

Leveraging Green Education to Promote Sustainability in the Future: An Analysis of Present Sustainable Model Practices in India

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Abstract: The United Nations Sustainable development Goals envisage the framework for improvising the lives of population around the World. In order to understand the recent changes in the climate and environment, it is our responsibility as a civilian to foresee the future of Our Planet Earth. Safety of the Environment have recently gained momentum in the society. And it always consequently imperative that those who are literate today have to safeguard and comprehend the depleting natural resources. The Awareness and education among the students can pave the way for Sustainable Learning which focusses more on skills that realize the challenges faced by the environment. It is important that environmental education need to introduce in the curriculum that goes beyond the traditional boundaries of learning. The future of our Planet undoubtedly are in the hands of our children. So it is high time to think about a drastic interventions in educational societies. The Academicians, Researchers, Administrators should incorporate the awareness regarding Sustainable activities to inculcate the culture in learning processes. The Sustainable culture should be the integral part of Courses. This research paper focuses more on the importance of Green Education, a future weapon for sustainable Revolution. Moreover it delves into the current scenario and challenges especially the current practices adopted by educational sector in India

Keyword: Sustainable Development, Green education, Sustainable Culture

1.INTRODUCTION

In recent days due to enormous industrial activities environment is in the verge of drastic changes which is reflecting in the economic society. Human interventions are the major cause behind the unprecedented environmental changes. According to Intergovernmental Panel on Climate Change (IPCC) 2023, reported the hastening pace of Climatic Change, with a rise in temperature which is much greater than industrial age. The air pollution

always remains the environmental risk in worldwide, which always contribute to the global warming by absorbing sunlight. The lessons of Green Education always divulge the skills, knowledge and attitude among the childhood to university education uphold the values to cultivate sustainable practices and address the environmental challenges. Even though it is in branch of environmental science but also practicing or integrating sustainable education in the every aspect of designing a curriculum, different practices adopted in educational institutions. Practices. It always equip the students with understanding and techniques required to live an eco-friendly life.

It is crucial to redefine sustainable development for higher education. The challenges concerning sustainability vary from country to country. To grasp the content of the Green Education Curriculum, it needs to be incorporated into the sector. Integrating Eco-sustainable practices and emphasizing green expertise in the curriculum will enhance the growth of learners and educators in terms of sustainability. To foster a sustainable culture of learning, it is essential to promote a necessary shift in the teaching and learning methods within the educational field. Greater emphasis should be placed on promoting environmental sustainability instead of focusing on environmental degradation. Green Education can seamlessly blend into a wide range of academic disciplines, spanning from environmental and sustainability studies to humanities and economics. It also serves as a key instrument in tackling the environmental challenges we encounter.

Therefore, it can be stated that green education is now essential in modern higher education. The present time is marked by various challenges concerning the environment and sustainable development. Therefore, it is essential for young individuals to be equipped to navigate a world filled

with such challenges. The Greening Education Partnership, initiated by UNESCO, is a global initiative that emphasizes a comprehensive system-wide strategy to assist nations in addressing the climate crisis through leveraging the vital role of education. Greening Education Partnership aims to bring together governments and various stakeholders such as inter-governmental organizations, civil society, youth, academia, and the private sector to work collaboratively. The goal is to provide well-coordinated and comprehensive efforts to equip all learners with the necessary knowledge, skills, values, and attitudes needed to address climate change and support sustainable development. UNESCO introduces innovative resources on World Environment Day, taking place on June 5, 2024, to promote environmental sustainability in schools and educational programs. Emphasizing the importance of empowering youth, these tools aim to actively involve young individuals in addressing the challenges posed by climate change.

2. REVIEW OF LITERATURE

The extensive literature available on green education underscores the widespread agreement on its significance in equipping upcoming generations to confront environmental obstacles. John H. Robinson is a proficient in the field of higher education and sustainability. He delves into the transformation of universities and colleges into sustainable models while equipping students to tackle global challenges. Robinson suggests that universities, being hubs of research and innovation, should set a prime example by incorporating sustainability into their teaching methods and campus activities. He advocates for institutional modifications that integrate sustainability into all areas of university life, spanning from research endeavors to administrative protocols. According to him “Sustainability education needs to be infused into all aspects of higher education, not just as a separate course, but as a lens through which every discipline can be viewed.” Green education, also referred to as environmental education, strives to cultivate students' knowledge of environmental matters and encourage the adoption of sustainable practices. Filho and colleagues demonstrated. In the spotlight of 2018, there was a wide range of aspects involved, such as gaining knowledge, shifting attitudes, and adjusting behaviors to support environmental preservation. The incorporation of green education

into the educational system is gaining more and more acknowledgment as crucial for promoting sustainable development. This literature review delves into the present status of green education in India, examining the hurdles it faces and its capacity to advance sustainability.

Lisa L. presented comprehensive information on environmentally friendly education in their book titled "Green Education: An A-to-Z Guide." Hummel and Robert L. Roth provides a thorough exploration of the different aspects of green education, offering practical guidance and valuable resources for educators seeking to integrate sustainability practices into their teaching. The authors provide a step-by-step guide for integrating environmental education into schools. This includes advice on how to design green curricula, establish eco-friendly classrooms, and engage students in sustainability projects. Although Greta Thunberg may not be an academic author, her speeches and writings, featured in works like *No One Is Too Small to Make a Difference*, have greatly influenced the perception of environmental education among youth and activists globally. Richard Louv, a journalist and author, explores the disconnection between children and the natural world in his work, particularly in *Last Child in the Woods*. He introduced the term "nature-deficit disorder" to illustrate the outcomes of this disconnection. David Orr, a prominent figure in the realm of green education, is recognized as a notable environmental educator and advocate. In the influential book *Earth in Mind*, Orr critiques the traditional educational system for its disconnection from the natural world and advocates for reuniting students with the environment. In the past decade, there has been a noticeable shift towards incorporating green education into the formal educational system of India. Mukherjee (2019) discusses how the Indian government and various non-governmental organizations have introduced efforts to integrate sustainability principles into school curricula. These endeavors align with the global Sustainable Development Goals (SDGs), particularly SDG 4, aiming to ensure access to top-notch education and continuous learning opportunities for all. Despite the efforts made, the transition to eco-conscious education in India encounters multiple challenges.

3.STATEMENT OF THE PROBLEM

The world is currently dealing with a variety of interconnected environmental issues that have profound effects on ecosystems, biodiversity, and human communities. These challenges arise as a result of factors such as population growth, industrialization, urbanization, and unsustainable consumption habits. The environmental challenges we are currently encountering are intricately linked and multifaceted. In order to address them successfully, it is crucial to have cohesive international initiatives that emphasize sustainable development, conservation, green technologies, policy reforms, and social equality. It is essential that educational institutions, governments, businesses, and individuals take immediate action to address these challenges and progress towards a future that is more sustainable and fair for all.

4. SIGNIFICANCE OF THE STUDY

India, being one of the largest and most populous countries globally, plays a pivotal role in steering global initiatives towards sustainability and sustainable development. The country's development path, alongside its social and economic hurdles, offers distinctive chances and considerable duties when it comes to incorporating sustainability into education. Achieving national development goals in India and contributing to global environmental and social well-being heavily rely on sustainable education. India's education sector is now acknowledging the significance of green sustainability, focusing on environmental stewardship and fostering a sustainable development-oriented education system. India, being one of the fastest-growing nations globally, encounters a plethora of environmental and social challenges. Therefore, incorporating green sustainability into education is not just a moral obligation but also a crucial practical requirement. India has the opportunity to cultivate environmentally aware individuals, promote sustainable advancements, and support global environmental objectives by integrating green sustainability practices into the education sector. The paper highlights the importance of innovative teaching methods and collaborations between public and private sectors in environmental education. According to Jain (2020), it is suggested that environmental education should be engaging and interactive. Collaboration among the government, non-governmental organizations, and businesses is essential to ensure the provision of resources and the

promotion of well-being. Sustainability, as described by Rao (2019). This study holds significance as it highlights the promotion of Indian green education. Promoting awareness of the environment and embracing sustainable practices. The study delves into the issues surrounding the implementation of green education in order to enhance its efficacy. Enhancing environmental awareness and advocating for sustainable development to ensure a thriving environment for generations to come.

5. OBJECTIVES

To explore the importance of introducing green education in India.

To assess the current initiatives and programs taking place in India.

To explore the challenges associated with the implementation of eco-friendly education in India.

To explore the future trajectory of environmental education in India.

6. RESEARCH METHODOLOGY

Extensive research was carried out to explore current studies, theories, and frameworks related to green practices. Education and sustainable development. This laid the groundwork for the inquiry, providing valuable assistance. Recognizing gaps in the current knowledge. The analysis of existing data unveiled the remarkable findings. Progress has been made in enhancing environmental education in India. Government initiatives alongside NGO endeavors. International partnerships have promoted the incorporation of sustainability principles into the educational system. The positive aspects are. Academic research provides solid evidence of how these activities affect students' environmental awareness and behavior. And statistical data analysis. The thorough examination of the available data underscored the importance of environmental education. To attain sustainable and eco-conscious development in India.

7. RESULTS AND DISCUSSIONS

This section showcases the outcomes of the research on green education in India and delves into the implications revealed by the findings. Prior research and conceptual structures.

8. IMPORTANCE OF GREEN EDUCATION IN INDIA

In India, the significance of green education, emphasizing sustainability, environmental consciousness, and social fairness, is on the rise. India, being one of the largest and rapidly growing economies globally, encounters various environmental obstacles including climate change, air and water pollution, resource depletion, and biodiversity loss. Moreover, with a burgeoning population, rapid urbanization, and a rising demand for resources, the call for sustainable practices becomes increasingly imperative. In this context, green education in India is a critical tool for shaping future generations of environmentally responsible citizens, leaders, and professionals.

8.1 Principles of Green Education

Green education has been attracting considerable attention lately for its incorporation of sustainability principles into teaching, learning, and school operations. It receives widespread acclaim for its ability to empower students with the necessary knowledge, values, and skills to tackle environmental issues. Nevertheless, as with any burgeoning field, green education encounters certain difficulties and critiques, notably related to its execution, availability, and comprehensiveness. Here are notable reviews and viewpoints shared by educators, students, policymakers, and environmental experts regarding green education.



9. CURRENT PRACTICES OF GREEN EDUCATION IN INDIA

9.1 Policy and Curriculum Integration

- Green Education with a focus on sustainability and the environment can be incorporated into different academic fields such as environmental science, economics, and humanities. In a history class, students could delve into the effects of industrialization on the environment, while in a math class, they could explore the carbon footprints associated with various transportation choices.
- Engaging in project-based learning offers students a valuable opportunity to collaborate on real-world projects like creating sustainable buildings, performing environmental impact assessments, or crafting waste-reduction plans for schools.
- The National Curriculum Framework (NCF) 2023 integrated Environmental Education (EE) as a vital component.
- Different state boards along with the Central Board of Secondary Education (CBSE) include environmental studies, across various stages of education.
- Higher education institutions provide specialized courses in environmental science and sustainability.

9.2 Initiatives of Government

- The National Action Plan on Climate Change (NAPCC) was initiated in 2008 to set forth India's approach in managing the effects of climate change and advancing sustainable development. One of its main goals is to establish a durable education system to address climate change.
- UNESCO's Education for Sustainable Development (ESD) initiative, which aims to integrate sustainability into all aspects of education. India is a key partner in this initiative, and UNESCO has collaborated with the Indian government to promote ESD at various educational levels.
- Swachh Bharat Abhiyan or Clean India Mission launched in 2014, is one of the largest cleanliness drives in the world, with a strong focus on waste management, sanitation, and environmental hygiene. The mission has been integrated into educational institutions to instill a culture of cleanliness and sustainability.
- National Green Tribunal (NGT) Established in 2010, the organization has played a crucial role in advocating for environmental

conservation in India. One of the responsibilities of the NGT is to collaborate with educational institutions to raise awareness about environmental laws, ecological equilibrium, and sustainable development.

- **Rashtriya Uchchatar Shiksha Abhiyan (RUSA)**, launched in 2013, aims to enhance the quality of higher education in India and includes provisions for promoting sustainability and green campuses in universities and colleges.
- **Solar Panels and Renewable Energy:** Government programs like Atal Mission for Rejuvenation and Urban Transformation (AMRUT) and National Solar Mission encourage educational institutions to install solar panels and adopt clean energy solutions to reduce carbon footprints.
- **Sustainability Education in Engineering Institutions:** The Ministry of New and Renewable Energy (MNRE) collaborates with engineering institutions and universities to offer specialized programs in renewable energy and green technology.
- **National Action Plan on Biodiversity (NAPB)** launched by the Ministry of Environment, Forest and Climate Change (MoEFCC), emphasizes the importance of integrating biodiversity education into schools and universities to increase awareness about the conservation of India's rich biodiversity.
- **National Clean Energy Fund (NCEF)** established in 2010, provides financial support for initiatives promoting clean energy technologies and sustainability education. The fund encourages educational institutions to undertake research, development, and training programs in green technologies.
- **Green Schools Program:** Many states have launched Green Schools programs that encourage schools to adopt eco-friendly practices such as water conservation, tree planting, and waste recycling.
- **Sustainable Development in Rural Areas:** States like Sikkim and Kerala have integrated sustainable agriculture and eco-tourism into their educational frameworks to promote environmental sustainability at the grassroots level.

9. Industry Initiatives

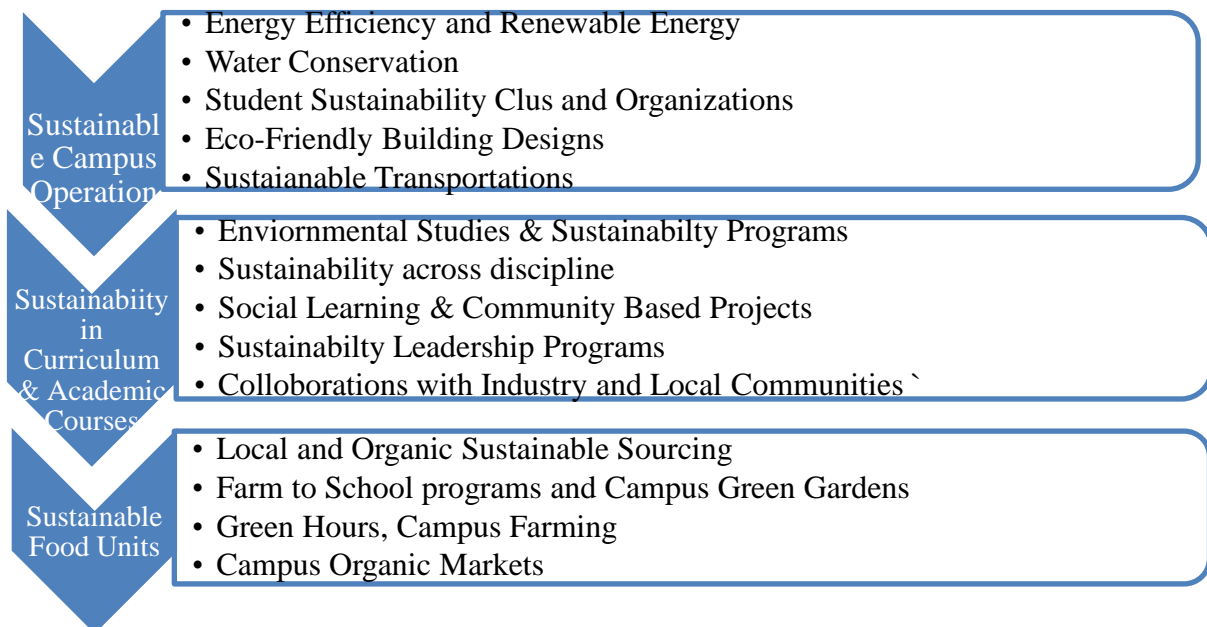
- **Tata Sustainability Group (TSG):** The TSG drives sustainability across all Tata companies and promotes green education initiatives to foster environmental stewardship.

- **Green Schools Project:** The Infosys Foundation supports the Green Schools Project, which focuses on incorporating sustainability and environmental conservation into the educational system. This includes providing training programs for teachers, creating green classrooms, and promoting eco-friendly practices in schools.
- **Wipro Earthian:** Wipro's flagship program, Earthian, aims to create awareness and provide educational resources for environmental sustainability. The program targets school and college students, encouraging them to engage with real-world environmental issues like climate change, resource conservation, and waste management.
- **TERI School of Advanced Studies:** This institution offers specialized courses in environmental management, sustainability, renewable energy, and climate change. It trains students to become leaders in sustainability and green technologies.
- **Greenpeace India,** an environmental NGO, is actively involved in environmental education and advocacy, encouraging sustainable living practices among students, professionals, and communities.

10. CHALLENGES TO IMPLEMENTING SUSTAINABILITY EDUCATION

- **Financial limitations** may arise when considering the implementation of sustainability projects, particularly in the areas of building infrastructure, renewable energy, and sustainable food systems, given the associated expenses. Schools operating with constrained budgets may find it challenging to maintain these initiatives without the assistance of external funding or government backing.
- **Lack of Government Policy Support:** In some regions, there may be insufficient policy or funding from national or local governments to support sustainability initiatives in schools and universities. This limits the ability of educational institutions to take bold action on issues like renewable energy infrastructure or sustainability education.
- **Curricular Overload:** Educators may face challenges in integrating sustainability into an already crowded curriculum. Teachers need proper training and resources to effectively teach sustainability across different subject areas without overwhelming students or straining existing lesson plans.

11. STRATEGIES TO BE IMPLEMENTED IN GREEN EDUCATION



12. FUTURE DIRECTIONS OF GREEN EDUCATION

The green education's future paths are expected to change due to the pressing issues of climate change, environmental damage, and the increasing demand for sustainable development. Education in green initiatives involves incorporating environmental consciousness, sustainable strategies, and eco-conscious perspectives into educational frameworks. The future of environmental education is expected to develop into a flexible, comprehensive system that empowers students with the abilities, information, and principles necessary to tackle urgent environmental issues. Global sustainability goals, technological advancements, and a growing awareness of the link between environmental health and human well-being will influence the direction of this progress.

12.1 Sustainability as a Core Value in Education Systems

- **Mainstreaming Sustainability:** In the future, sustainability could become a core value of every education system worldwide. It will no longer be treated as a standalone subject, but as a foundational principle that informs all teaching and learning across disciplines. Students will learn how their actions in various fields—be it business, technology, healthcare, or the arts—interact with ecological systems.

- **Sustainability Standards for Schools:** Educational institutions might be required to meet sustainability standards in their operations and curricula, similar to how there are currently academic accreditation standards. Schools could be evaluated on their environmental impact, energy usage, waste management, and how they incorporate sustainability into their teaching practices.

12.2 Emphasis on Climate Change Education

- **Climate Literacy for All Ages:** Climate change education will likely become as fundamental as subjects like math and language arts. Understanding the science of climate change, its global effects, and the various ways societies can mitigate and adapt to it will be essential knowledge for all students.

- **Focus on Solutions and Resilience:** Future green education will place a greater emphasis on teaching students not just about the problems caused by climate change, but also on how to be part of the solution. This may include learning about renewable energy technologies, sustainable agriculture, climate justice, green design, and the social and economic aspects of climate resilience.

12.3 Integration of Technology and Innovation

- **Tech-Enhanced Green Education:** Virtual learning environments, online simulations, and AI-powered tools can help students understand complex

environmental concepts through interactive, real-time data. These technologies may allow for virtual field trips to ecosystems, access to global environmental data, and opportunities to collaborate with peers from different parts of the world on sustainability projects. Advances in technology will play a crucial role in the future of green education..

- **GreenTech Education:** Educational institutions might offer specialized programs in sustainable engineering, green architecture, and environmental technologies to meet the growing demand for green professionals. With the rise of green technologies—such as electric vehicles, renewable energy systems, and carbon capture solutions—education will need to prepare students for careers in these fields.

12.4 Increased Focus on Local and Global Sustainability

- **Local Action and Global Impact:** Future green education will stress the importance of local solutions to global challenges. Students will learn to apply sustainable practices within their local contexts (e.g., sustainable urban planning, local food systems, waste reduction initiatives) while understanding how these practices contribute to solving global environmental problems.
- **Global Sustainability Collaboration:** Students will have more opportunities for cross-border collaborations on sustainability challenges. They may work with peers from different countries on joint projects related to water conservation, biodiversity, or renewable energy. Global platforms for youth activism, like the UN's Youth Climate Summit, could become integrated into formal curricula, helping students engage directly with international sustainability movements.

13. CONCLUSION

Green innovation is at the intersection of digital technology and sustainable green initiatives, harnessing the potential and strength of the digital revolution. The intricate nature of the situation requires comprehensive plans to address digital infrastructure externalities like e-waste and prioritize carbon capture, all in order to encourage sustainable choices and eco-friendly digital solutions. Green education focuses on highlighting and emphasizing various activities, initiatives, and practices in education to raise student awareness on environmental issues, sustainable development

programs, biodiversity, and strategies for green energy conservation and preservation. Green education is needed to address the dual challenges of increasing climate threats worldwide and advancements in digital technology, in order to shape a sustainable future. The main goal of green education is to teach children to cultivate a mindset for learning, instill a sense of accountability, and equip them with the necessary skills for responsible actions in order to protect the environment for fostering green advancements and creativity in the digital realm. A curriculum suitable for all people in every field, allowing them to participate in problem-solving efforts that benefit both people and the planet. Providing education to young graduates and postgraduates to help them become decision makers in the field of green education will have a significant impact. Traditional education is no longer sufficient in today's world.

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