Impact of Science &Technology On Society & Environment

[1]Sakshi Sharma & [2]Shubhangi Gupta

[1,2] Assistant Professor, Civil Department

Motherhood University, Roorkee, Uttarakhand

Abstract

Science and technology have become essential constituents of modern life. They surpass local boundaries and touches lives of everyone even mother nature too. Technology has contribute to the growth of industries or to the process of industrialization has affected not only the mother nature but the nature of the human being too. People in the process of getting modernized give more importance to science and technology. Despite the negative technology on environment, current rise in global concern for climate change has led to the development of new concept of environmental technology directing to the help solve some of the biggest environmental concern. Environmental technology is also known as green or clean technology. It refer to the development of new technology which could conserve, monitor or reduce the negative impact of technology on the environment and control the depilation of resources. Similarly, the way in which we use technology decides whether its effects are valuable or damaging for society. No doubt the technology has improved communication among people no matter how far they are from each other but somehow it have blurred the vision of human beings in making effects of difference between the real and fake face. The positive impact of technology on the environment can be the development of environmental technology such as renewable energy also known as green energy, smart technology to save the energy consumption, electric vehicle to limit carbon missions and carbon dioxide removal. This congress will explore more such areas and provide a platform to the researchers to share their creative ideas and research and thereby encouraging them to device dual purpose techniques which on one side could make life easier and on the other site renew or generate clean source of energy.

Keywords: Science, Technology, Environment, Impact, Green Energy,

Introduction

Science, ever since the time of the Arabs, has had two functions: (1) to enable us to know things, and (2) to enable us to do things. The Greeks, with the exception of Archimedes, were only interested in the first of these. They had much curiosity about the world, but, since civilized people lived comfort ably on slave labor, they had no interest in technique. Interest in the practical uses of science came first through superstition and magic. The Arabs wished to discover the philosopher's stone, the elixir of life, and how to trans mute base metals into gold. In pursuing investigations having these purposes, they discovered many facts in chemistry, but they did not arrive at any valid and import ant general laws, and their technique remained element. Science's evolution has been a boon to the globe, since humans have learned a great deal about the world they live in, including the activities they engage in. Furthermore, advances in science and technology contribute to bring about revolutions in a variety of disciplines, including medicine, agriculture, education, information technology, and many others.

The term "technology" refers to the actual application of scientific knowledge, as well as the apparatus and instruments that follow. We are in the midst of an era of fast transition, in which technological advancements are revolutionizing the way we live while also propelling us farther into the abyss of disaster, as seen by climate change and resource scarcity.

What is Science

Fundamentally, science is the methodical observation and experimentation of the structure and behavior of the natural and physical world. The study of science has progressed in tandem with human civilization.

What is Technology

Technology (which is basically derived from the Greek word *'technologia'*) is an art, skill or ability, which is used to create and develop products and acquire knowledge. Scientists used their knowledge to develop technology and then used technology to develop Science; so, because of this reason science and technology are an integrated term in today's world.

To grasp the relationship between science and technology, consider the following points:

- Contribution of Science to Technology
- Contribution of Technology to Science
- **Contribution of Science to Technology**

    Let us now understand how Science has contributed to Technology

1. **Science as a direct source of new technological ideas**

For example, innovation and development medical instruments; nuclear technology, radar system, etc.

2. **Science as a source of engineering**

The majority of the technical information employed in the development and design of tools and processes is the result of "engineering science. "contribution of Technology to Science

Consider the following points to understand the contribution of Technology to Science −

1. **Technology as a source of scientific challenges**

The advancement of technology provides the path for scientific research and progress. One of them, for example, is space science. Indirectly, technological advancement stimulates basic research in the realm of science.

2. **Instrumentation and measurement techniques**

Development of advanced instruments facilitated scientists to measure the distance between sun and earth, the intensity of sun's rays, the revolution of celestial bodies, internal problems of human beings, life of a bridge, etc.

Impact of science and technology on society

1. **Positive impact of technology on society**

Technology's development and use have helped societies in increasing productivity, expanding service accessibility, and improving overall well-being. Where have technological developments aided the most?

2. **Healthcare & wellness advancements**

Technology has the potential to significantly improve health and healthcare systems as we know them. From AI-powered clinical drug trials to enabling preventative patient monitoring to wellness solutions such as wearables, the possibilities are endless. We've seen technology fill gaps in healthcare during the pandemic. Telemedicine apps are the first step toward making healthcare more equitable and accessible to all people, regardless of socioeconomic status.

The widespread adoption of technology by both patients and healthcare professionals has enormous potential to improve the efficiency of public health entities. Advances in preventative health technology (such as wearables) can reduce overall healthcare costs by monitoring patients' status and detecting abnormalities earlier, allowing for faster response. Complex healthcare systems powered by AI analytics can more effectively distribute care and treatment. Virtual Reality Therapy is being tested on patients who have experienced severe trauma, as facing your fears again and surviving proved to be the biggest therapy leap for many.

I.   Education

Artificial intelligence can help students with disabilities determine the best way for them to learn efficiently and with tangible progress. Automation and systemization can solve the ultimate pain point for teachers across the globe: administrative tasks, which take a lot of their time

II.   Environment protection & smart cities

When asked how technology affects the environment, most people will say "very badly." Even though this was once true, public awareness of the importance of environmental protection has grown over the last decade, with technology being one of the first industries to jump on board.

Environmental startups (also known as "green startups") are developing sustainable solutions to use difficult-to-recycle materials, reduce waste, purify water, and monitor environmental changes to ensure a more sustainable future..

Another startup, Brickify recycles plastic waste into bricks that are resistant to water, fire, and heat and can be used for both: road construction and low-cost housing.

2.   Negative impact of science and technology on society

The negative impact of technology on society involves mass-produced products, with social media being the most frequently blamed. A plethora of research has been conducted on the subject, with social media being ranked as the number one source of misinformation, hate speech, and harassment on the one hand, and a source of isolation and depression on the other..

I.   Fake news & misinformation

Fake news and misinformation have been with us for quite some time, but with the tech advancements moving rapidly, people find it hard to keep up with what's true and what not. Social media platforms in general are struggling with content moderation. At the beginning of 2021, Twitter launched a pilot 'Birdwatch' Programme , aiming to build a community to help fight misinformation and fake news.

II.   Technology affects our sleeping habits.

Technology has undoubtedly influenced how we sleep. Many of us stay up far too late texting friends or scrolling through social media. Sometimes we're tired, it's difficult to put the devices away. How many of us have a habit of waking up in the middle of the night to check our phones? Both children and adults spend countless hours watching funny cat videos or other mindless entertainment. It's difficult to break free from apps that are purposefully designed to keep us hooked..Late night device use alters our brain's production of melatonin, the sleep hormone, making it more difficult to get a good night's sleep.

III. Technology promotes a more sedentary lifestyle.

This could be one of the most significant disadvantages of living in a device-filled world. Children who play video games or spend a lot of time online do not get as much physical exercise as those who do not. Technological advancements keep us glued to our devices, whether we're on the couch watching TV or holding a cell phone. What begins as a quick scroll through social media quickly becomes a spiral down the rabbit hole with no end in sight. The more time we spend on YouTube and Instagram, the less time we spend doing other things outside.Technology leads to neck pain and bad posture.

When you're slumped over your phone, it's difficult to sit up straight. As a result of not sitting up straight, many of us experience back and neck pain. We also do not hold our phones at eye level when looking at them. Instead, we lean over with our heads down to inspect it. All of this contributes to poor posture, neck and back pain, and occasional wrist pain as a result of our constant use of our devices..

Impact of science and technology on environment

The industrial revolution gave birth to new technologies with enormous power. From about 1760 to 1840, this was the transition to new manufacturing processes in Europe and the United States. This has been followed by continued industrialization and technological advancements in developed countries around the world, with the environmental impact of this technology including the misuse and damage of our natural earth.

These technologies have harmed and advanced our world in two ways:

1. Positive impact of science and technology on environment
2. Negative impact of science and technology on environment

1. Positive impact of science and technology on environment

I. Renewable energy

Renewable energy, also known as "clean energy," is energy derived from naturally replenished renewable resources such as sunlight, wind, rain, tides, waves, and geothermal heat. Modern environmental technology has enabled us to capture this naturally occurring energy and convert it into electricity or useful heat via devices such as solar panels, wind turbines, and water turbines, demonstrating technology's highly positive impact on the environment. Renewable sources now produce more than 20% of the UK's electricity, having surpassed coal as our second largest generator of electricity in 2015. EU targets indicate that this will likely increase to 30% by 2020. While many renewable energy projects are on a large scale, renewable technologies can also be used in remote areas and developing countries, where energy is often crucial in human development.

Renewable energy technologies such as solar panels and wind turbines are becoming more affordable, and government investment is increasing. Between 2007 and 2017, the number of rooftop solar installations in Australia increased from approximately 4,600 households to over 1.6 million.

II. Internet

Increased internet connectivity has enabled environmental technology as a result of the increased availability of Wi-Fi, Bluetooth, and smart sensors in buildings and cities. Experts predict that future cities will be places where every car, phone, air conditioner, light, and other device is interconnected, ushering in the concept of energy-efficient "smart cities."

The internet's technology further demonstrates the positive impact of technology on the environment because social media can raise awareness of global issues and global virtual laboratories can be created. Experts from various fields can collaborate remotely to share their research, experience, and ideas in order to develop better solutions. Furthermore, travel is reduced because meetings and communication among friends and families can be done virtually, reducing pollution from transportation emissions.

III.　Electrical vehicles

Electric vehicles have a positive environmental impact because they do not emit carbon emissions, which contribute to the "greenhouse effect" and global warming. Furthermore, they do not contribute to air pollution, making them safer for human health, animals, plants, and water.

2. Negative impact of science and technology on environment

I.　Air and water pollution

When harmful or excessive amounts of gases such as carbon dioxide, carbon monoxide, sulphur dioxide, nitric oxide, and methane are introduced into the earth's atmosphere, air pollution occurs. The primary sources are all related to technologies that emerged after the industrial revolution, such as the use of fossil fuels, factories, power plants, mass agriculture, and automobiles. Air pollution has a negative impact on human and animal health, as well as global warming, because the increased amount of greenhouse gases in the air traps thermal energy in the Earth's atmosphere, causing the global temperature to rise. Water pollution on the other hand is the contamination of water bodies such as lakes, rivers, oceans, and groundwater, usually due to human activities. Some of the most common water pollutants are domestic waste, industrial effluents and insecticides and pesticides. A specific example is the release of inadequately treated wastewater into natural water bodies, which can lead to degradation of aquatic ecosystems. Other detrimental effects include diseases such as typhoid and cholera, eutrophication and the destruction of ecosystems which negatively affects the food chain.

II.   Depletion of natural resources

Another negative impact of technology on the environment is resource depletion. It refers to the use of a resource before it can be replenished. Natural resources are those that exist without being created by humans, and they can be renewable or non-renewable. The most severe types of resource depletion are aquifer depletion, deforestation, mining for fossil fuels and minerals, resource contamination, soil erosion, and resource overconsumption. These are primarily caused by agriculture, mining, water use, and the use of fossil fuels, all of which have been made possible by technological advancements.

As the world's population grows, so does the degradation of natural resources. As a result, the world's eco-footprint is estimated to be one and a half times the earth's ability to sustainably provide each individual with enough resources to meet their consumption levels. Large-scale mineral and oil exploration has increased since the industrial revolution, causing natural oil and mineral depletion. When combined with advancements in technology, development, and research, mineral exploitation has become easier, and humans are digging deeper to access more, causing many resources to enter a production decline.

Conclusion

Technology has advanced in many aspects of our lives, making information more accessible, improving communication, and changing transportation, to name a few. While it is easy to sit back and enjoy the benefits of technological advancements, it is critical that we do not lose sight of their societal implications. Modern environmental technology has enabled us to capture this naturally occurring energy and convert it into electricity or useful heat via devices such as solar panels, wind turbines, and water turbines, demonstrating technology's highly positive impact on the environment.

References

1.Proudfoot, R. and Kelley, S. (2017). Can technology save the planet? WWF Australia https://www.wwf.org.au/ArticleDocuments/360/pub-can-technology-save-the-planet-30may17.pdf.aspx?Embed=Y(https://www.wwf.org.au/ArticleDocuments/360/pub-can-technology-save-the-planet-30may17.pdf.aspx?Embed=Y)

2.Visor, D. (2019). Electric car charging stations surpass number of fuel stations in less than 100 years since UK's first petrol pump installed. Nissan News. https://uk.nissannews.com/en-GB/releases/releasc2df391cdf0dd0c30a0575ffb50231f8-ukev-charging-stations-surpass-number-of-fuel-stations# (https://uk.nissannews.com/eGB/releases/releasec2df391cdf0dd0c30a0575ffb50231f8-   uk-ev-charging-stations-surpass-number-of-fuel-stations

3.Nunez, C. (2019). Climate 101: Deforestation. National Geographic. https://www.nationalgeographic.com/environment/globalwarming/ deforestation/#targetText=Between%201990%20and%202016%2C%20the,study%20in%20the%20journal%20Nature(https://www.nationalgeographic.com/environment/globalwarming/deforestation/#targetText=Between%201990%20and%202016%2C%20the,study%20in%20the%20journal%20Nature)