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Empowering India's Future Through Green Education: A Pathway to Sustainable Development

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Abstract

India's environmental problems like pollution, deforestation and biodiversity loss in on an increasingly alarming front. To this view, green education, or more commonly known as environment education, seems to be an immediate solution. 1.3 billion people India face environmental issues due to urbanization, industrialization and resource depletion. This article talks about the state of green education in India today, its importance and challenges. Despite Green Schools Programme and National Green Corps there are many issues like curricular integration, teacher training and resource constraints. Many schools especially in rural areas lack resources and infrastructure to provide comprehensive environmental education. Environmental education is being taught theoretically which reduces its application in real life. To increase the impact of green education in sustainable development this study emphasizes the need to address these issues. It means experiential learning, critical thinking and student involvement in environmental problem solving are part of green education. It also urges for more collaboration between public and private sector to provide a strong foundation for environmental education. India can address its most pressing environmental issues and promote long-term sustainability by raising an eco-conscious population through better green education.

Keywords: Environment, Education System, Green Education, India, Sustainable Development

Introduction

Sustainable education has gained worldwide attention and nurtured consciousness among the people. Green education has turned up and as a foundation to intensify the practices of the same. Environmental education tends to provide a fuelling factor to increase awareness, spread knowledge and encourage sustainable practices. The main objective of green education is to educate students about environmental issues and to adopt sustainable practices which will equip the future generation with necessary resources to tackle the environmental challenges of today and tomorrow. Green education gives young people the opportunity to build a more sustainable future, and contribute towards the greater good of the society.

The process of offering quality learning opportunities to improve awareness, knowledge, comprehension, and

abilities as well as to bring about the intended changes in how humans interact with their natural and artificial surroundings is known as environmental education. The goal of environmental education is to affect behavioural shifts. The information acquired via environmental education causes a shift in an individual's attitudes and views. Here are some definitions to assist you understand this subject.

Students have an essential chance to engage with real-world issues outside of the classroom through environmental education. They might learn the skills necessary to be creative problem solvers and tenacious advocates, and they could see the link between what they are learning in class and the intricate environmental issues that our planet faces.

In India, the need for ecologically sustainable education has increased incrementally. The nation's rapid urbanization and industrialization are contributing

to serious environmental problems. A comprehensive strategy embracing all facets of society, especially the educational system, is required to address India's current environmental issue. Issues like deteriorating water and air quality and natural ecosystems have an adverse effect on people's health and well-being as well as India's prospects for future growth. Green education should be given top most priority and should be part of Indian education system to address these issues and move towards a more sustainable living.

Establishing cadres of young children who work for environmental conservation and sustainable development is the goal of the National Green Corps, a significant MOEFCC project for raising environmental consciousness that was started in 2001-2002. NGC has gotten an incredible amount of support, and in just 14 years, it has grown to over 1,000,000 Eco clubs nationwide, making it one of the greatest conservation networks. This shows how important it is to raise environmental consciousness at the grassroots level. The program's success has been attributed to the special collaboration between the MOEF, state government agencies, and committed non-governmental organizations engaged in environmental education. This initiative, which is run by Eco-clubs established in schools that are NGC members, exposes schoolchildren to in-depth field experiences and offers chances for them to turn their ideas into creative action. In addition to fostering school-society contacts to raise awareness in the community, the program has a cascading impact and aims to refocus students' attention toward environmentally friendly attitudes and behaviours. MOEFCC is also working to create a Management Information System (MIS) to improve the NGC program's monitoring mechanism. This would make it easier for all stakeholders to access and share NGC information. NGC mobility and services would be ensured through interactive and innovative MIS reporting and monitoring.

No resources means learning is hard in rural schools. Students in environmental science which is mostly theoretical have very little opportunities to learn by doing. Although it's in the curriculum, environmental concepts are taught in a way that pupils can't relate to real life environmental problems. This theoretical approach hinders students to develop critical thinking and problem-solving skills to address complex environmental issues. Teachers with environmental studies training are very few. There's very little of them. Teaching about the environment is something many teachers are not familiar with. Many educators are not equipped to teach about environment. Teachers struggle to make environmental issues interesting for students if they are not trained themselves. May be educators

don't have resources or tools to implement innovative teaching methods, practical projects, field trips or real-life experiences which are essential to make environmental education interesting and practical.

Green education is the way to support sustainable growth in India. Since the country has many environmental issues, it is more important than ever to have young minds who understand these issues and care for the environment. If green education is part of schools, young people in India will be better prepared to deal with the country's environmental issues. Even after starting programs like Green Schools and NGC, there are still many problems to fix with resources, connecting subjects, and helping teachers grow. In order to overcome these obstacles and guarantee the success of Green Education in India, there is need for a straightforward and adaptable strategy, increased government funding, innovative teaching methods, and assistance from other organizations.

Review of Literature

Environmental sustainability is a major concern and to start with the change, the same must be incorporated at the ground level. This implies that the concept of green education is to be practiced right at school level targeted from primary schooling itself. Students must learn about environmental concerns and embrace sustainable habits through green education. The present status of environmental education in India, its obstacles, and its potential for sustainability are examined thoroughly at a section in this research article. The review of existing literature in this context attempts to provide an overview of India's green education, implementation issues, and future directions based on current research.

According to Filho et al. (2018), green education is the process of achieving environmental literacy. This includes environmental education's practical, emotional, and cognitive components to inform pupils about environmental concerns and motivate them to take sustainable action. With dynamicity of the world inclusive of its environmental layout, it becomes crucially important to infuse the concept and learning of the environments, its current status, and expectations in the future in order to generate consciousness among pupils. This will also enable them become aware citizens at a global level. (Lemons, 1992).

Having green education is the key to achieve Sustainable Development Goal 4 (SDG 4) which is to provide quality education and lifelong learning opportunities for all. SDG 4 mentions green education in education systems to achieve global sustainability. India has made good progress in integrating environmental education into its formal education system to meet global sustainability goals. (Chhokar, 2010). The government along with

multiple NGOs has launched several programmes to promote environmental education and sustainability in schools. The objective of these initiatives is not only to teach young minds about environmental issues but to instill eco consciousness that goes beyond the school walls and impacts larger communities.

Over the last ten years, green education has gained popularity in India due to the country's environmental crisis. India's growth is threatened by many environmental issues like deforestation, biodiversity loss and air and water pollution. So many initiatives have been started by government and different groups to include sustainability in school curriculum. Students' understanding of environmental issues has increased significantly due to initiatives like Green Schools Program and NGC (Chhokar, 2010). The objective of these programs is to develop groups of young environmentalists who are committed to protect the environment and participate in community-based conservation initiatives. Through activities like water conservation, waste management and tree planting, students in this curriculum get practical understanding of environmental issues and solutions. Similarly CSE has started Green Schools Program to assess schools' environmental initiatives and promote sustainable practices like rainwater harvesting, waste management and energy conservation. These initiatives support India's efforts to protect the environment and meet sustainable development goals. Despite these initiatives, India's green education system has many issues which hinder its effectiveness. Three main hurdles were identified - poor infrastructure, inadequate resources and unprepared teachers (Puri et.al, 2021). Though environmental education is included in the curriculum, teachers lack the specific training to teach environmental issues in an effective way. As a result environmental education is often taught in a superficial or informal way without depth to bring about long term change in mindset and behaviour.

The gap between policy and practice is concerning and equally alarming (Roberts, 2009). Though national policies emphasize on environmental education, they are not implemented or included in school's daily activities. The chances of green education to impact students' environmental knowledge and behaviour is reduced by the gap between policy and practice. Environmental issues should be included in multiple subjects rather than being confined to standalone subjects (Sharma and Kanaujia, 2020). By including environmental issues in science, economics and social studies this interdisciplinary approach will help students to understand how ecological, economic and social systems are interconnected.

Curriculum and teaching methods are the backbone of green education programs. Active learning methods like project-based learning, field trips and hands on activities have been found to increase students understanding of environmental issues and sense of responsibility towards the environment. PBL and experiential learning allows students to deal with real world environmental problems directly and make their learning more tangible and effective (Verma and Grover, 2021). Field trips for example allows students to see environmental issues first hand and gain a deeper understanding of ecological conservation. These active learning strategies helps students connect theory to practice and reinforces what they learn in the classroom.

Green schools which focus on sustainable practices in school operations and pedagogy is also catching up in India. Green schools are not just about teaching environmental values but also about living them (Ravindranath, 2007). These schools have environmentally friendly policies like using renewable energy, waste segregation, water conservation and reducing carbon footprint. By living sustainability green schools create an environment where students can see sustainability in action and reinforce what they learn in the class. The impact of environmental education goes beyond the classroom. Students are more likely to adopt sustainable habits in their personal lives and have an impact on their families and communities when they are given thorough environmental education (Roberts, 2009). This ripple effect shows the power of environmental education. Students who are informed about environmental issues become champions of sustainability and impact their peers, families and local communities. Involving youth in environmental issues is key to creating a sustainable mindset that can bring about lasting change. Also, green education impacts personal behaviour and has a big role to play in shaping sustainability priorities at national and global levels. Green education in India helps the country achieve global sustainability goals like Paris Agreement and UN's Sustainable Development Goals by educating citizens about environmental issues and awareness generation.

Significance of the Study

Green education is important for future generations to understand sustainability and environmentalism. Limited resources especially in rural areas is a major hindrance in implementing National Green Corps and Green Schools programme (Government of India, 2018; Centre for Science and Environment, 2019). Lack of teacher training is a major impediment in environmental education (Roberts, 2009; Puri et.al, 2021). Addressing these challenges requires community engagement,

innovative teaching methods and policy support (Ravindranath, 2007; Lemons, 1992). This study looks into green education in India, identifies the challenges and recommends for better sustainability outcomes.

This study on green education has the potential to promote sustainable development by addressing environmental issues through education. Industrialization and urbanization in India pollute the air, water, and biodiversity (Puri et.al, 2021). These issues affect health, the environment and millions of jobs. Through green education, children can learn about the environment and support sustainability. This study emphasizes class environmental education. Environmental literacy is useful for managing sustainable environments (Lemons, 1992). This study examines green education in India and identifies the implementation challenges to assist policy makers and educators in strengthening environmental education. The study also addresses the implementation issues of green education. We have to address challenges such as curriculum integration, resource constraints, and teacher training (Sharma and Kanaujia, 2020; Chhokar, 2010). This report offers solutions for creating practical and comprehensive environmental education programs. This research can influence state and federal policies. Implementing environmental education requires strong laws (Chhokar, 2010). This study based on real data can help stable and effective green education programs. The article emphasizes creative training, both state and private cooperation in the field of environmentally friendly education. Environmental education must be dynamic and inspiring (Verma and Grover, 2021). Government, non-governmental organisations and businesses need to provide resources and work together to promote sustainability (Sharma and Kanaujia, 2020). This study is significant as Indian green education promotes environmental awareness and sustainability. The study focuses on the concerns related to the implementation of green education to improve environmental education and promote sustainable growth and a healthy environment for future generations.

Objectives of the Study

The aim of this study is to explore and assess the current status of environmental awareness education in India, identify the barriers and difficulties faced in its successful implementation, and suggest ways to improve its performance to promote sustainable growth.

The objectives of the presented study are as below:

- To assess the need for integrating green education in India in response to environmental issues.
- To review current green education initiatives and programs in India across different sectors.

- To identify challenges in implementing environmentally sustainable education in the Indian context.
- To propose future directions for enhancing environmental education in India.

Through an attempt to attain the above-mentioned research objectives, the study seeks to offer in-depth insights and practical suggestions to enhance green education in India, ultimately playing a major role in the country's sustainable development.

Research Method

A thorough literature review was conducted to find out the current research, theories and frameworks on green education and sustainable development. This helped in establishing the conceptual framework and to identify the gaps in the existing knowledge. Various secondary sources were explored including existing quality publications to conduct the analysis to determine the progress made in promoting environmental education in India. Further, Government initiatives, NGO efforts and international collaborations were also explored. This complete, robust review and analysis led to resulting for this qualitative, descriptive study which helped to establish grounds for actionable efforts towards sustainable development through green education.

Results and Discussion

Importance of Green Education in India

In order to address global issues including climate change, biodiversity loss, and environmental degradation, green education focuses on raising knowledge of environmental issues and promoting sustainable practices. Given India's vast population and varied ecosystems, environmental education must be taught in schools. This initiative will further enable the young generation to participate in nurturing the environment with greater consciousness and responsibility.

Integration into National Policies and Curriculum – India's efforts to introduce environmental literacy into its education system has shown results. National Curriculum Framework (NCF) one of the major foundations for revolutionary context of education in India, in 2005, decided to include and incorporate environmental studies in its curriculum design. Further, the different operating boards also made such attempts wherein they included this discipline of education in the curriculum. Additionally, higher education institutes, to take forward the initiative, incorporated various course on environment and sustainability in their course structure. This helps create educated and aware citizens from the very initial stages of education itself.

Government Initiatives to Promote Green Education – Government holds great responsibility to bring ground level changes in the society. In context of green education among the communities, it is important for government to undertake initiatives that helps generate awareness and nurture consciousness among the citizens. Cleanliness, Waste Management, Hygiene Practices, Reuse-Recycle, Tree Planting amongst others are very impactful and significant attempts made by the Indian Government.

NGOs and Private Sector – Several private and non-governmental organizations offer educational programs to increase public awareness on environmental issues. Through corporate social responsibility (CSR) programs many businesses attempt to generously and directly contribute to environmental conservation by funding educational activities and creating content that promotes eco-friendly behavior. This partnership is necessary for environmental education to have more impact in India.

Challenges Faced by Green Education in India

Although India has come a long way in green education, there are still many roadblocks to its widespread adoption.

Limited Reach and Awareness – Challenges to extend the awareness and create nurturing attitude among the society, both at rural and urban level, holds critical aspect. Despite efforts to increase it through policies and initiatives, environmental education is useless for many students, especially those from disadvantaged areas. Students and teachers don't have a concept of sustainability. So, in many parts of the country, environmental education is ignored and hence no larger movement towards sustainability.

Resource Constraints – Another big hurdle is lack of funding and resources for a comprehensive environmental education program. Amongst physical and infrastructural resource constraints, funding constraints are also a big concern. This creates issues to starting up and sustaining an environmentally conscious atmosphere at the school level. Additionally, digitally advanced resources are also not sufficiently accessible making it difficult to provide adequate educational or study materials.

Curriculum Rigidity and Irrelevance – Education becomes effective for any discipline when there is a relation between theory and practice. Educational institutes often incorporate theoretical aspects in their curriculum, and leave out on practical approach or experiential aspect of it. This lack of bridging loses out on creating an impactful sight on the students and their environment consciousness.

Benefits of Green Education in India

Besides knowing about environmental issues green education has many benefits. It promotes environmental responsibility, critical thinking and is key to a sustainable economy.

Promoting Environmental Stewardship – Green education contributes significantly towards the society. Except for the consciousness, it also builds critical thinking, problem-solving and approach of duties and responsibilities amongst the pupil. This helps in making a more sustainable economy.

Critical Thinking and Problem Solving – Environmental education students need to be able to think critically about tough environmental issues. By looking at issues like pollution, climate change and conservation, it develops critical thinking. Besides finding creative solutions to environmental problems, students are encouraged to develop problem solving skills that they can use in many areas. These skills are for a group of people who will handle future environmental issues.

Economic and Social Development – Students who get green education are ready for green technology and green jobs which are key to economic growth. Planet's future depends majorly on informed decision-making by society at large. Understanding and comprehensibility regarding the environmental, the problems faced, and potential solutions are most important to make both effective and efficient decisions.

Ongoing Green Education Initiatives in India

Alongside Governmental initiatives, various other organisations have also taken up the initiative to teach pupil and nurture environmental conscious behaviour and practice among students across all levels. These initiatives are of utmost importance to generate greater eco-friendly and sustainable outlook.

National Green Corps (NGC) – The Ministry of Environment, Forests, and Climate Change (EMVPM) launched the NGC initiative to raise student awareness of environmental concerns. The program involves establishing eco clubs in schools, holding environmental events, and promoting involvement in neighbourhood projects including garbage management, biodiversity preservation, and tree planting.

Eco-Schools Program – Run by the Center for Environmental Education (CEE) in India and managed by the Foundation for Environmental Education (FEE), the Eco-Schools Program is a global initiative to teach kids to be sustainable. The program has a seven-step approach to help schools work on initiatives related to energy reduction, waste management, water conservation and biodiversity conservation.

Swachh Bharat Abhiyan (Clean India Mission) – The Swachh Bharat Abhiyan was launched by the Indian government to encourage hygiene and cleanliness throughout the nation. This nationwide program promotes student involvement in sanitation, hygiene, and waste management projects. The proposal calls for constructing restrooms, educating people about hygiene concerns, and making sure schools adhere to sanitary procedures.

Green Skill Development Program (GSDP) – MoEFCC has started the GSDP program to make people aware of sustainable development and environmental protection. The program trains youth for green careers by teaching them waste management, biodiversity conservation and renewable energy, so that awareness of environment is linked to career opportunities.

Barriers to Effective Implementation of Green Education

While many green education initiatives have been launched, they are often hindered by structural, logistical, pedagogical and socio-cultural barriers.

Systemic Challenges – India's environmental education policy is not consistent, so it's executed in a fragmented and contradictory manner at different levels. Hence different regions have different levels of environmental education. Maintaining and scaling up these programs is further complicated by lack of funds and dependence on other sources. Policies are created but not uniformly implemented across all regions, especially in rural areas. Implementing these policies is a challenge for many districts and schools with limited administrative resources.

Logistical and Infrastructure Challenges – Many schools, especially in rural areas, face challenges like electricity, safe drinking water and toilet facilities. This makes it challenging to carry out environmental education initiatives that call for the required infrastructure and supplies. A few of the resources that schools lack to educate about the environment are books, digital resources, and tools for experiential learning. This makes it more difficult for teachers to give their pupils opportunities to learn in the actual world.

Socio-Cultural and Technological Barriers – Existence of the conflate in sustainability with customs and culture, some civilizations struggle to incorporate green education. Additionally, parents' and teachers' ignorance of the value of green learning has impeded its incorporation. A persistent issue with the use of technology in education is a digital gap between the urban and rural areas. Teachers may not have the necessary training to use digital tools for teaching environmental education and many remote schools lack the necessary internet infrastructure.

Conclusion

The paper emphasizes the importance of green education for sustainable development, particularly in light of India's distinct environmental problems and fast economic expansion. Environmental awareness at all levels, eco-friendly technologies, and sustainable behaviors must all be incorporated into the educational system, it is noted. This is necessary in order to develop a generation that is ecologically conscious and capable of supporting India's sustainable future. The report notes a number of implementation issues, despite the fact that there has been progress in incorporating green education into the curriculum. There are issues with training and resource scarcity in rural and impoverished places where access to high-quality green education is still limited by financial and infrastructure limitations. However, initiatives like NGC and eco-clubs have established a starting point for environmental education and laid the groundwork for its future development.

Engaging multiple stakeholders is necessary to create a strong foundation for green education. To create innovative teaching methods, pertinent training courses, and community-based projects that can enhance learning results and real-world application, the government, academic institutions, non-governmental organizations, and commercial sector must collaborate. The study also emphasizes the part teachers play in advancing green education. Investments in teachers' professional development and training are required to guarantee that they are prepared to provide high-quality environmental education. India can fully realize the potential of green education as a vehicle for sustainable development by addressing these shortcomings, which include enhancing teacher preparation, establishing collaborations, and closing access gaps. In this context the prevalent question is – what should be done. The answer to which is obvious – use of green education to empower people and communities to take action and address environmental issues.

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