way of achieving sustainable development, conserving the environment and slowing down ecological scarcities (Duarte et al, 2017). Otto et al. (2014) argue that most environmental issues and problems are technical in nature. Education, particularly environmental education, is the key to achieving sustainable development (Neaman et al., 2018).

Environmental education can result in deliberate changes and choices for the environment that enables the current generation to conserve and preserve the environment (Jensen and Schnack, 2006). The quality of the environment at any given time is dependent on people's awareness and knowledge of their immediate surroundings and the wider

environment. According to Varela-Candamio et al (2018), environmental education is a powerful tool used to generate green behaviour across various social strata in society. Boyes and Stanisstreet (2012) assert that various actions and habits for the environment have had significant and positive environmental impacts in various parts of the world.

Green behaviour is the only way that the future generations will also be able to enjoy a good quality environment and experience fewer ecological scarcities which translates to a good quality of life for all lifeforms across the planet. Environmental education helps the citizenry to have a harmonious relationship with nature (Varela-Candamio et al, 2018), a relationship that guides people's comprehension of, behaviours, attitudes, and values towards the environment (Duarte et al, 2017). A better comprehension of the world and pro-environmental attitudes and behaviour also guides policy makers and shapes policy across various sectors of government (Akehurst & Afonso, 2012).

Educational institutions in society occupy a privileged position and serve as essential participants in environmental education as they are prominent sources of knowledge equally responsible for the mass dissemination of knowledge (Esteban Ibanez et al, 2020; Duarte et al, 2017). They are important agents of social-cultural change and add centres of value addition at both individual and societal level. These institutions are responsible for knowledge creation, skills development, behavioural and attitude changes (Ceulemans et al, 2015) that ultimately impact how society behaves towards the environment. Environmental education offered in learning institutions is a key factor in the learning and change in behaviour as students are motivated to become pro environmental (Esteban and Amador, 2017). Learning institutions are centres of innovation, change, knowledge acquisition, research into current problems and issues, problem solving among others. Environmental education aims at achieving changes in the students and ultimately society's interaction with the environment (Esteban Ibanez et al, 2020; Duarte et al, 2017). Learning institutions must develop policies that encourage achievement of environmental sustainability through EE.

Conclusion

Environmental destruction is caused by lack of education. This is not just academic or formal education but also traditional or indigenous education. Traditional and indigenous cultures live close to the land. Children in a rural set up should be immersed in traditional knowledge of sustainable environmental practices. City dwellers also need to be educated about how their lifestyle affects the environment in the city and outside. All groups of people need some form of education sensitizing them about the importance of the environment as a source of healthy life. More so, employees in environmental fields like biology, farming, forestry, waste management, need specialized higher environmental education. People must

learn that they are a part of nature, and should value it, and care for it. Therefore, in order to sustainably preserve our earth, Environmental Education is the way to go.

References

Akehurst, G. & Afonso, C.H. (2012). Re-examining green purchasing behaviour and the green consumer profile: new evidence. *Management Decision.* 50, 972–988.

Carter, R. & Simmons, B. (2010). *The History and Philosophy of Environmental Education.* Available at: https://cdn.naaee.org/system/files/harmony/files/carter_simmons.pdf [Accessed on 10/07/2022].

Cremin, L. (1976). *Public Education.* American Association of Colleges for Teacher Education, Washington, DC.

Disinger, J.F. (1985). What research says: Environmental Education's definitional problems. *School Science and Mathematics,* 85(1), 59-68.

Duarte, R., Escario, J. & Sanagustín, M.-V. (2017). The influence of the family, school and group on the environmental attitudes of European students. *Environmental Education Research*, 23, 23–42.

Eneji, C.V.O, Akpo, M.D. & Edung A.E, (2017). Historical groundwork of Environmental Education (Fundamentals and Foundation of Environmental Education). *International Journal of Continuing Education and Development Studies,* 3, 110-123.

Gough A. (2016). The emergence of Environmental Education: a 'history' of the field. *International Handbook of Research on Environmental Education* (pp.13-22)

Gough, N. & Gough, A. (2010). Environmental Education. *Encyclopaedia of Curriculum Studies*, 1,339-343). Sage Publications.

Holsman, R. (2001). The politics of Environmental Education. *The Journal of Environmental Education, 3*2(2), 4-7.

IUCN (1971). *Education and the environment.* Papers of the Nevada Conference of 1970 and the Zurich Conference of December 1971. IUCN Publication New Series, Morges.

Kearns, J. J. (2014). *Using Environmental Science Education to Empower Urban Youth to Overcome Environmental Injustices and Become Engaged Eco-Citizens.* Masters Projects *Capstones.* 28, https://repository.usfca.edu/capstone/28

Kharrazi, A. et. al. (2018). Addressing Misconceptions to the Concept of Resilience in Environmental Education. Sustainability, 10, 4682

Koger, S.M. (2013). Psychological and behavioral aspects of sustainability. *Sustainability*, 5, 3006-3008. https://doi.org/10.3390/su5073006

Neaman, A., Otto, S. & Vinokur, E. (2018). Towards an integrated approach to environmental and prosocial education. *Sustainability*, *10*, 583. https://doi.org/10.3390/su10030583

Otto, S., Kaiser, F.G., & Arnold, O. (2014). The critical challenge of climate change for psychology. *European Psychologist,* 19, 96-106. DOI:10.1027/1016-9040/A000182

Sarabhai, K.V., Pandya, M. & Namagiri, R. (2007). *Tbilisi to Ahmedabad, The Journey of Environmental Education: A Sourcebook.* Ahmedabad, India: Centre for Environment Education.

Tilbury, D. (1995). Environmental Education for Sustainability: Defining the new focus of Environmental Education in the 1990s. *Environmental Education Research*, 1:2, 195-212, DOI: 10.1080/1350462950010206

UNESCO (1978). *Intergovernmental Conference on Environmental Education.* Tbilisi USSR (14-26) October 1977. Final Report Paris.

United Nations Environment Programme. (1978). Intergovernmental Conference on Environmental Education, Tbilisi, USSR, 14-26 October 1977: final report

UNSESCO (2014) *Issues and trends in Education for Sustainable Development.* Paris: UNESCO. 2018. pp. 26, 27. ISBN 978-92-3-100244-1

Varela-Candamio, L., Novo-Corti, I., García-Álvarez, M. T. (2018). The importance of environmental education in the determinants of green behaviour: A meta-analysis approach. *Journal of Cleaner Production*, 170, 1565-1578, https://doi.org/10.1016/j.jclepro.2017.09.214