Milliken Mills High School

E-Waste Research Report

E-Waste And Our Need For Environmental Stewardship

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There is little debate that our world has been dramatically changed over the past few decades, due to the rapid expansion and evolution of electronic technology. It has brought us countless benefits and opportunities, facilitating our everyday lives and our access to various resources. On the other hand, everything has its downside. Despite all the advantages of electronic technologies, it also causes significant environmental and social damages that many tend to turn a blind eye on. One of the greatest repercussions of electronic technology is e-waste.

Electronic waste or better known as e-waste describes electronic products nearing the end of their useful life, and are destined for refurbishment, reuse, resale or disposal. A shocking average of 20 to 50 million tons of old: phones, computers, and other electronic devices is generated globally every year and is continuously increasing to the point where it is now one of the world's largest trash problems. Notwithstanding some claims that e-waste is mostly disposed in an environmentally friendly manner, it is often intentionally exported in immense amounts overseas by large cargo ships to developing countries where labouring is cheap but working conditions are poor. Last year, the Basel Action Network and the Silicon Valley Toxics Coalition released an alarming report called *Exporting Harm: The Techno-Trashing of Asia*. It found out that 50% to 80% of e-waste intended for recycling in the United States (around 4.7 million to 7.5 million tons) is in fact being exported to developing nations such as China, India and Ghana.

Not only do electronics like cell phones and PCs take up large amounts of space when having mountains of them discarded in a building country, the hundreds of million tons of them bring many devastating environmental and social consequences.

Large quantities of e-waste are a significant contribution to habitat destruction, water pollution and air pollution. Moreover, most electronics contain numerous toxic chemicals in their screens, batteries, cables and circuit boards. Examples of these consist of: lead, mercury, zinc, nickel, barium, etc. When

electronics heat up, these chemicals are released into the air damaging the atmosphere, and seep into bodies of water to negatively impact animals and ecosystems.

The mass exportation of e-waste is not only linked to environmental, but also societal problems. A global investigation conducted by a group of students from the University of British Columbia (UBC), along with their professor in 2010 . They investigated the many negative impacts of e-waste being dumped in numerous third world countries, and how it got there. One of the places they visited was the outskirts of Ghana's biggest city, known for one of the world's largest digital dumping sites, called Agbogbloshie. Many locals there work within the wasteland of old electronics in efforts to dangerously extract valuable materials and metals from these devices such as gold, copper and silver. Children also scavenge a living from the remains, trying to find scrap items to sell in order to make some money. However what is troubling is that a vast majority of locals put their personal safety in risk, as they lack the training to safely disassemble these electronics and risk the exposure of dangerous chemicals to enter their body and deteriorate their health. Young children are a significant concern, while their bodies are still growing and the constant exposure to such chemicals may severely damage their brain, nervous system and lungs over time.

Surprisingly, throwing away electronics carelessly also increases the likelihood of its previous owner to leak his or her personal data, potentially losing crucial information or large sums of money. In the same investigation made by the UBC, it was discovered that within all e-waste shipped to Agbobloshie from countries all over the world, about 50% was working and able to be sold on the market. Shockingly, inside of numerous working computers were harddrives that contain a plenty of sensitive data, such as family photos and credit card numbers of individuals or large organizations. The data is easily able to be retrieved by cyber criminals and may put one in danger. In order to protect yourself against leaking information in such a way, it is suggested to simply crush the harddrive of an old electronic device before throwing it away.

In spite of the arising issues caused by overly exporting e-waste, there are currently still no federal laws in leading e-waste producing countries such as the United States, Canada, China, Germany, ect. that requires the non-polluting disposal of all e-waste or that prohibits it from being exported to developing countries. It comes down to a financial issue, as one of the main reasons why most e-waste is not properly recycled in the country it's coming from, because of how costly and expensive it is to do so. While the federal government is not willing to spend or isn't receiving enough money in order to recycle electronics appropriately, it leaves no choice but to ship it overseas and continue contributing to this growing problem.

It may appear as if it's too late to turn back. However as a global citizen, changing one's personal habits and becoming more aware of this crucial issue will unquestionably help slow down and put an end to it over time.

One of the most common electronics used nowadays and found in e-waste, are cell phones. About 1.5 billion cell phones were manufactured in 2018, only for consumers to use them for an average of 34 months before throwing them away. Some ways to help your cell phone's "useful life" last longer are by: getting a good protective case, cleaning your phone physically and its applications once in a while, keeping your phone at a good temperature and to replace the battery instead of throwing away the entire phone. The tips of elongating the life of your other technological devices are also similar.

Before tossing your electronics in the garbage, other great ways to help reduce your electronic waste as an individual may consist of: passing them on to a friend or a family member, donating them to a local charity, selling them to someone, and recycling them at a trusted local E-cycling center that can be found in most cities, where they will properly handle and extract valuable resources within electronic devices that can be reused such as: glass, gold, silver, copper, palladium and more.

In conclusion, the constant and mass generation of e-waste has been a rapidly growing global issue. Ever since the beginning of our modern technological age, the hundreds of million electrical

devices exported and dumped in the landfills of developing countries have caused severe environmental and societal damage, turning their communities into digital wastelands. As critical as this issue is currently, it is equally as important for those who are ignoring the problem to realize how dangerous this may potentially be to our world. By everyone working together and putting in their efforts to “reduce, re-use, and recycle” as much of their electronics as possible, with time, it is certainly achievable to put an end to the mass production of e-waste, this undeniable problem that we face in our hi-tech world.

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