

Cape Cod Community College

The Effects of Technology

Isabella Roberge

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Professor French

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## Abstract

This paper examines the positive and negative effects technology has on its surrounding environment. Including the Earth's environment, communication, and the medical and science fields. Key examples of how technology is valuable to our everyday lives and the consequences that come with overuse and improper disposal will be discovered. The conclusion reached that if people find a balance between what is needed from technology and what is unnecessary, then the human race will not be consumed by technology altogether.

## Introduction

For years, we have been working to change technology in order to fulfill our needs. We may not know that technology is changing us and how we connect with the world. In many ways technology has proven to help improve medicine as well as increase environmental sustainability by decreasing the amount of paper produced. However, the more we rely on technology, the less aware we are becoming of our surroundings. For instance, when we are using our mobile phone while driving, we are unconsciously putting ourselves and others on the road in danger. Further, instead of preparing for a road trip and reading and interpreting a map, one would rather listen to a GPS (Global Positioning System) which is not always completely accurate. We have access to information much quicker with the use of our computer, but the cost comes in the negative impact such technology brings. One example is the lack of the skills with respect to

communication. As a result, we are social beings and have a constant need to communicate but not interact.

### Full Body

There is a growing crisis of global warming and technology has been proven to become beneficial to this dilemma. Svante Arrhenius, a Swedish scientist is known to be the first person to question the use of fossil fuels and how it would impact the environment (Enzler). This knowledge of global warming began in 1896 where its records have exponentially increased. Ever since the use of technology began, there has been a cut back in the number of trees chopped down for paper. This is because with computers and laptops, there is no need to print paper when people find it just as efficient to save their work online. According to the Analysis of Technology and Environmental Policy in section 2.2 “The technology innovation results in greater overall social benefit because the cost of reducing pollution has decreased and environmental health has improved” (Jaffe, Newell, and Stavins). By limiting the amount of waste produced, the overall benefit is exponential for the cleanup process of global warming. New technology provided options for how one distributes their waste. Reducing, cutting back on producing plastics that end up in the garbage bin. Reusing, creating stores that accept used clothes and sell them. Recycling, by allowing curbside pickup of recyclables are a few more examples.

Not only is technology useful in the department of disposing and saving trees but it also provides an option for renewable energy that helps to save money as well. Solar Energy

Fundamentals states that “Solar Energy is referred to as renewable energy and/or sustainable energy because it will be available as long as the sun continues to shine” (Sen,37). This technology is extremely essential for the environment, in that it is replenishable for as long as the sun is around. That statement cannot be said for the burning of fossil fuels which is another advantage of technology. Wind Power is a technologically friendly machine. “Due to its cleanness, wind power is sought wherever possible for conversion to electricity with the hope that air pollution because of fossil fuel burning will be reduced” (Sen,38). As a result, the technology used to create wind power is what is saving the environment currently from the burning fossil fuels. “Many aspects of economic development and environmental protection would not be possible without technology” (The Role of Technology in Environmentally Sustainable Development). Therefore, technology has proven to be a sufficient supplement to the needs of our warming planet earth.

Additionally, the use of technology has become increasingly needed in today’s society. Just about everyone in the year 2017 has their own cellphone and this helps to encourage better communication. Family or friends that live halfway around the world have the ability to see what you have been up to without even telling them. “With the net and the web, practice explodes and now theory drives toward a new science of human interaction” (Virtual Teams).

The more people that use the web and social media, the better chance of keeping in touch.

According to Virtual Teams “In four years, the number of adult Americans online went from 9

percent to 56 percent” (Virtual Teams). It is shown that there was an incredible spike in the use of technology within the four short years. This may be because once people grew accustomed to the new acquisition, it was nearly impossible to live without it.

Technology also helps people to remember important appointments. In Mozambique, cellphones help to fight against AIDS and HIV. “British nonprofit Absolute Return for Kids (ARK) incorporated mobile messaging to remind patients enrolled in antiretroviral therapy about appointment dates and to take their medication” (Dobush). Because of the reminders sent to patient’s phones, the retention rates improved 96 percent for patients connected with the mobile messaging service.

The use of technology can also inform people of recent news in the White House and places around the world. For example, it took fifty minutes for foreign and congressional leaders to be notified of the launch of Tomahawk missiles to Syria. “Thursday at 7:40pm Navy destroyers in the Mediterranean launched Tomahawk missiles into Syria.” Then finally, “Thursday at 8:30 p.m.: Foreign leaders and congressional leaders started to be notified.” (Berger, Jansen, Tomlinson). This scenario explicitly shows how technology helps to inform people of important situations easily and efficiently. It only took fifty minutes to learn of the news whereas in times when there was no technology, it might have taken several days for the news to reach the whole world.

Not only is the benefit of technology to communicate faster and learn news quicker but it also helps to save people in the most desperate moments of their life. “Technology restores connectivity to impacted areas so that governments can communicate with citizens and people can find their loved ones” (Technology Plays an Increasing Role in Emergency Management). If an accident were to happen to a city or a village, and a person needed to contact or communicate with a family member or friend, then the use of technology would make the process much faster.

Technology has also made many advances in the medical and science field. Hospitals have computer systems that carry every patient's file. Opposed to when everything had to be handwritten and files would run the risk of getting lost in a fire or stolen with no copy to replace it. In other cases, new and improved technologies have created devices that ensure doctors that their patients are taking their proper medication on time. “The scope of these emerging technologies is breathtaking. High-tech sensors soon will monitor the at-home cardiac patient’s heart every minute of every day. A new type of chip, embedded in a pill will be activated at the precise moment it reaches a patient’s stomach, and will confirm for the medical record that he’s taking his medications” (Morrissy). Because of this high-tech equipment, patients will have less likely of a chance getting off track with their medication, as for the doctors will be able to tell when they have skipped a pill or when a patient's heart beat slows down. Essentially, the patients are non-verbally communicating with their doctors that they’re on time with their medication. Another important value of technology in the medical field is how doctors around the world can

communicate with one another with what treatments they have done. Whether the treatments worked or not, the doctors can share this essential information without the risk of other doctors repeating mistakes. “From doctors’ legendarily bad penmanship to encrypted digital charts, there’s central tension between information technology and medicine — sharing information can be useful” (Tanner). Technology is becoming increasingly common in the medical field, as it also serves a purpose of not only sharing information, but be riding of bad penmanship as well.

Scientists are extremely crucial to the better development of the world. Technology has shown ways in which it helps scientists to become even better at what they do. Protecting the Earth and the animals that inhabit as well as spreading knowledge of what new discoveries have been made. Scientists created satellites using technology to view the world from above.

“Networks of fiber optic cables and systems of Earth-orbiting satellites are extending our ability to survey and protect the environment. These technologies permit real-time monitoring of environmental conditions” (The Role of Technology in Environmentally Sustainable

Development). Satellites are very important to monitor ways in which pollution enters the atmosphere and the rate at which it does so. According to an article by the University of Berklee

“Science and technology feed off one another, propelling both forward” (Science and Technology on Fast Forward). Meaning new knowledge of science can create new technologies which then creates observations about the world around us. This process is highly essential to make new discoveries about the world that are done on a day to day basis. Especially when

technology is communicating back to scientists about how levels of pollution are increasing or decreasing depending upon how much renewable or fossil fuel energy is being produced. An example of how technology has positively influenced scientists is how biologists discovered life at the bottom of the Mid-ocean ridge system using a submersible robot named Alvin. The robot's technology sends information to the scientists of the temperature at the bottom of the sea floor and photographs. This is how the scientists discovered life on ocean floor. From the book of "Down to a Sunless Sea", "Learning more about geology was the reason for going to the hydrothermal vents... finding the animal life was an accidental discovery" (Madin 16). Although the robot made an accidental discovery, the scientists would not if discovered the life on the bottom of the sea floor without the technology sent from Alvin, the robot. In all technology is essential to progress in the science and medical field.

Although thus far technology has shown to be a crucial contributor to the health of the environment, communication and in the medical and science field, technology is also found as detrimental to the growth of social skills, child education, face to face communication and the environment as well.

The environment has proven to be in a very vulnerable state because of global warming and climate change. Any changes to the world could alter the rehabilitation and restoration of planet Earth. Technology is the change that has a colossal impact on the environment in both positive and negative aspects. "Technology creates handguns and hydrogen bombs, and these



kill. We can use science and technology to provide goods and services for human sustenance and comfort and other purposes worthy for the planet. But technology powers good and evil”

(Ausubel 166). Additionally, technology can also affect the Earth by the amount of waste it produces. “Cumulatively, about 500 million PCs reached the end of their service lives between 1994 and 2003. 500 million PCs contain approximately 2,872,000 t of plastics, 718,000 t of lead, 1363 t of cadmium and 287 t of mercury” (Widmer et al). The electronics that are being thrown away in the tons have chemicals that are detrimental to the environment. There is no way to avoid electronical waste, however purchasing items that were made without the intention of planned obsolescence will create less waste. In all the effects of technology can be counterproductive to the benefits it encompasses.

Furthermore, nuclear power was created by the use of technology and this energy source can have incredibly harmful effects on the environment. Rather than collecting energy from the sun or wind, people find it more abundant and cheaper to use nuclear power. When not used properly, nuclear power plants can be more destructive than the burning of fossil fuels. The Chernobyl accident affected thousands of people and did an incredible number to the environment. “The accident caused the largest uncontrolled radioactive release into the environment ever recorded for any civilian operation, and large quantities of radioactive substances were released into the air for about 10 days.” (Chernobyl Accident 1986). This event shows how powerful the use of technology is. One simple mistake with the Chernobyl accident

and it has forever impacted its civilians of Ukraine and the surrounding environment. To the extent that it is questionable whether such technology is worth the risk of continuing to use.

From when children begin to communicate, they are taught social cues, such as introductions like “hi how are you” and how to respectfully communicate face to face. As technology has advanced, people have become less likely to talk face to face when they see an old friend, but continue to acknowledge each other on social media. “Whether the Internet is increasing or decreasing social involvement could have enormous consequences for society and for people's personal well-being” (Kraut et al). As mentioned, technology has an enormous impact on its surrounding whether it be good or bad. In this instance, technology is being viewed as weakening social skills. “If people use the Internet mainly for communication with others through email, distribution lists, multi user dungeons (MUDs), chats, and other such applications, they might do so to augment traditional technologies for social contact, expanding their number of friends and reducing the difficulty of coordinating interaction with them.” (Kraut et al). As people become more used to communicating with one another online, they tend to find less of a reason to catch up in person, face to face. “Like watching television, using a home computer and the Internet generally imply physical inactivity and limited face-to-face social interaction” (Kraut et al). Additionally, because of the rapid increase in technology, people worry that the digital world will take over what is naturally already here. Therefore, like all, technology has shown a significant influence in the social structure that is current today.

Technology has the ability to not only affect one's face to face communication but it also can also impair one's attention span and development of the brain. Technology makes it so that retrieving information about anything can take seconds. Because people no longer need to go to libraries to look up books, we are becoming smarter at a faster pace with less work. People are no longer challenging their brains to the extent that the human brain is shrinking "There's little doubt that modern technology, social media, and information bombardment are changing our brains and not for the better" (Alban). Including reduction in social skills and the increase of adults and children that have difficulty spelling. When someone did not know how to spell a word, they would look it up in the dictionary and remember how to spell that word for the future because they were training their muscle memory to physically search for the word. Now with technology, there is no need to go through all that trouble of getting out of your seat to get the dictionary. Looking the word up on one's phone may seem more efficient; however, it is guaranteed that that person will not remember how to spell the word because of the lack of muscle memory. Because technology retrieves information at a fast pace, people get used to not having to wait for anything, making their attention span shorter. "Goldfish now have longer attention spans than the average American. In 2000, the average attention span was 12 seconds. By 2013, it dropped to 8 seconds, while goldfish are holding steady at 9 seconds" (Alban). In all technology negatively affects one's attention span and the growth of the human brain.

Technology has even made its way to affecting the youth. “The variety, frequency and complexity of the contingent responses the child can get from tablets, smartphones and other touchscreen devices far exceeds anything a traditional physical toy can provide” (Toddlers and Touchscreens). For some children, when there is a smartphone in the household, any other toy does not compare to the excitement and curiosity to playing with a phone. The more households that begin to use cellphones the higher the chance children can get their hands on the devices. “Family ownership of touchscreens in the UK increased from 7% in 2011 to 71% in 2014” (Toddlers and Touchscreens). According to Amy Williams “For children, face-to-face interactions are the primary ways they gain knowledge and learn” (Williams). Technology is changing the way children develop and learn to interact with the world. It is a distraction that needs to be avoided at any cost.

### Conclusion

Collectively, the use of technology has its positive and negative aspects. It reduces emission and cuts back on paper however increases the amount of waste of electronics. Technology also encourages people to communicate, no matter how far away you are from that person. Yet, too much screen time can lead to poor social skills and the inability to appropriately communicate face to face. As far as the medical and science fields, the use of technology has made for incredible discoveries and inventions. For technology not to take over humans, a balance between what is necessary and not necessary needs to be established.

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