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Role of Education for Green Technology and Sustainability

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ABSTRACT

Today, the threat of climate change is more dangerous than ever. A waste society supported by those who consu me waste products is also responsible for creating chaos. According to Swiss Re, the global economy could lose 18% of its GDP by 20250 without security. The world was formed about 4.5 billion years ago and modern huma ns have been around for about 315,000 years. According to research by the World Wildlife Fund (WWF), more t han a third of the world's natural resources have been destroyed by humans in just thirty years.According to rese arch by the World Wildlife Fund (WWF), more than a third of the world's natural resources have been destroyed by humans in just thirty years. It shows how much we need the earth to support our way of life. If the impact is multiple, we "borrow" from the next generation. Ecological Footprint measurement was developed by the Glob al Footprint Network. We continue to drink these. at an increasing rate. We need approximately 1.75 planets to provide the resources we use today and to absorb our waste. By 2030 we will need two worlds.Sustainability ca n be defined as the long-term ambition for people to co-exist on Earth without depleting its natural resources. Ultimately, the goal is to create a better future for both people and the planet.Green Technology acts as a catalyst, propelling societies towards growth models that resonate with sustainability and long-term viability.Prime Minister of India is all set to launch a "new mass movement" against plastic use. Recognising the cultural and environmental importance of the river Ganga, the 'Namami Gange Programme' was approved by the union government.Moving away from technical or industrial skills, the Green Skill Development Programme was launched in June 2017 by the Ministry of Environment, Forest, and Climate Change. The national cleanliness drive - Swachh Bharat Abhiyan - is perhaps the most popular campaign relating to environment that the Indian government pulled off.Nationally determined contribution of India is there is requirement of 1 billion pro-planet people from 2022-28, reduce emission intensity of the GDP by 45% by 2030, 50% cumulative electric power installed capacity from non fossil fuel by 2030.Student has the potential to become reflective practitioners of social problems, presenting better alternative solutions to society. Teachers, staff, and students will start making small commitments to sustainability by applying the green education program's principles.

Introduction

Today, the threat of climate change is more dangerous than ever. A waste society supported by those who consu me waste products is also responsible for creating chaos. According to Swiss Re, the global economy could lose 18% of its GDP by 20250 without security. The world was formed about 4.5 billion years ago and modern huma ns have been around for about 315,000 years. According to research by the World Wildlife Fund (WWF), more t han a third of the world's natural resources have been destroyed by humans in just thirty years. It shows how m uch we need the earth to support our way of life. If the impact is multiple, we "borrow" from the next generation . Ecological Footprint measurement was developed by the Global Footprint Network. We continue to drink thes e. at an increasing rate. We need approximately 1.75 planets to provide the resources we use today and to absorb our waste. By 2030 we will need two worlds. Anthropogenic pollution resulting from activities such as waste, i ndustrial production processes and unsustainable agriculture causes great damage to fragile and problematic eco systems. Overhunting, deforestation, water and air pollution and hunger. Sustainability is important because it fo cuses on improving man's relationship with the environment by prioritizing the management and preservation of the world's natural resources for the profit of the next generation and the millions of species around the world. Human civilization creates and uses various technologies to support daily activities. Technology is limited and h as a negative impact on the environment and human development. Therefore, it is possible to use new, more eco logical and environmentally friendly technologies to support the daily activities of today's lifestyle. However, du

e to increasing knowledge and recent developments in the field of electronic control, new technologies have bec ome more efficient and consistent. These technologies are called green or clean technologies. If the concept of g reen technology is accepted and introduced into the life of every society, it will help achieve the Millennium Go al of making the environment better and improving it to survive successfully. By promoting sustainable trade, na tural resource conservation, environmental protection, social progress and equality, we ensure that every country 's people have access to jobs, food, energy, water, etc. We can protect and develop our natural resources to meet our needs.

What is sustainability?

Sustainability can be defined as the long-term ambition for people to co-exist on Earth without depleting its natural resources. Ultimately, the goal is to create a better future for both people and the planet. Experts generally agree that there are three dimensions or pillars of sustainability: environmental, social and economic. In the realm of sustainable development, Green Technology acts as a catalyst, propelling societies towards growth models that resonate with sustainability and long-term viability. It nurtures economic advancements that are intricately woven with considerations for social well-being and environmental health, ensuring a holistic approach to development that echoes with balance and future readiness.In a world grappling with the complexities of environmental degradation and the urgent cries for sustainable transformation, the significance of Green Technology unfolds as a beacon of hope and a pillar of innovation. Its relevance permeates multiple spheres of society, industry, and global ecosystems, marking it as a quintessential asset in the journey toward a sustainable future.

Green Technology stands as a guardian of environmental sanctity, promoting technologies and practices that aim to reduce pollution, conserve natural resources, and mitigate the adverse impacts of human activities on ecosystems. Through its various innovations, it fosters a harmonious relationship between technological advancement and ecological balance, ensuring that the strides of progress do not compromise the planet's health.

The journey with Green Technology is a continuous journey toward a sustainable future, marked by innovation, adaptation, and a collective responsibility to champion environmental stewardship. As we navigate the pathways of the future, Green Technology unfurls a road-map that is rich with opportunities, strategies, and visions aimed at enhancing the symbiosis between technological progression and ecological harmony.

What is Green Technology?

Energy harvesting is a green technology that authorizes small electronic devices to be supplied for perpetual operation. It enables wireless sensors to be integrated in applications that previously were not feasible with conventional battery-powered designs. Intermittent computing and scheduling are the two central.

Green Technology, or Greentech, is the frontier of innovation championing the confluence of technology and sustainability. So, what is Green Technology? It represents a diverse array of technologies and practices that resonate with the ethos of environmental stewardship, paving the way for sustainable development and conservation. It embodies a commitment to creating solutions and strategies aimed at mitigating the impacts of climate change, reducing environmental degradation, and fostering the efficient use of natural resources.Green Technology is the epicenter of a transformative shift towards cleaner, greener, and more sustainable modes of operation across various sectors such as energy, construction, transportation, and waste management. It nurtures the evolution of technologies and practices that strive to reduce carbon footprints, enhance energy efficiency, and promote sustainable living. At its essence, Green Technology encapsulates the spirit of innovation driven by a profound respect for the environment and a vision of a harmonious and sustainable future.

Defining Green Technology is same to exploring a vibrant landscape of possibilities that hold the promise of redefining our relationship with our planet. It is about envisioning a world where technology acts as a catalyst for positive environmental change, fostering a symbiotic relationship between human progress and environmental well-being. Through Green Technology, we unveil a realm where every innovation, every solution, and every step forward echoes with a commitment to nurturing a healthier, more sustainable world.

Green Technology is an orchestra of innovations playing across multiple sectors, each resonating with the tunes of sustainability and ecological harmony. It manifests its presence through various components, each contributing uniquely to the creation of a more sustainable environment. From the way we generate energy to how we construct buildings, manage waste, and facilitate transportation, Green Technology illuminates pathways enriched with

innovative strategies and solutions. Herein, we delve deeper into the realms where Green Technology flourishes, exploring its pivotal components and the multifaceted roles it play in nurturing a harmonious balance between technological advancement and environmental preservation.

The emergence of Green Technology has heralded an era of transformative impact, resonating across industries, societies, and global landscapes. It's not merely an integration of new technological tools; rather, it's a revolution that is recalibrating our approach towards sustainability, innovation, and holistic development.

1.1. Strengthening Industries

Green Technology acts as a harbinger of transformation within industries, encouraging a reevaluation and re-engineering of processes and systems to resonate with sustainability. Industries are propelled to innovate, adopting technologies that optimize efficiency, reduce waste, and minimize ecological footprints.

1.1. **Empowering Societies**

1.1. **Societies** stand to benefit immensely from the embrace of Green Technology. It fosters empowerment through the provision of clean energy, sustainable agricultural practices, and enhanced waste management systems, enriching community well-being and resilience.

1.1. **Protecting Biodiversity**

The transformative influence of Green Technology extends its arms towards the protection and preservation of biodiversity. By promoting practices that mitigate pollution and habitat destruction, it nurtures an environment where diverse species can thrive and flourish.

1.1. **Increasing Economic Stability**

Economies are strengthened and stabilized through the integration of Green Technology. It promotes a model of growth that is harmonized with ecological considerations, driving economic activities that are both prosperous and sustainable in the long term.

1.1. **Cultivating careful Consumption**

It plays a main role in reshaping consumption patterns, encouraging a transition towards carefulness and sustainability. Consumers are nudged towards products and services that echo the essence of responsibility and ecological consideration.Cultivating a society that is well-versed with the nuances of Green Technology is essential. Focus on education and skill development, tailored to nurture proficiency in sustainable technologies and practices, is crucial in building a workforce and society that resonates with the ethos of sustainability.

Collaborations and partnerships emerge as powerful tools in amplifying the impact of Green Technology. By fostering alliances across sectors, industries, and global boundaries, a collective synergy can be harnessed to propel the reach, adaptability, and effectiveness of green technological solutions.

The seeds of innovation in Green Technology are sown in the fertile grounds of research and development. Continuous efforts aimed at exploring new technologies, enhancing existing solutions, and cultivating a culture of innovation are essential in driving the momentum of Green Technology forward.

Review of Related Literature

Karmilah Abdullah & Jamilah Ahmad (2014), which states green technology is one of the alternatives to boostthe national economy without affecting nature. Ruzian Markom and Norizan Hassan (2014), green technology is based on the importance of using environmentally friendly equipment and reducing carbon emissions. Marmelo

V. Abante et al. discussed the needs to build up the TVET Schools student with Green Information Technology information over orthodox education and directed with Green Information Technology Teaching prospectus in Philippines.Kavita suryawanshi in her study has shown that Green ICT rehearses and consciousness is less amongst the scholars of the designated learning institutes in Pune India.Vânia G. Zuin et al. presented the newest viewpoint for learning and capability building on green chemistry and towards sustainable chemistry representing their vital role to transmute human resources, established and infrastructural sites in all subdivisions on a great scale, to create operative cutting-edge information that can be materialized in greener and more maintainable goods and procedures in a stimulating realm.

Role of Government of India for encouraging Green Technology

Prime Minister of India is all set to launch a "new mass movement" against plastic use. Recognising the cultural and environmental importance of the river Ganga, the 'Namami Gange Programme' was approved by the union government.

The Centre allocated a total of Rs 20,000 crore to conserve and rejuvenate the river. While there had been a number of other programmes to improve the state of river Ganga, the government stated that it was approaching the problem differently. It involved the people living on the banks of the river, and helped them attain sustainable livelihoods and feel the impact first-hand. It also roped in grass-root level institutions, including urban local bodies and Panchayati Raj institutions, to work for the same.

Key achievements of include creating sewerage treatment capacity, river front development and surface cleaning. The programme is being implemented by the National Mission for Clean Ganga (NMCG) at the national level and State Program Management Groups (SPMGs) at the state level. Moreover, 63 sewerage management projects are implemented in Uttarakhand,Uttar Pradesh, Bihar, Jharkhand, and West Bengal.

Moving away from technical or industrial skills, the Green Skill Development Programme was launched in June 2017 by the Ministry of Environment, Forest, and Climate Change. The national cleanliness drive - Swachh Bharat Abhiyan - is perhaps the most popular campaign relating to environment that the Indian government pulled off. Launched on Mahatma Gandhi's birth anniversary on October 2, 2014, the movement had people coming out to clean the roads across India.

Implemented as part of the Swachh Bharat Mission, the government claims to have built over nine crore household toilets and 32 states or Union Territories have been declared open defecation-free since October 2, 2014.

Indian government introduced Compensatory Afforestation Fund Act (CAMPA) in 2016. It also established National Compensatory Afforestation Fund and State Compensatory Afforestation Fund the same year. Under this act, any individual or organisation intending to use forest lands for non-forest purposes will be charged.

Achieving economic development, and ensuring a decent living for its people is crucial for any country. With growing consciousness about climate change and environmental degradation, and their combined debilitating impact on the world if left unaddressed, several countries have embraced the 17 Sustainability Development Goals (SDGs) adopted by the United Nations in 2015, with an avowed commitment to save the world.

As India's green energy sector prepares to leap forward, it is worth examining the landscape and charting out the path ahead. Reforms in this sector have been on-going for over a decade and the total installed capacity from renewable sources has tripled in the last eight years.

Launched under the umbrella of 'Sabka Saath, Sabka Vikas', the Aspirational Districts Programme focuses on participation of all in the nation's economy. There are 112 Aspirational Districts across the country. UNDP's appraisal shows that these districts have made more progress than non-aspirational districts. The UNDP also highlights the use of green technology for basic infrastructure development in Aspirational Districts. It showcases Goalpara, Assam, which used recycled plastic and geogrid technology to construct 183 km of green road. In fact, it is the first district in India to construct a green road. This has led to a large delta improvement with the establishment of over 400 habitations in the district with access to all-weather roads. Conventional electricity grids are difficult to extend to remote areas, and hence alternative solutions can be found in green energy technology. To make the most of India's green energy potential for its Aspirational Districts, two complementary interventions are imagined. The first is to boost the manufacture of green energy technology through Production-Linked Incentives. This will generate supply, increase exports of world-class green energy products, and create employment. The second is to install and commission small-scale green energy capacity across the Aspirational Districts. Its usage by the community will improve the quality of life, vitalize the local economy, and generate demand. All of this together will generate a cycle of socioeconomic growth. For green energy implementation,

Gumla, an aspirational district in Jharkhand, has already taken the first inspiring step. The installation of home based solar panels has enabled access to clean energy and reduced dependence on unreliable conventional energy. This has led the village out of darkness. Recent technological and policy developments have revolutionized this landscape. The new perovskite-based technology has an efficiency of nearly 30% and costs only one-tenth of the old technology, and hence is economically viable at smaller scales. the policy of Aatma Nirbhar Bharat has encouraged production of solar cell technology within India, leading to lower costs and product reliability.

Role of Education

Every nation's backbone is quality education, and it's a part of the Sustainable Development Goal, which seeks to ensure inclusive and quality education and encourage educational opportunities to everyone. Education is critical to the potential living standards of the people and the world's long-term viability. . Environmental education is the process of instilling and fostering environmental values, expertise, and awareness. There is a need of creative technologies in the manufacturing of cars and heavy vehicles to make transportation safer and more convenient. Academicians have the critical importance in this respect for developing and molding students for this format. New technologies will aid in the dissemination of green consciousness and make it more practical and available for everybody. The reliance on traditional energy-generation methods must be phased out. Green aspects must be included in any field, such as design, engineering, and product innovation. Green philosophy must be applied in order to grow and nurture world. Academicians and students can overcome the problem with their material, abilities, and experience by taking concrete steps toward this campaign. Green education fosters philanthropic ideals and generates enthusiasm among students. Universities and Colleges are leading major initiatives to help students develop expertise, awareness, and behaviors that can help them combat these issues. Academicians' position and duty in implementing, exchanging, and conveying knowledge and intelligence to their students are often critical. Green nanotechnology is having an effect on renewable technologies right now. It offers an alternative method for reducing and reusing waste materials without damaging the environment. It is based on the three R's: Reduce, Reuse, and Recycle.Developed educational systems have a critical role to play in implementing green thinking and green innovation since they are the hubs for disseminating information and actualizing ideas. To make the land possible and safe, instructors, leaders, administrators, and learners should shake hands with each other and strive to improve the use of electricity and more use of e-material rather than printed materials to reduce carbon emissions.Educational sustainable development has been described in the United States for the years 2005–2014. From primary school to higher education, a sense of values and a hope for the future world must be implanted. The United Nations Educational, Scientific, and Cultural Organization (UNESCO) has identified crucial points where education and literacy are at their highest levels. Higher education and academia play a critical role in ensuring sustainability and environmental conservation. Green technologies and the green economy, when used creatively, have the potential to become a strong correlation between society and its environmental issues.

School curriculums should make environmental awareness a priority. Being a teacher we should make the students use of plant -based biodegradable utensils (made up of soil and sal tree leaves), use furoshiki, a Japanese traditional wrapping cloth, is eco-friendly and used for wrapping gifts, carrying goods or as decoration. Students and entire school communities need to know about India's life initiative across the globe that aims to unite the people as pro-planet, uniting them all in their thoughts and functions on the basic principles of lifestyle of the planet, for the planet and by the planet.It is education which can make the students consider the social, environmental and economic impacts of consumption, buying greener products; consuming better, wasting less and having a more sustainable consumption, education could make the students initiate transitions towards a circular economy from today's take -make-use-dispose economy and education could make the students to rethink and restore confidence in public transport, including the procurement of more buses, the adoption of e-buses

Conclusion

Nationally determined contribution of India is there is requirement of 1 billion pro-planet people from 2022-28, reduce emission intensity of the GDP by 45% by 2030, 50% cumulative electric power installed capacity from non fossil fuel by 2030.Student has the potential to become reflective practitioners of social problems, presenting better alternative solutions to society. Teachers, staff, and students will start making small commitments to sustainability by applying the green education program's principles. Such a small benefit will result in a significant improvement in energy efficient and environmentally friendly administrative processes, as well as a reduction in waste production and carbon emissions.

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