

# The Importance of Environmental Education: Teaching Sustainability in the Classroom

**Kakungulu Samuel J.**

**Faculty of Education, Kampala International University, Uganda**

## **ABSTRACT**

This paper explores the critical role of environmental education in fostering sustainability within educational settings. It emphasizes the interdisciplinary nature of environmental education, which integrates ecological, social, political, and ethical perspectives to address complex environmental issues. The paper highlights the foundations of sustainability, key concepts, and principles that should guide the development of curricula. By integrating environmental education across disciplines and employing effective teaching strategies, such as experiential learning, educators can instill a deep understanding and commitment to sustainability in students. The study concludes with an examination of assessment and evaluation techniques to measure the impact of environmental education on student learning and behavior, emphasizing the importance of lifelong learning and action-oriented approaches.

**Keywords:** Environmental Education, Sustainability, Interdisciplinary Learning, Experiential Learning, Curriculum Integration.

## **INTRODUCTION**

Environmental education is a interdisciplinary field that explores complex environmental issues, their causes and effects, and actions to address them. It bridges social, political, economic, and ethical aspects of the environment across scientific fields, while also teaching how to think critically, creatively, and reflectively. Environmental education encompasses environmental awareness, actions to protect the environment, and various disciplines and fields of study, as well as community involvement and social justice movements. Sustainable development is a policy goal that meets the needs of the present without compromising the ability of future generations to meet their own needs. Education for sustainability has a different understanding of issues such as development, poverty, community, and ethics than conventional education. Environmental education is important in today's world due to rising awareness of environmental issues like climate change, increased concern for future generations, and the need to create a new consumer culture [1]. Education for sustainability deals with these issues at their root. It is education that considers the whole system and the relations between its parts, such as political, economic, and ethical relations. It is important for educators to see the big picture, understand the interactions between social and environmental issues, and present this holistic perspective in the classroom. Environmental education must have real importance and relevance beyond the educational process itself and the societal values represented in it. Political and ethical decisions about how to behave towards the environment, such as economic growth vs. perpetual equilibrium and development vs. sustainability, should belong to the society, community, and individuals up to the level of governments and international organizations. Environmental education is a part of education for democracy [2].

## **DEFINITION AND IMPORTANCE**

Environmental education (EE) defines the principles in which education provides a fundamental approach to sustainability. To promote sound environmental practices, a new culture must emerge in which people see themselves as part of the environment and communities are empowered to take action. Environmental education is a process that fosters the attitude and behavior changes needed to create such a culture. It

encourages critical thinking, promotes understanding of the environment and also promotes awareness of global environmental issues [3, 4].

Environmental education can address fundamental capacities and competencies that may empower individuals to understand the environment and change their behavior in a constructive way. In this view, environmental education is seen as a lifelong learning process that starts from an early age. Understanding, awareness, concern and behavior towards the environment develop and might change progressively throughout life. Environmental education requires a long-term commitment at all levels of education. A flexible and comprehensive framework is needed for environmental education internationally, nationally, regionally and locally [5].

### **FOUNDATIONS OF SUSTAINABILITY**

Sustainability is founded on six interrelated, essential ideas. The interaction between naturally occurring earth systems and human activity has wide-ranging social implications. These social implications can affect human wellbeing, longevity, and rights, and will often be distributed unequally. The modelling and analysis of socio-economic sustainability is an inherently interdisciplinary activity. Sustainability encompasses the necessity of maintaining intergenerational equity with regard to resource depletion and environmental degradation. A holistic, multi-scaled understanding of sustainability cannot be obtained within the confines of any one or even several disciplines. The sustainability paradigm encompasses a constellation of ideas that models and analyses the outcome of the inevitable interaction between naturally occurring earth systems and human activity upon those systems. This modelling and analysis has wide-ranging social implications, which can affect human wellbeing, longevity, and rights, and therefore can be highly commodified and political. Moreover, these implications will almost inevitably be distributed unequally, often with the most severe impacts occurring to groups least able to respond to or mitigate those impacts. Therefore, seriously putting sustainability principles into practice is likely to embrace, and need to be justified in terms of, ethics / philosophy, politics, economics, geography and earth systems science [6].

### **KEY CONCEPTS AND PRINCIPLES**

Key concepts and principles essential to sustainability are elucidated. A principal aim has been to broaden the concept of sustainability from the traditional strong or hard sustainability definitions of the Brundtland Report and its emphasis upon environmental concern, economic betterment, and principles of inter- and intra-generational equity. Ideally, this consideration of the interplay of the ecological, social, and economic dimensions of sustainability is a foundation on which to build learning on systems thinking, collective action, and a sense of place. Recently, these educative goals have been branded environmental education for sustainability. Having a clear grasp of such concepts and principles is strongly recommended for those contemplating the role of teaching and learning about sustainability reasoning. Clear definitions of sustainability offer a richer learning framework in which to build personal, social, and global environmental responsibility. Sustainability is often described as minimizing or preventing negative effects on the environment (i.e., pollution, desertification, climate change), but such a narrow view is restrictive. An ecological view widens the focus to include a “balance” amongst socio-political, economic, community, and biophysical systems/climate (if only in response to global warming). Broadly, life on earth can be characterized by interdependent networks of ecological processes (e.g., energy flow, nutrient cycling); resources (water, soil, biological, non-biological); and social constructs (laws, customs, mores). Too often, the social/cultural aspects of sustainability are rendered as afterthoughts. At a more naïve personal level, principles of sustainability may be pedagogically framed as “the 4 Rs”: Reduce waste; Recycle and reprocess resources. Reuse materials. Recover resources, and replace materials with sustainable (scavenged, organic, renewable) resources [7].

### **INTEGRATION OF ENVIRONMENTAL EDUCATION INTO CURRICULUM**

This facet of environmental education, the manner/s by which it can be seamlessly integrated into the curriculum, is examined, allowing such an approach to strengthen and broaden curricular concerns in addition to fostering a holistic approach to learning. Environmental education or issues can be incorporated into classes such as English, mathematics, science, social studies, and the arts, yet very few teachers are doing so. Some broad environmental issues incorporate many concerns, such as global warming/change, biodiversity preservation, overpopulation, hunger, and endangered species [8]. Additionally, while some concerns, such as pollution, incorporate many topics such as groundwater contamination, littering, and smog, each concern can be broken down into smaller components. (1) the incorporation of environmental education into the curriculum through an infusion approach; and (2) the incorporation of environmental education into the curriculum through a multidisciplinary approach. Strategies for adopting environmental education in the curriculum are based upon findings and recommendations from research studies and journals. Moreover, studies on the incorporation of

environmental education into the curriculum and the perspective of teachers are comprehensively reviewed [9].

### **CROSS-DISCIPLINARY APPROACH**

An example of a cross-disciplinary approach of environmental education may involve subjects of mathematics, social studies, language arts, and science. For instance, problem-solving tasks involving math could include subjects of the knowledge of ecosystems, population growth, carbon, nutrient cycles, and natural resources. Development of skills in researching information on the aforementioned subjects to create a resource project could be the focus of a unit in social studies. Another example might be “simple energy transfer devices” in science and the framework of a speculative letter to President Clinton concerning a proposed law on stricter air pollution controls [10]. The cross-disciplinary approach not only accounts for the interconnectedness of concepts, it also demonstrates the relevance of environmental sustainability in virtually every academic subject area. Vocabulary used in writing about air pollution concerns could be developed in conjunction with a language arts unit (for instance, persuasive writing) or in a unit on social responsibility showing how caring for one’s surroundings can be viewed in other cultures. In the context of mandated basic skill testing, environmental concepts could be taught while students build their reading and writing skills. With a systems perspective, environmental education could fully embrace the idea of a cross-disciplinary approach, that provides more holistic learning opportunities for students. Moreover, effectively implemented cross-disciplinary units could transcend the simple seamless consideration of environmental issues at the same content area level [11].

### **EFFECTIVE TEACHING STRATEGIES**

When teachers instill knowledge and awareness of environmental issues, it must be taught in a manner that is conducive to effective learning. This paper scrutinizes pedagogical approaches that facilitate effective learning experiences. However, with the understanding of environmental education still being misunderstood or difficult to define by many, the research focused solely on experiential learning. Experiential learning was found to provide a deeper understanding and appreciation for student learning on topics concerning the environment, land, or sustainability. Hands-on experiences enable an understanding of a more complex subject matter, allowing the participants to formulate their own opinions based on first-hand experience rather than generalizations. Educational and teaching approaches that are used for non-formal learning should take place in informal settings that promote experiential education. The results indicate that environmental education in schools has been neglected in curriculum planning and implementation since other mandated subjects take priority [12].

### **EXPERIENTIAL LEARNING**

A powerful teaching strategy that environmental educators can leverage to instill lasting environmental values in students is experiential learning. Experiential learning provides opportunities for students to engage directly with the environment through hands-on and place-based experiences. Experiential education allows teachable moments to arise, promoting connections to ecological concepts and sustainable practices. Place-based education acknowledges the influence of geographic location on social, ecological, and cultural systems. Outdoor and experiential education are similar to place-based education in that they use local natural and cultural resources as learning tools. Outdoor education focuses on environmental sciences, adventure and risk awareness, personal development, and challenges posed by outdoor environments, while experiential education emphasizes the ways that people learn. Through environmental education programming, students are immersed in participatory and process-based learning. Participatory experiences nurture a connection to the local ecology and can lead to lifelong stewardship and advocacy. Many unique and diverse environmental education programs in Georgia directly incorporate experiential learning and expand traditional K-12 curricula [13].

### **ASSESSMENT AND EVALUATION IN ENVIRONMENTAL EDUCATION**

Even though opportunities for environmental education (EE) have increased in recent years, space for environmental action is rarely evaluated in informal EE venues. However, the non-formal/local education setting offers unique possibilities for greater focus on environmental action. Therefore, this study analyzes discussions on EE principles and the action-component of the environmental education model to contribute to interpreting education in local museums with regards to environmental action. The EE quality of a local museum’s learning space regarding environmental action is examined. The study draws from a wider EE project and focuses on the material of one Finnish local museum. Overall, the study adds to the understanding of the action-part of a broader EE model in non-formal educational settings. Environmental education is often defined, according to the Tbilisi Framework, as a lifelong process and active learning. However, in Finland, there has been an increase in environmental education initiatives/educational programs/activities in non-formal settings (museums, workshops, public events), but the qualities of these initiatives with regards to (environmental) action and participation are under-

researched. Non-formal education settings provide space for greater focus on education and action fittings larger interests, views on participation, and knowledge about education outside of the control of official educational regulation [14, 15].

## CONCLUSION

Environmental education is essential in preparing students to understand and address the environmental challenges of the 21st century. By incorporating sustainability into the curriculum through interdisciplinary and experiential approaches, educators can foster critical thinking, ethical reasoning, and a sense of responsibility toward the environment. The integration of environmental education across all levels of education is crucial for developing a culture of sustainability that empowers individuals to take informed actions that contribute to the well-being of both current and future generations. Effective assessment and evaluation of environmental education programs are necessary to ensure that these initiatives are successful in promoting lasting behavioral changes and a deep-seated commitment to environmental stewardship.

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