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Significance of Biodiversity in Higher Education: A Review

Meenakshi Dheer* and Aakriti Chauhan

Faculty of Agriculture, Vivekananda Global University, Jaipur

Abstract

The variety of life on Earth and its biological diversity is commonly referred to as biodiversity, or includes the variability of genera, species and ecosystems, and is essential for maintaining the basic processes on which life depends. The number of species of plants, animals, and microorganisms, the enormous diversity of genes within these species, and the different ecosystems on the planet, such as deserts, rainforests, and coral reefs, are all part of a biodiverse Earth. Habitat destruction and degradation to meet development and infrastructure demands could destroy millions of hectares of land globally by 2024 and drastically reduce biodiversity. At least 40 percent of the world's economy and 80 percent of the needs of low-income people come from biological sources. Establishing. Furthermore, the richer the diversity of life, the better the opportunity for medical discovery, economic development, and adaptive responses to such new challenges as climate change. Some of the conservation methods today include biodiversity parks, biosphere reserves, national parks, and nature reserves. These have helped in saving many species of flora and fauna in the interiors of the forests. Efforts to protect nature, however, take place at a different pace, as environmental degradation occurs. Actions such as the establishment of gene banks, germplasm conservation units, and botanic and zoological gardens have also helped save species that have become extinct. However, these methods could work better because species are placed outside their natural interaction networks. Most of the world's biodiversity will continue to exist outside of protected areas, and many protected areas also include farmed land. There is an urgent need to measure biodiversity across habitats and assess the suitability of these habitats for biodiversity conservation.

For the preservation of biodiversity in higher institution, Biodiversity parks can provide an excellent opportunity to improve the quality of life and save beautiful creations of nature that are disappearing. It will not only helpful to preserve biodiversity, but also enhance the opportunity for research and education, recreation, tourism and sustainability in higher education institutions.

Introduction

According to research and organizations, biodiversity refers to the variety of life forms on Earth, including microbes, plants, animals and other organisms [1, 2]. The Biodiversity Park with its diverse flora and fauna is the perfect tool for the development of conservation education, which ultimately improves the quality of the environment and the ethics of nature conservation. In a wide range of fields related to field biology, nature conservation and environmental education, biodiversity parks serve as living laboratories. Biodiversity protection is increasingly coming to the fore in national and international agendas. The Convention on Biological Diversity (CBD) has established biodiversity as a critical asset that must be protected to ensure our well-being and that of future generations [3]. During 2012, the Rajasthan State Biodiversity Board decided that a Biodiversity Park was created at all the Divisional Headquarters in the state. This Biodiversity Park will be an essential and convenient place for the education of students, environmentalists, scientists, scientists and staff of the Department on Biodiversity. Education has been recognized as an essential tool for achieving sustainability and protecting biodiversity by transforming human attitudes towards nature (Ehrlich and Pringle, 2008) [4]. It further depends on communication, education and awareness strategies to ensure that "everyone understands the value of biodiversity and what steps they can take to protect it, including changes in personal consumption and behaviour" (SCBD, 2010) [5].

Higher education ensures that the next generation of decision-makers will be able to respond to global societal and environmental needs [6]. Increasing pressure on educational institutions in recent years has led to a broadening of the focus from the traditional model of teaching and research to a broader contribution to society [7]. In this sense, education has excellent opportunities to contribute by helping citizens to become well-informed, critical and competent and consequently able to act in favor of biodiversity [8] (Table 1).

Methodology

After a thorough review of the articles found, six main themes were identified:

1. The emergence of biodiversity as a global problem
2. Educational focus on biodiversity
3. Problems with the concept of biodiversity
4. Recommendations for teaching about biodiversity

The emergence of biodiversity as a global problem: With the emergence of biodiversity as a global issue around the 1970s, the issue of biodiversity came to the fore as conservationists became more aware of the need to halt the loss of biodiversity caused by growing human populations and harmful environmental changes [9]. At the same time, the importance of sustainable development based on economic expansion and industrialization that does not damage the environment is widely recognized. This led to the 1972 UN Conference on the Human Environment being held in Stockholm [10]. Subsequent events and meetings such as the Brundlant Report and the Global

***Corresponding author:** Meenakshi Dheer, Faculty of Agriculture, Vivekananda Global University, Jaipur, E-mail: meenakshi.dheer@vgu.ac.in

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Table 1: Fifty articles studied on the internet.

S. No.	Source	Findings
1	Fifty articles studied on the Internet (Google scholar, Sodhganga and Columbia University's online database. (http://www.columbia.edu/cu/lweb/).	biodiversity effects in higher education, biodiversity awareness among the peoples, biodiversity outreach, biodiversity education in cities, biodiversity and education for sustainable development, biodiversity and environmental education, and biodiversity communication.
2	Less than 12 articles	'biodiversity education', most addressing it as either environmental education or education for sustainable development (ESD).

Conservation Plan (1980) helped to incorporate and place the concept within (1985). The UN organized a report called "Our Shared Future" to address growing concerns about the depletion of ecosystems and natural resources. Most importantly, the group recommended that governments explore the possibility of adopting a species treaty that would adhere to the principles of "universal resources"[11].

1992 was a significant year for the environment and biodiversity in this regard. Two very important and legally binding agreements, the Convention on Climate Change and the Convention on Biological Diversity, which were originally signed by 150 governments and now have more than 190 associated parties, were signed at the Earth Summit during the United Nations Conference on Environment and Development in Rio de Janeiro Brazil [12]. In order to achieve an economic development strategy that would not be motivated by ecological damage, but rather by the goal of preserving all biological processes that support life, both agreements sought a global commitment.

These goals are based on the understanding that biodiversity has intrinsic value and supports ecological functions while providing commodities and services that ensure our survival and well-being [13].

Educational focus on biodiversity: An educational focus on biodiversity [14] asserts that learning's primary goal, above and beyond any potential enjoyment, is to benefit us in the long run. By assisting students in recognizing changes in biodiversity in the natural world, such a method may also be characterized as education for a sustainable future. Found significant disparities in students' abilities to detect and distinguish distinguishing characteristics of species. They discovered that the growth of a student's capacity to recognize biodiversity is significantly influenced by tangible experiences with biodiversity, both in the classroom and in daily life. Assessed the students' extent of knowledge and identified their perspectives towards biodiversity and its protection and conservation. They studied and obtained data and information which were subjected to statistical tests. The students had a moderate knowledge level of biodiversity, with a mean score of 6.65 out of 10 items (SD = 1.50) also studied and revealed those learners do not only need a scientific understanding of biodiversity in order to perceive it as personally meaningful. Rather, they should also have the opportunity to relate this complex topic to their individual nature experiences.

This study pursues the idea that the biography of a biodiversity researcher can be used as a model for school students. Their study participants' biographical nature experiences are appropriate to build bridges between biodiversity and themselves. According to children learn about biodiversity by first studying the local flora and fauna. Therefore, early childhood (EC) teachers should be familiar with the local environment. Several studies had shown that student teachers had little knowledge of species when they first arrived at universities but that their knowledge significantly improved as they continued their education.

Problems with the concept of biodiversity: Biodiversity is a subject that may take more work to describe and teach, regardless of whether biodiversity education is undertaken through an EE or an ESD approach. The CBD and other international agreements have highlighted biodiversity, allowing various interpretations and values to be applied. Point out political and symbolic definitions of biodiversity and scientific. Accordingly, biodiversity can be seen as a natural resource, as the base for sustainability, as a product of evolution or as what drives the ecosystem processes that are also essential for human well-being, among other definitions. This poses the question of how educators should deal with the continuum of meanings for a concept that is not easily referenced empirically. Different education experts have referred to biodiversity as an ill-defined concept. Vague notions are multidimensional, challenging to define, and value- or normative-laden. They also have many different interpretations. In this way, and because of their intricate relationships, ideas like biodiversity or sustainability are complex for individuals to conceptualize. According to, biodiversity presents several difficulties. First, the idea of diversity comprises three distinct levels ecosystem, gene, and species and not everyone, not even educators, generally acknowledges all three.

Additionally, while students may only associate the topic with ecological concerns, the causes and effects of biodiversity loss are complicated ethical, economic, and societal problems. Finally, whereas "biodiversity hotspots" are often used to illustrate how widespread an issue biodiversity loss is, focusing on just a few localized regions ignores the fact that interactions at multiple scales (such as regional and global) can also have an impact on biodiversity These complexities could be challenging for teachers and students alike. Contend that such subtleties could be used as a springboard for understanding biodiversity.

Recommendations for teaching about biodiversity: Most of the articles we studied that discussed biodiversity education used either an EE or an ESD strategy. According to the notion of biodiversity is "ideal for ESD as it depicts the connection of ecological, economic and social challenges and demands the learner to take into account multiple perspectives to arrive at balanced opinions." Education on biodiversity would support the creation of knowledge that could be used to address issues in various contexts under an ESD strategy. The student would have the chance to hone his or her analytical abilities and broaden their understanding of biodiversity's scientific and non-scientific facets. They considered the right atmosphere for the conversation. Others have advocated for defining key themes that concentrate on various facets of biodiversity and act as a framework for educators. For focuses on four key topics: diversity of ecosystems (wilderness, cultivated landscapes, and urban landscapes), ecosystem services, climate change and the future, and consumption and lifestyle. A biodiversity education would help people: - Learn the various meanings, interpretations, and applications of biodiversity and their own cultural, spiritual, and economic legacy. - Recognize how human actions impact biodiversity and be aware of its importance in their own surroundings and how they interact with it.

Conclusion

We conclude that biodiversity education overall faces four main challenges. The first challenge is to specify an approach to biodiversity

education and to understand how the nature and tactics of EE and ESD programs can influence biodiversity education. Many educators agree that environmental education (EE) is a multidisciplinary approach to education that emphasizes nature, the environment, and society as interdependent and inseparable entities. However, it has also been argued that EE needs to be more environmentally focused and demonstrate synergies that lead to environmental change. However, ESD emphasizes the links between societies, the economy and the environment and is considered a more comprehensive approach as it also takes into account issues of equality and morality as well as new ways of thinking and learning. However, it can be challenging for schools and teacher training to embrace sustainability and its transdisciplinary application. Although some biodiversity education initiatives claim to be a combination of activities and mechanisms from both EE and ESD, conceptual disagreements about which perspective is more appropriate for education can cause problems in determining the message and approach to be used. A second problem is the difficulty instructors and students have in dealing with an idea that is considered vague. Moreover, due to its multifaceted nature regarding social, economic and environmental relations, it is challenging to teach students this idea clearly and relevantly. Spreading the right information through non-formal education and communication tactics about biodiversity can help raise awareness and inspire all spheres of society. A number of authors cited in this article have suggested that education should focus on increasing contact with nature in childhood and youth through various activities, given that most people he lives in an urban area, where the effects of urbanization have changed ecosystems and, consequently, people's relationship with nature. Humans became more interested in nature through this early contact. These four issues represent some of the challenges that need to be overcome if the level of public awareness, awareness and understanding of biodiversity is to be increased and if targets such as those set out by the CBD are to be met. Based on these challenges, biodiversity education should lead students to understand and analyze the different meanings and dimensions of biodiversity. This would enable students to develop critical thinking skills about biodiversity and its conservation. Students who have these abilities will be more empowered and able to act on their interests and concerns.

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