

The thin line between earth and life

Joshua Vidal^{1*}, Mary Joy Redulla²

¹Department of Science, Coordinator-OIC, Unida Christian Colleges, Philippines. jvidal@ucc.ph

²Department of Science, Faculty, Unida Christian Colleges, Philippines. mjredulla@ucc.ph

*Corresponding author: jvidal@ucc.ph

Abstract: The Earth is reportedly perilously close to a tipping point that would drive the planet into an irreversible condition that might be catastrophic for humankind if it were to be reached. A group of scientists from all over the world has come together to make this claim. It is thought that the Earth is about to go through changes on a global scale, which would have an effect not only on the global ecosystems of animals and plants but also on the global water and food supply. In a conference, it was reported that within the next 40 years, there would be a 50% increase in the demand for potable water, a 70% increase in the demand for food, and a roughly 100% increase in the energy demand. All of these will take place at the same time as we need to take action to address issues such as climate change, the depletion of rivers and aquifers, and the destruction of forests. This article has proposed for a call to enlighten people in the academic community to be a part of the solution and, at the very least, perhaps undertake mitigation activities to bend the curve of constantly rising numbers for greenhouse gases, ecological footprint, and environmental damage.

Keywords: Academicians, Anthropocene epoch, Holocene era, Industrial revolution, Tipping point

Failure of a species to adapt to its environment can lead to extinction. However, this is not always the case. In addition, the adaptation process is iterative. Not like the recent changes, which have moved the planet toward a path that is at least 600,000 years older than the present. The Holocene Epoch, formerly known as the Recent Epoch, is the more recent of the two eras that make up the Quaternary Period. The Quaternary Period began approximately 2.6 million years ago. It nearly coincides with the previous 11,700 years in the history of the Earth. The Holocene is a distinctive geologic epoch since it encompasses the later stages of human history after the Stone Age. The sediments that were deposited during the Holocene epoch, which includes both continental and marine deposits, cover the most significant area on Earth of any period described in the geologic record. Given the vast and extensive nature of human involvement during this period, it seems appropriate to give it a unique geological term. The Holocene epoch can be segmented into five distinct periods, or chronozones, according to the climate changes that have occurred throughout it (Mangerud et al., 1974).

In most of Europe, the Holocene era's beginning corresponds to the Mesolithic age's commencement. In locations with relatively early neolithization, such as the Middle East and Anatolia, the Epipaleolithic is chosen over the Mesolithic. During this time, the Federmesser, Hamburgian, and Natufian cultures were responsible for building the first colonies in some of the world's oldest cities, including Jericho in the Middle East. Archeological evidence of a proto-religion was uncovered in places like Gobekli Tepe as early as the ninth millennium before the common era (BCE) (Curry, 2008).

According to a paper by Chris Turney, Jonathan Palmer and Mark Maslin in the journal *Scientific Reports*, and was published in the *Newsroom Sydney*, 2018 the Anthropocene period began between October and December of 1965, and the indicator of this new era was in the heartwood of a peculiar and lone tree on an island in the Southern Ocean. This island was in the middle of the world's largest ocean. The documentary series "The Globe Remade" is set in the artificial age that is currently being referred to as the Anthropocene. It analyzes the science, history, and politics behind various ideas to save the planet from environmental catastrophe.

The impact that human nuclear weapon testing has had on the atmosphere of the Earth is illustrative of how humans have become the principal agent of change around the globe. According to Christopher Fogwill,

who serves as the dean of the School of Geography, Geology, and the Environment at Keele University, this is an important discovery that raises some concerns. During the International Geological Congress in Cape Town, experts from the Working Group on the Anthropocene lobbied for the move, as reported by the Guardian. Because of the impact that humans have had on Earth, a new geological period should be recognized and given the name "Anthropocene." (Gajanan, 2016).

The widespread extinction of species during the Anthropocene, which is sometimes referred to by the name "Anthropocene extinction," is generally believed to be the result of anthropogenic activity, or that which is produced by the actions of humans (particularly when discussing hypothetical future catastrophes). (Wooldridge et al., 2008; Vignieri, S., 2014) the year 2000 was the first time the term "Anthropocene" was used. The most abrupt and widespread loss of species since the Cretaceous-Paleogene extinction crisis 66 million years ago signifies the beginning of a new geological age. Scientists proposed this theory.

Scientists believe that the geological period known as the Holocene, which the current epoch covers, came to an end around the year 1950 because of developments achieved by humans. The Holocene epoch refers to the 12,000 years that have passed since the end of the most recent ice age. Gajanan (2016) mentioned that the term "Anthropocene" was used to refer to the period that began around 200 years ago with the beginning of the Industrial Revolution and marks the beginning of humankind's impact on the natural world. Zalasiewicz et al., (2011) although the ICS has not formally acknowledged the Anthropocene, a working committee is now working on a proposal for establishing an epoch or sub-period by the year 2016.

Macfarlane provides the following definition for the term "Anthropocene": "the new period of geological time in which human activity is considered as having such a significant effect on the environment, climate, and ecology of the planet that it will leave a long-term trace in the stratum record" (p. 1). Numerous scientists agree that it all began in 1950 and is still ongoing (Zeldin-O'Neill, 2017). What is the point and urgency of understanding the Anthropocene in today's generation? A global group of scientists is warning that population increase, widespread harm to natural ecosystems, and climate change may push Earth toward irreversible biosphere change, a global tipping point with fatal implications if appropriate planning and mitigation are not adopted. When you say irreversible change, it simply means there is no turning back; natural disasters appear more prevalent, terrible, and life-threatening than ever before.

As an educator, I can't stop myself from writing this paper in the simplest way possible to inform people in the academic community to be a part of the solution and, at the very least, potentially create activities to bend the curve of constantly moving numbers for greenhouse gases, ecological footprint, and environmental damage. I believe that schools, colleges, universities, and other educational institutions should drive advocacy for the future and the world, not just to execute but also to ensure that it is future-proof and impactful. These days, the question is not who, why, or where it will take place; instead, the focus is on when and how it will take place. How can you plan the action to be carried out systematically and sufficiently? And while considering accurate and attainable objectives that will impact society.

Then what are the possible quick but impactful solution? The issue is not economic expansion per se. Neither is the issue that our natural resources are insufficient. Even though the planet's natural resources are limited, they are vast and much more than what humanity needs to continue thriving and expanding wealth for generations. The issue is the types of resources we access and how we use them (Naam, 2013). As a result, it is time to innovate, be creative, aware, or simply scientific; we should listen to science because what is happening has been communicated through science since the beginning.

1. Contribution of the study

According to Ovans (2017), resilience can be described as the capacity to bounce back from failure, adjust well to change, and maintain forward momentum in the face of adversity. On the other hand, schools do not emphasize educating students on how to be resilient in the face of shifting educational norms and challenges. This paper will contribute an agenda that is vital to be discussed in the field of education. Firstly, how can we best educate children about the workforce, the challenges of society, and the innovations of tomorrow's technology? Secondly, how can we prepare children to thrive in an interconnected world where they must be able to comprehend and accept different points of view, communicate politely with others, and take responsible action for the sustainability and collective well-being of their communities? We are in a better position to support our children in adjusting to, thriving in, and even shaping the future if we are aware of trends that occur on a global scale (OECD, 2019). Lastly, education should also pay attention to guiding students in acquiring the knowledge, talents, views, and values that will lead them to conduct ethically and

responsibly. This should be a focus of the education system. Learners in the 21st century need opportunities to build their creative brilliance to make meaningful contributions to the welfare of humanity.

2. Conclusion

Therefore, this paper covers crucial topics that educators and academicians need to refocus on and revisit while developing the curriculum. These issues have been brought up previously in this study. It is high time that lessons be drawn from the experiences that were had during the COVID-19 pandemic. In this post-pandemic era, a future-proof or flexible curriculum should be one of the issues on the agenda that must be addressed, and it should be tied to and applied in the educational system.

Acknowledgements

The author thanks Academic Voices (AV) and Jozac Publishers for the generous offer and opportunity to publish his work in the journal. Moreover, the researcher also likes to thank the Unida Christian Colleges Department of Science for Basic Education.

ORCID

Joshua Vidal  <https://orcid.org/0000-0003-3138-3668>

References

1. Ateş, M. E. (2022). Pioneers of the ice age models: a brief history from Agassiz to Milankovitch. *History of Geo- and Space Sciences*, 13(1), 23–37. <https://doi.org/10.5194/hgss-13-23-2022>
2. Stepan R. (2017). The Quaternary Period - Facts and Pictures. *Dinosaurs - Pictures and Facts*. Retrieved from <https://www.newdinosaurs.com/the-quaternary-period/>
3. Evidence of impending tipping point for Earth. (2012). *ScienceDaily*. Retrieved from <https://www.sciencedaily.com/releases/2012/06/120606132308.htm>
4. Geologic timeline. (2022). *RationalWiki*. Retrieved from https://rationalwiki.org/wiki/Geologic_timeline#K-Pg_Extinction
5. Interesting facts about the neogene period (2021). *Center for English Language Excellence*. Retrieved from <https://celex.kku.ac.th/4bsh19/41g75/archive.php?page=interesting-facts-about-the-neogene-period>
6. Ishii, F. (2021). What Is the Anthropocene? *Eos*. <https://eos.org/opinions/what-is-the-anthropocene>
7. Keele University. (2018, March 14). Loneliest tree in the world marks new age for our planet. Retrieved from <https://www.keele.ac.uk/about/news/2018/february/loneliesttreeintheworldmarksnewageforourplanet/loneliest-tree-in-the-world-marks-new-age.php>
8. Naam, R. (2013). The Limits of the Earth, Part 1: Problems. *Scientific American Blog* 8. Network. Retrieved from <https://blogs.scientificamerican.com/guest-blog/the-limits-of-the-earth-part-1-problems/#:%7E:text=The%20world%20is%20facing%20incredibly,feed%20a%20planet%20of%20billions>
9. Mangerud, J., Andersen, S. T., Berglund, B. E., & Donner, J. J. (2008). Quaternary stratigraphy of Norden, a proposal for terminology and classification. *Boreas*, 3(3), 109–126. <https://doi.org/10.1111/j.1502-3885.1974.tb00669.x>
10. Ovans, A. (2017, December 6). What Resilience Means, and Why It Matters. *Harvard Business Review*. Retrieved from <https://hbr.org/2015/01/what-resilience-means-and-why-it-matters>
11. Voices, E. (2016). What is the Anthropocene? | Earth | *EarthSky*. *EarthSky* | Updates on Your Cosmos and World. Retrieved from <https://earthsky.org/human-world/anthropocene-decision-to-add-to-geologic-record/>
12. Wikipedia contributors. (2022). Holocene extinction. *Wikipedia*. Retrieved from <https://en.wikipedia.org/wiki?curid=14208>

