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Junior Editor's Report

How AI is Affecting Our Planet

By *Dayanis Morales – Norristown Eisenhower Chapter*

Before technological advancements, many of us were burdened with daily time-consuming tasks that we managed on our own without relying on others' abilities, or in this case, computers. However, the invention of computers and their integration with the internet poses a growing concern. Our capacity for independent thought and critical reasoning is hindered by the reliance on artificial intelligence (AI). Through digital transformation and the ever-growing climate change debate, the way people live, work, and interact globally has been influenced. Without a doubt, every aspect of our life has been consumed with the convenience provided by AI forcing us to create ways to combine climate and digital means to benefit our social and democratic values.



Computers and phones in their early development stage comprised bulky and large designs, captivating society. These devices contained vacuum tubes and were notorious for overheating when exposed to high levels of handling. So now imagine how much heat would be produced when so many people are utilizing these appliances. To alleviate this issue, space for cooling was provided. Some had active cooling mechanisms such as fans, and in other cases, heat dissipation was ensured by large spaces through air circulation. Although now that we have been able to create miniaturized microchips for computers, our main problem has become data centers.

What is a data center? It is a building or room that stores IT infrastructure such as servers, data storage drives, and network equipment. They are large consumers of water contributing to

the water scarcity for agriculture and humanity, as well as it produces loads of electronic waste including lead, mercury, and cadmium. According to Bo Yang who leads the energy solution team in Hitachi America, "The amount of electricity required by AI data center racks is estimated to require seven times more power than traditional data center racks" (Yao). This shows that as AI models and apps become more complex, an increase in energy will directly affect our carbon footprint. This is because pollutants are released through the computer systems' electric generation process primarily when fossil fuels are heavily exploited. By burning fossil fuels our greenhouse gas emissions increase causing respiratory problems and the contamination of the air and water. Soon it is expected that 14% of global emissions will come from the Information and Communications Technology (ICT) industry.

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800 kg of raw materials is required for making a 2 kg computer along with its microchips that need rare earth elements unsustainably mined. For the extraction, transport, maintenance, and disposal of these natural resources, a lot of energy is needed causing soil erosion and pollution. Improper disposal of electronic waste further contaminates soil and water. Data centers use six times as much water as the entire 6 million-person nation of Denmark to cool and regulate AI applications. A nationwide app is ChatGPT which is estimated to use close to a 16-ounce water bottle when you ask 5 to 50 prompts or questions. Many people who use this app are teenagers who need help with school-related problems which they can easily do if they apply themselves. Instead of wasting our electricity and water consumption on things that can further hurt the environment, we need to be strategic in the way we use the functionalities of items available to use.

While many corporations are making a profit from making our lives easier, they will soon seek larger AI models meaning an even greater depletion in energy for training. A study

conducted at the University of Massachusetts states, "Training can produce about 626,000 pounds of carbon dioxide or the equivalent of around 300 round trip flights between New York and San Francisco— nearly 5 times the lifetime emission of the average car" (Kanungo).

In conclusion, AI has been integrated into our lives. As the current generation we should not impose undue harm to our planet for future generations as it is our responsibility. We should be more mindful of what we ask AI applications to reduce electronic and water waste. AI isn't going anywhere and will continue to improve, so we need to learn to live with it. Lowering our dependence on ChatGPT and other platforms will help us to analyze and think for ourselves, making us more capable individuals.

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Citation

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